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March 31, 2022

Mr. Aaron Yue
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5796 Corporate Avenue
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Subject: *Fourth Quarter 2021 Quarterly Progress Report, PG&E Topock Compressor Station, Needles, California* (PGE20180115A)

Dear Mr. Yue:

Enclosed is the Fourth Quarter 2021 Quarterly Progress Report for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station located in Needles, California (the Site). In December 2021, startup began for Phase 1 of the groundwater remedy system including start of National Trails Highway in-situ reactive zone system operation, maintenance, and monitoring. This quarterly progress report presents an overview of the groundwater remedy and remedial action objectives; a summary of Fourth Quarter (November through December 2021) communications, operations, and performance; and recommendations and planned activities for the next reporting period.

Before startup of Phase 1 of the groundwater remedy system, quarterly reports were developed to document monitoring and performance evaluation of the interim measure hydraulic containment system and site-wide groundwater and surface water monitoring programs for the Site. Quarterly reporting has since transitioned to quarterly progress reports in accordance with the Basis of Design Report/Final (100%) Design Submittal and Construction/Remedial Action Work Plan for the Final Groundwater Remedy.

Please contact me at 760.791.5884 if you have any questions about the quarterly progress report.

Sincerely,

Curt Russell
Topock Remediation Project Manager

Cc: Chris Guerre/DTSC
Pam Innis/DOI
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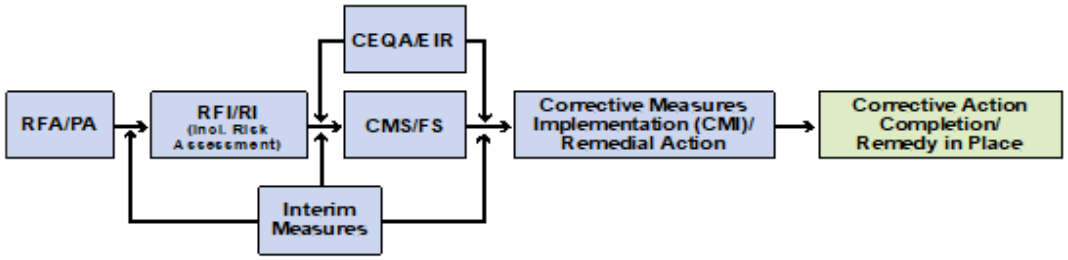
Topock Project Executive Abstract

Document Title:	Fourth Quarter 2021 Quarterly Progress Report, PG&E Topock Compressor Station, Needles CA
Submitting Agency:	DTSC
Final Document?	☒ Yes ☐ No
Date of Document:	March 31, 2022
Who created this document?: (i.e. PG&E, DTSC, DOI, Other)	PG&E
Priority Status:	☐ HIGH ☐ MED ☒ LOW
Is this time critical?	☐ Yes ☒ No
Type of Document:	☐ Draft ☒ Report ☐ Letter ☐ Memo ☐ Other / Explain:
Action Required:	☒ Information Only ☐ Review & Comment Return to: _____ By Date: _____ ☐ 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?	☒ Yes ☐ No 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 DTSC requirements.
Other Justification/s:	☐ Permit ☐ Other / Explain:
Brief Summary of Attached Document:	In December 2021, startup began for Phase 1 of the groundwater remedy system including start of National Trails Highway in-situ reactive zone system operation, maintenance, and monitoring. This quarterly progress report presents an overview of the groundwater remedy and remedial action objectives; a summary of Fourth Quarter (November through December 2021) communications, operations, and performance; and recommendations and planned activities for the next reporting period. Before startup of Phase 1 of the groundwater remedy system, quarterly reports were developed to document monitoring and performance evaluation of the interim measure hydraulic containment system and site-wide groundwater and surface water monitoring programs for the Site. Quarterly reporting has since transitioned to quarterly progress reports in accordance with the Basis of Design Report/Final (100%) Design Submittal and Construction/Remedial Action Work Plan for the Final Groundwater Remedy. Written by: PG&E
Recommendations:	None.

How is this information related to the Final Remedy or Regulatory Requirements?:	This report is required by DTSC as part of the Basis of Design Report/Final (100%) Design Submittal and Construction/Remedial Action Work Plan for the Final Groundwater Remedy.
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).  **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

Pacific Gas and Electric Company

Fourth Quarter 2021 Quarterly Progress Report

Topock Compressor Station

Needles, California

March 31, 2022

Fourth Quarter 2021 Quarterly Progress Report

Topock Compressor Station

Needles, California

March 31, 2022

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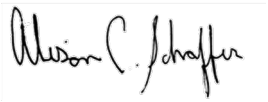

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Acronyms and Abbreviations

µg/L	microgram per liter
Agencies	Department of the Interior and the California Department of Toxic Substances Control
ARAR	Applicable or Relevant and Appropriate Requirements
BOD SMP	Basis of Design Sampling and Monitoring Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COPC	constituent of potential concern
Cr3	trivalent chromium
Cr6	hexavalent chromium
C/RAWP	Construction/Remedial Action Work Plan
DOI	U.S. Department of the Interior
DQO	data quality objectives
DTSC	California Department of Toxic Substances Control
Final BOD	Basis of Design Report/Final (100%) Design Submittal and Construction/ Remedial Action Work Plan for the Final Groundwater Remedy
gpm	gallons per minute
GREM	Green Remediation Evaluation Matrix
IRZ	in-situ reactive zone
MCL	Maximum Contaminant Level
mg/L	milligram per liter
NRWQC	national recommended water quality criteria
NTH	National Trails Highway
O&M	operation and maintenance
ORP	oxidation-reduction potential
PAP	Perimeter Assessment Plan
PG&E	Pacific Gas and Electric Company
Phase 1 Monitoring Plan	Groundwater Remedy Phase 1 Interim Monitoring Plan
Phase 1 Monitoring Program	Groundwater Remedy Phase 1 Monitoring Program
QAPP	Quality Assurance Project Plan
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act

RPWC	remedy-produced water conditioning
Site	PG&E Topock Compressor Station, located in eastern San Bernardino County, 15 miles southeast of the City of Needles, California
SMP	Sampling and Monitoring Plan
SOP	Standard Operating Procedure
TCS	Topock Compressor Station
TDS	total dissolved solids
USEPA	United States Environmental Protection Agency

1 Introduction

Pacific Gas and Electric Company (PG&E) is implementing a final groundwater remedy to address hexavalent chromium (Cr6) in groundwater near the PG&E Topock Compressor Station (TCS) located in eastern San Bernardino County, 15 miles southeast of the City of Needles, California (the Site). PG&E is implementing the groundwater remedy at the TCS in conformance with the requirements of the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERC LA). The U.S. Department of the Interior (DOI) and the California Department of Toxic Substances Control (DTSC), collectively known at the 'Agencies', executed a Memorandum of Understanding on November 22, 2011 establishing coordination guidelines for overseeing implementation of a groundwater response action at the TCS (DTSC and DOI 2011). In a coordinated effort, the DOI and DTSC selected the final groundwater remedy to address chromium in groundwater, which is presented in the Record of Decision (DOI 2010).

In November 2015, PG&E submitted a Basis of Design Report/Final (100%) Design Submittal and Construction/ Remedial Action Work Plan for the Final Groundwater Remedy (Final BOD), which presents the final design basis, design criteria, drawings, specifications, and operation and maintenance (O&M) requirements for the groundwater remedy (CH2M Hill, Inc. [CH2M Hill] 2015a). The infrastructure for the groundwater remedy is being constructed following the plans and procedures within the Construction/Remedial Action Work Plan (C/RAWP; CH2M Hill 2015b). Construction and startup of the groundwater remedy is proceeding in phases. Construction of Phase 1 began in October 2018 and was completed in December 2021 sufficient for initial system startup. The design was modified during construction to accommodate conditions encountered including a plume footprint smaller than documented in the Final BOD. Modifications included changes to the remediation and monitoring well networks and associated infrastructure including deferral of wells to Phase 2. The design of the maintenance systems, in particular the system for conditioning of remedy-produced water, was modified to accommodate the demands of the Phase 1 remedy, which are smaller than those for the full groundwater remedy planned in the Final BOD. These modifications were documented in Work Variance Request #5 (DTSC and DOI 2019), and overall Phase 1 as-built conditions will be documented and subsequently amended as Phase 2 is completed.

In December 2021, startup began for Phase 1 of the groundwater remedy system including the start of National Trails Highway (NTH) in-situ reactive zone (IRZ) system operation, maintenance, and monitoring. Operation and maintenance (O&M) are being performed in accordance with the O&M Plan (Appendix L, Volume 1; CH2M Hill 2015a). Monitoring is being performed in accordance with the Sampling and Monitoring Plan (BOD SMP), with modifications, provided in the Final BOD O&M Manual (Appendix L, Volume 2; CH2M Hill 2015a) to evaluate the performance of the groundwater remedy to attain the Remedial Action Objectives (RAOs) and comply with Applicable or Relevant and Appropriate Requirements (ARARs). Because the groundwater remedy is being constructed in phases, a modified Sampling and Monitoring Plan (SMP) was needed to suit the as-built Phase 1 of the groundwater remedy. PG&E submitted the Groundwater Remedy Phase 1 Interim Monitoring Plan (Phase 1 Monitoring Plan; Arcadis 2021) to the Agencies on October 1, 2021.

Before startup of Phase 1 of the groundwater remedy system, quarterly reports were developed to document monitoring and performance evaluation of the interim measure hydraulic containment system and site-wide groundwater and surface water monitoring programs for the Site. Quarterly reporting has since transitioned to quarterly progress reports in accordance with the BOD SMP reporting requirements (CH2M Hill 2015a). This

quarterly progress report provides a summary of the following elements for Fourth Quarter 2021 (November through December 2021[1]; the reporting period):

- Overview of the groundwater remedy and RAOs;
- Communications Summary. Summary of remedy-related communications with the DTSC, DOI, PG&E, Tribes, and other project stakeholders, which have been distributed as part of community outreach efforts;
- Operations Summary. Description of routine and non-routine downtime, operational data, and process monitoring data; utilities and consumables used and waste handling/disposal; issues encountered with system operation; system optimizations and maintenance performed; and material deviations from design documents, the O&M Plan, and C/RAWP;
- Performance Summary. Description of the monitoring events performed during the current reporting period; the monitoring results and interpretation of results; evaluation of hydraulic control of the plume; interpretation of progress towards the RAOs; and material deviations from design documents, the O&M Plan, and C/RAWP. Some of this content will be provided in future quarterly progress reports;
- O&M Green Remediation Evaluation Matrix (GREM) Summary;
- Recommendations and planned activities for the next reporting period.

1.1 Remedial Action Objectives

As stated in the Final BOD (CH2M Hill 2015a), the RAOs for the groundwater remedy are to:

1. Prevent ingestion of groundwater as a potable water source exhibiting Cr6 concentrations that exceed the regional background concentration of 32 micrograms per liter (µg/L).
2. Prevent or minimize migration of total dissolved chromium and Cr6 in groundwater to ensure that concentrations in surface water do not exceed water quality standards that support the designated beneficial uses of the Colorado River (11 µg/L Cr6; United States Environmental Protection Agency [USEPA] 2022).
3. Reduce the mass of total dissolved chromium and Cr6 in groundwater at the Site to achieve compliance with ARARs in groundwater. This RAO will be achieved by meeting the cleanup goal of the regional background concentration of 32 µg/L of Cr6.
4. Ensure that the geographic location of the target remediation area does not permanently expand following completion of the remedial action.

1.2 Phase 1 Remedy Overview

Per the C/RAWP, Phase 1 of the groundwater remedy comprises the creation of an IRZ along NTH using a line of injection and extraction wells to circulate groundwater and distribute an organic carbon source to promote reduction of soluble Cr6 to the insoluble form, trivalent chromium (Cr3). The groundwater remedy is being constructed in two phases in accordance with the C/RAWP (CH2M Hill 2015b).

[1] A typical reporting period will cover 3 months (e.g., October through December). However, during the transition from the interim measures performance monitoring and site-wide groundwater and surface water monitoring program to the startup of the Phase 1 remedy, this Fourth Quarter 2021 Quarterly Progress Report only discusses operation and monitoring performed at the Site in November and December 2021. Future Fourth Quarter reports will include October, November, and December.

The infrastructure for the Phase 1 remedial system consists of the following components (**Figure 1.1**):

- A line of remedial wells along the NTH that comprise the NTH IRZ (18 remediation wells);
- A treatment system compound, situated on the MW-20 bench, that includes infrastructure for organic carbon amendment and system maintenance;
- A remedy-produced water conditioning (RPWC) system situated on the compressor station (the RPWC system is currently being built);
- Conveyance lines among the NTH IRZ remedials wells, the MW-20 bench treatment compound, and the RPWC system;
- A monitoring well network composed of monitoring wells that existed before the groundwater remedy and monitoring wells constructed for Phase 1 of the groundwater remedy (40 newly constructed monitoring wells);
- Riverbank Extraction Wells (four extraction wells).

The NTH IRZ system is operated by extracting groundwater from the NTH IRZ extraction wells, amending the water with carbon substrate (ethanol), then injecting the amended water into the NTH IRZ injection wells. During Phase 1, the NTH IRZ system is planned to operate for a period of time, nominally 6 months, followed by a period of downtime, nominally 18 months. Actual duration of the operational and rest periods will be determined based on data collected in the process control monitoring program (see Section 3.1).

1.3 Fourth Quarter 2021 Communications

This section summarizes key PG&E communications in Fourth Quarter 2021 associated with Phase 1 of the groundwater remedy:

- On December 20, 2021, PG&E notified the DTSC and DOI that the IM-3 system (groundwater extraction and treatment to control the Cr6 groundwater plume) would be turned off after the first phase of construction when groundwater remedy equipment and systems were in place and ready to begin startup. PG&E requested Agency approval/concurrence of the planned shutdown (Jacobs 2021). The DTSC and DOI concurred with PG&E's request on December 21, 2021 (DTSC 2021, DOI 2021).
- On December 21, 2021, PG&E notified the DTSC and DOI that the I R Z system was operational, and the IM-3 system was shutdown (PG&E 2021a).
- On December 22, 2021, PG&E notified the DTSC and DOI that ethanol injections at part of the Phase 1 groundwater remedy had been initiated (PG&E 2021b).

2 Fourth Quarter 2021 Operations Summary

This section provides a summary of the O&M tasks performed at the Site in Fourth Quarter 2021.

Functional testing of the central portion of the IRZ was performed from November 9 through December 21, 2021. Upon Agency approval on December 21, 2021 (DTSC 2021, DOI 2021), IM-3 groundwater extraction wells TW-03D and TW-02D were shut down, officially terminating IM-3 system operations. Extraction from TW-01 as part of the TW-01 aquifer test was terminated on December 10, 2021.

Startup of Phase 1 of the groundwater remedy (i.e., energization of the IRZ injection and extraction wells and initiation of the ethanol injection process) began on December 22, 2021. Startup consisted of using generator power and operating a subset of injection and extraction wells during daytime hours on workdays. Extraction flow of groundwater from IRZ-23 was established at the target rate (87.2 gallons per minute [gpm]), and water was distributed to IRZ injection wells IRZ-16, IRZ-17, IRZ-18, IRZ-20, and IRZ-27 at the nominal target flowrates from the Final BOD. The remaining extraction wells (IRZ-9, IRZ-13S, and IRZ-13D) and injection wells (IRZ-15, IRZ-21, IRZ-25, IRZ-29, IRZ-31, IRZ-33, IRZ-35, IRZ-37, and IRZ-39) will be brought online in 2022. On December 23 and 27, 2021, ethanol was injected into operational injections wells (IRZ-16, IRZ-17, IRZ-18, IRZ-20, and IRZ-27); a total of 84.4 gallons of ethanol was injected in December 2021.

System runtime, ethanol and recirculated groundwater injection volumes and flowrates, and average flowrates are summarized in **Tables 2.1** and **2.2**. An IRZ system operations and non-routine maintenance log is presented as **Table 2.3**.

No solid waste was disposed off site, and no maintenance was performed in Fourth Quarter 2021. Backwashing of the injection wells and processing of the backwash water will be initiated in January 2022.

In accordance with the O&M Plan (Appendix L, Volume 1, Section 4; CH2M Hill 2015a), baseline water quality data were collected from IRZ injection and extraction wells in December 2021 before remedy startup as part of the well performance tracking baseline assessment. The results are presented in **Table 2.4**. Future well performance tracking data will be reported quarterly in a separate well performance tracking report.

3 Fourth Quarter 2021 Performance Summary

This section provides an overview of the Groundwater Remedy Phase 1 Monitoring Program (Phase 1 Monitoring Program), describes the monitoring performed in Fourth Quarter 2021, and summarizes the Fourth Quarter 2021 monitoring results.

In Fourth Quarter 2021, groundwater and surface water monitoring was performed before the Phase 1 system was turned on (December 22, 2021). Therefore, the monitoring data collected in Fourth Quarter 2021 represent groundwater and surface water conditions before remedy startup and are not used to evaluate remedy performance, but instead are used (along with previous monitoring results) as a baseline of pre-remedy conditions. Monitoring data collected in First Quarter 2022 will be used to evaluate remedy performance.

3.1 Overview of the Phase 1 Monitoring Program

The Phase 1 Monitoring Program includes the following elements:

- Process control monitoring. This program assesses the extent to which the NTH IRZ is functioning as designed according to the NTH IRZ Data Quality Objectives (DQOs) in the BOD SMP (CH2M Hill 2015a). The program consists of six components: dose response monitoring, downgradient well monitoring, northern NTH IRZ extraction monitoring, extraction well monitoring, carbon amendment system monitoring, and hydraulic gradient monitoring. The process control monitoring network is shown on **Figure 3.1**.
- Remedy compliance monitoring. This program consists of surface water and groundwater sampling to evaluate achievement of RAOs 2, 3, and 4, as defined in Section 1.1. The compliance groundwater monitoring and surface water monitoring networks are shown on **Figures 3.2** and **3.3**, respectively.
- Former IM-3 injection area monitoring. The purpose of this program is to evaluate the change in conditions in the IM-3 injection area following the end of injection associated with IM-3 operation. The Former IM-3 injection area network is shown on **Figure 3.2.**
- Constituent of potential concern (COPC) monitoring. This program consists of surface water and groundwater sampling to monitor COPC concentrations (nitrate, dissolved molybdenum, and dissolved selenium) during Phase 1 of remedy startup. The COPC monitoring network is shown on **Figure 3.4**.
- RPWC system monitoring. The purpose of this program is to monitor the quality of water at the RPWC system. The primary objective is to evaluate effluent water quality as it affects the reuse options. During Phase 1, the planned reuse is re-injection to NTH IRZ wells.
- Domestic well sampling. Per direction from the DTSC, domestic/private wells are sampled to evaluate the potential effects the remedy could impart to domestic wells chemically and hydraulically

Table 3.1 provides a summary of the Phase 1 Monitoring Program including monitoring locations, monitoring frequencies, and constituents. Remediation well and monitoring well construction details are provided in **Tables 3.2** and **3.3**, respectively. The Phase 1 Monitoring Program is intended to evaluate the first 2 years of remedy operation; the monitoring program will be re-evaluated and updated (as needed) after 2 years of operation of Phase 1.

3.2 Summary of Fourth Quarter 2021 Monitoring

Groundwater and surface water monitoring was performed in November and December 2021 in accordance with the Phase 1 Monitoring Plan (Arcadis 2021), Standard Operating Procedures (SOPs) presented in Appendix B of the Phase 1 Monitoring Plan, and the PG&E Program Quality Assurance Project Plan (QAPP; CH2M Hill 2014; Critigen 2020). The monitoring locations, monitoring frequencies, and constituents are provided in **Table 3.1**. Carbon amendment system monitoring, hydraulic gradient monitoring, and RPWC system monitoring were not performed in Fourth Quarter 2021; these monitoring programs will be initiated in First Quarter 2022.

The following monitoring wells and extraction wells were not sampled in Fourth Quarter 2021 for the reasons noted below:

- MW-57-050: dry;
- MW-58-065: dry;
- MW-58-115/205: FLUTe™ equipment was removed from the well and these depth intervals are no longer sampled. MW-54BR is currently sampled as part of the Phase 1 Monitoring Program;
- MW-64-150/205/260: FLUTe™ equipment was removed from the well and these depth intervals are no longer sampled. MW-64BR is currently sampled as part of the Phase 1 Monitoring Program;
- PGE-07BR: inoperable pump;
- TW-02D/S: the extraction wells were disconnected due to construction;
- Topock-2/3: access denied;
- IRZ-09 and IRZ-13S/D: extraction operations at these extraction wells had not begun in Fourth Quarter 2021; therefore, the wells were not sampled; they will be sampled in First Quarter 2022.

In Fourth Quarter 2021, the process control monitoring wells, COPC monitoring wells, and surface water locations were sampled for nitrate/nitrite as nitrogen. Starting in First Quarter 2022, samples collected from these locations will be analyzed for nitrate consistent with the BOD SMP (CH2MHill 2015a) and Phase 1 Monitoring Plan (Arcadis 2021).

Field parameters (temperature, pH, specific conductivity, oxidation-reduction potential [ORP], turbidity, total dissolved solids [TDS], and salinity) were measured before groundwater and surface water sample collection. Samples were sent to Asset Laboratories in Las Vegas, Nevada for laboratory analysis. Samples collected from monitoring wells in Arizona were sent to EMAX Laboratories, Inc. in Torrance, California. Analytical results were validated in accordance with the QAPP (CH2M Hill 2014; Critigen 2020).

3.3 Summary of Fourth Quarter 2021 Monitoring Results

The Fourth Quarter 2021 monitoring results represent groundwater and surface water conditions before remedy startup. Laboratory analytical results and field parameter monitoring results are presented in **Table 3.4** and **Appendix A**, respectively. Analytical results for all monitoring wells and surface water locations in the Phase 1 Monitoring Program from January 2020 to December 2021 are provided in **Appendix B**. Laboratory reports from Fourth Quarter 2021 are provided in **Appendix C**.

The following sections provide a summary of the Fourth Quarter 2021 Cr6, in-situ byproduct, and COPC monitoring results.

3.3.1 Hexavalent Chromium Results

Figure 3.4 shows the distribution of Cr6 in groundwater across the Site in Fourth Quarter 2021 for wells monitoring Layers 1 through 5[2] of the Alluvial Aquifer and bedrock. These figures show the interpreted extent of groundwater Cr6 concentrations higher than 32 µg/L for each depth interval before NTH IRZ startup.

At the surface water monitoring locations, Cr6 concentrations were below the water quality standard of 11 µg/L (USEPA 2022); all results were non-detect at the reporting limit.

3.3.2 In-Situ Byproduct Results

Baseline dissolved arsenic, dissolved iron, dissolved manganese, and dissolved barium concentrations for the dose response and downgradient monitoring wells are provided in **Table 3.5**.

For reference to future data collected after NTH IRZ startup, baseline concentrations were established as follows:

- For monitoring wells installed before 2019, the maximum historical result was selected.
- For monitoring wells installed after 2019, the maximum result between January 2020 and December 2021 was selected, which did not include initial samples collected after well installation and allowed for water quality stabilization after installation.

Figures 3.5 through **3.7** show baseline dissolved arsenic, dissolved iron, dissolved manganese concentrations for the dose response and downgradient monitoring wells monitoring Layers 1 through 5 of the Alluvial Aquifer and Bedrock. The BOD SMP provides anticipated and maximum concentrations (i.e., action levels) for dissolved arsenic, dissolved manganese, and dissolved iron as part of the process control monitoring program (see Table 2.2-1 of the BOD SMP [CH2M Hill 2015a]). Barium is also monitored as part of the process control monitoring program, but anticipated concentrations and action levels for barium are not specified in the Final BOD. Baseline concentrations for additional monitoring wells located in Arizona and the East Ravine are also presented on the figures for future comparison following remedy startup. In-situ byproduct analytical data are collected quarterly from the process control monitoring network; figures displaying the distribution of in-situ byproducts in groundwater will be presented in future quarterly progress reports as needed.

At the surface water monitoring locations, dissolved arsenic concentrations were below the NRWQC for aquatic life of 150 µg/L. There is no NRWQC for aquatic life for dissolved manganese (USEPA 2022). Dissolved arsenic and dissolved manganese concentrations were below the California primary and secondary Maximum Contaminant Levels (MCLs) of 10 µg/L (primary MCL) and 0.05 milligram per liter (mg/L; secondary MCL), respectively (California Code of Regulations 2022).

3.3.3 COPC Results

Figures 3.8 through **3.10** show the baseline distribution of COPCs (dissolved molybdenum, dissolved selenium, and nitrate/nitrite as nitrogen) in groundwater across the Site in Fourth Quarter 2021 for wells monitoring Layers 1 through 5 of the Alluvial Aquifer and bedrock. COPC analytical data are collected annually from the COPC

[2] Layers 1 through 5 represent depth intervals within the Alluvial Aquifer and bedrock: In terms of elevation mean sea level, Layer 1 = greater than 425 feet; Level 2 = 400 to 425 feet; Level 3 = 350 to 400 feet; Level 4 = 300 to 350 feet; Level 5 = 250 to 300 feet.

monitoring network; figures displaying the distribution of COPCs in groundwater across the Site will be presented annually as part of future Fourth Quarter progress reports.

A COPC Perimeter Assessment Plan (PAP) was developed to notify the DTSC when threshold concentrations (i.e., trigger levels) in the outer plume compliance groundwater monitoring wells are exceeded. Thirty-one monitoring wells are included in the COPC PAP, which are identified in **Table D-1** of **Appendix D**. The trigger levels are based on Shewhart control limits calculated from the most recent eight sample results for each monitoring well[3]. The trigger levels will be updated annually. **Appendix D** describes the statistical methodology used to calculate the Shewhart control limits and presents the trigger levels that will be applied in 2022. The COPC PAP decision tree, which outlines notifications and actions to be taken when COPC concentrations in a COPC PAP well exceed a trigger level, is provided in **Appendix D** (Figure 5.1-7 of the BOD SMP [CH2M Hill 2015a]).

[3] If the Shewhart control limit is higher than the ARAR concentration in a well in which the baseline concentration (defined based on the median of the available data) is below the ARAR, then the ARAR concentration is used as the trigger level. The ARAR concentrations for dissolved selenium and nitrate are 50 µg/L and 10 mg/L, respectively. There is no ARAR concentration for dissolved molybdenum.

4 Green Remediation Evaluation Matrix Summary

PG&E develops a GREM summary report to document various sustainability metrics generated by PG&E including the TCS. The TCS currently holds a ‘gold’ sustainability rating in PG&E’s GREM evaluation. The GREM summary includes data regarding greenhouse gas reductions, savings from use of renewable energy, reductions in liquid and solid waste, and local economy boost. The GREM summary is reported under separate cover and is not provided in this quarterly progress report; however, typical measures taken to enhance the sustainability of activities associated with the groundwater remedy include:

- Purge water from groundwater sampling continues to be disposed on site through the final groundwater remedy infrastructure.
- The boat contractor engaged to support river monitoring continues to be employed locally.
- Laboratory services continue to be provided by a California-certified, Las Vegas-based lab, and some diagnostic evaluations will also be completed on site using bench-scale portable meters.
- Reports will be submitted preferentially in an electronic format, with hard copies generated on request.
- Low-flow sampling methods continue to be used at most wells screened in the Alluvial Aquifer, reducing the volume of purge water.
- For wells still using the three-volume purge sampling methods, pumps and tubing are sized for the optimum purge technique at each well.
- A new, modern, quiet offroad utility vehicle has been purchased to complete sampling on the floodplain and other sensitive areas instead of a full-size pickup truck.
- O&M operators reside locally, and spare parts and equipment are procured locally (to the extent practicable).

5 Recommendations and Planned Activities for Next Reporting Period

Phase 1 remedy operations and the Phase 1 Monitoring Program will be performed in First Quarter 2022 (January to March 2022) in accordance with the O&M Plan (CH2M Hill 2015a) and Phase 1 Monitoring Plan (Arcadis 2021). Operations, monitoring, and monitoring results will be reported in the First Quarter 2022 Quarterly Progress Report.

Construction of the RPWC system will continue in First Quarter 2022; the system will be turned on when construction is completed. The electrical system will be completed in First Quarter 2022 and the Phase 1 remedy will transition from generator power and weekday operations to TCS power and fulltime operations. NTH IRZ operations will expand to include additional extraction and injection wells.

A First Quarter 2022 Well Performance Report will also be submitted to document well performance tracking data from First Quarter 2022, in accordance with the O&M Plan (CH2M Hill 2015a).

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Tables

Table 2.1
NTH IRZ Operational Overview
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Month	Recirculated Groundwater Extraction Volume (gal)	Recirculated Groundwater Injection Volume (gal)	Injection Flow Rate, During Operation (gpm)	Extraction Flow Rate, During Operation (gpm)	Ethanol Injection Volume (gal)	Run Time (hours)[a]	Run Time (percent)[b]
November 2021	--	--	--	--	--	--	--
December 2021	307,613	312,416	93.2	91.6	84.4	56	8

Notes:

[a] Run time in hours is calculated from extraction well hours over the course of the month

[b] Percent run time is calculated from extraction well hours operational divided by the total hours in the month x 100%.

1. Ethanol injections began on December 22, 2021.

Abbreviations:

gal = gallon

gpm = gallon(s) per minute

IRZ = In-Situ Reactive Zone

NTH = National Trails Highway

Table 2.2
Summary of NTH IRZ System Discharges to Groundwater
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Well ID	Aquifer Interval	Well Type	Operating Period	Recirculated Groundwater Volume (gal)	Ethanol Volume (gal)	Total Hours Operating (hours)	Active Time Operating (percent)	Average Flow Rate When Operating (gpm)
IRZ-15	Upper	Injection	Nov-21	--	--	--	--	--
IRZ-15	Upper	Injection	Dec-21	--	--	--	--	--
IRZ-15	Lower	Injection	Nov-21	--	--	--	--	--
IRZ-15	Lower	Injection	Dec-21	--	--	--	--	--
IRZ-16	Upper	Injection	Nov-21	--	--	--	--	--
IRZ-16	Upper	Injection	Dec-21	18,090	5.1	55	7	5.5
IRZ-16	Lower	Injection	Nov-21	--	--	--	--	--
IRZ-16	Lower	Injection	Dec-21	37,913	10.4	56	8	11.3
IRZ-17	Upper	Injection	Nov-21	--	--	--	--	--
IRZ-17	Upper	Injection	Dec-21	25,091	6.6	56	8	7.5
IRZ-17	Lower	Injection	Nov-21	--	--	--	--	--
IRZ-17	Lower	Injection	Dec-21	48,210	13.1	56	8	14.3
IRZ-18	Upper	Injection	Nov-21	--	--	--	--	--
IRZ-18	Upper	Injection	Dec-21	23,330	6.5	56	8	6.9
IRZ-18	Lower	Injection	Nov-21	--	--	--	--	--
IRZ-18	Lower	Injection	Dec-21	46,126	12.8	56	8	13.7
IRZ-20	Upper	Injection	Nov-21	--	--	--	--	--
IRZ-20	Upper	Injection	Dec-21	18,890	5.2	56	8	5.6
IRZ-20	Lower	Injection	Nov-21	--	--	--	--	--
IRZ-20	Lower	Injection	Dec-21	34,313	9.5	55	7	10.4
IRZ-21	Upper	Injection	Nov-21	--	--	--	--	--
IRZ-21	Upper	Injection	Dec-21	--	--	--	--	--
IRZ-21	Lower	Injection	Nov-21	--	--	--	--	--
IRZ-21	Lower	Injection	Dec-21	--	--	--	--	--
IRZ-25	Upper / Upper Middle	Injection	Nov-21	--	--	--	--	--
IRZ-25	Upper / Upper Middle	Injection	Dec-21	--	--	--	--	--
IRZ-25	Lower	Injection	Nov-21	--	--	--	--	--
IRZ-25	Lower	Injection	Dec-21	--	--	--	--	--
IRZ-27	Upper / Upper Middle	Injection	Nov-21	--	--	--	--	--
IRZ-27	Upper / Upper Middle	Injection	Dec-21	36,743	7.3	56	8	10.9
IRZ-27	Lower	Injection	Nov-21	--	--	--	--	--
IRZ-27	Lower	Injection	Dec-21	23,710	7.9	56	8	7.1
IRZ-29	Upper	Injection	Nov-21	--	--	--	--	--
IRZ-29	Upper	Injection	Dec-21	--	--	--	--	--
IRZ-29	Lower	Injection	Nov-21	--	--	--	--	--
IRZ-29	Lower	Injection	Dec-21	--	--	--	--	--
IRZ-31	Upper	Injection	Nov-21	--	--	--	--	--
IRZ-31	Upper	Injection	Dec-21	--	--	--	--	--
IRZ-31	Lower	Injection	Nov-21	--	--	--	--	--
IRZ-31	Lower	Injection	Dec-21	--	--	--	--	--

Table 2.2
Summary of NTH IRZ System Discharges to Groundwater
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Well ID	Aquifer Interval	Well Type	Operating Period	Recirculated Groundwater Volume (gal)	Ethanol Volume (gal)	Total Hours Operating (hours)	Active Time Operating (percent)	Average Flow Rate When Operating (gpm)
IRZ-33	Upper	Injection	Nov-21	--	--	--	--	--
IRZ-33	Upper	Injection	Dec-21	--	--	--	--	--
IRZ-33	Lower	Injection	Nov-21	--	--	--	--	--
IRZ-33	Lower	Injection	Dec-21	--	--	--	--	--
IRZ-35	Upper	Injection	Nov-21	--	--	--	--	--
IRZ-35	Upper	Injection	Dec-21	--	--	--	--	--
IRZ-37	Upper	Injection	Nov-21	--	--	--	--	--
IRZ-37	Upper	Injection	Dec-21	--	--	--	--	--
IRZ-39	Upper	Injection	Nov-21	--	--	--	--	--
IRZ-39	Upper	Injection	Dec-21	--	--	--	--	--
IRZ-9	Upper	Extraction	Nov-21	--	--	--	--	--
IRZ-9	Upper	Extraction	Dec-21	--	--	--	--	--
IRZ-13D	Lower	Extraction	Nov-21	--	--	--	--	--
IRZ-13D	Lower	Extraction	Dec-21	--	--	--	--	--
IRZ-13S	Upper	Extraction	Nov-21	--	--	--	--	--
IRZ-13S	Upper	Extraction	Dec-21	--	--	--	--	--
IRZ-23	Lower	Extraction	Nov-21	--	--	--	--	--
IRZ-23	Lower	Extraction	Dec-21	307,613	--	56	8	91.6

Abbreviations:
-- = not applicable
gal = gallon
gpm = gallons per minute
ID = identification
IRZ = In Situ Reactive Zone
NTH = National Trails Highway

Table 2.3
NTH IRZ System Operations and Non-Routine Maintenance Log
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Date	Approximate IRZ Systemwide Down Time (hours)	Operations and Maintenance Log	Notes
12/22/2021	--	Functional testing and startup and initial operation of wells. Injection Wells: IRZ-16, IRZ-17, IRZ-18, IRZ-20, IRZ-27. Extraction wells: IRZ-23.	Daytime operation on work days using portable generators.

Abbreviations:
IRZ = in-situ reactive zone
NTH = National Trails Highway
-- = not applicable

Table 2.4
Fourth Quarter 2021 Well Performance Baseline Assessment Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Well ID	Sample ID	Sample Type	Sample Date	Alkalinity, bicarb as CaCO3 mg/L	Alkalinity, carb as CaCO3 mg/L	Alkalinity, total as CaCO3 mg/L	Aluminum µg/L	Aluminum, dissolved µg/L	Ammonia as nitrogen µg/L	Antimony µg/L	Antimony, dissolved µg/L	Arsenic µg/L	Arsenic, dissolved µg/L	Barium µg/L	Barium, dissolved µg/L	Beryllium µg/L
IRZ-15	IRZ-15-200-122021	N	12/20/21	38	ND (5.0)	38	640	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.1 J)	ND (0.1 J)	45	45	ND (2.5)
IRZ-15	IRZ-15-055-122021	N	12/20/21	81	ND (5.0)	81	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.1 J)	ND (0.1 J)	56	52	ND (0.5)
IRZ-16	IRZ-16-087-122021	N	12/20/21	34	ND (5.0)	34	66	ND (50)	--	ND (0.5)	ND (0.5)	5.7 J	ND (0.1 J)	54	51	ND (2.5)
IRZ-16	IRZ-16-055-122021	N	12/20/21	85	ND (5.0)	85	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	1.6 J	ND (0.1 J)	72	64	ND (0.5)
IRZ-17	IRZ-17-057-122021	N	12/20/21	49	ND (5.0)	49	80	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.1 J)	ND (0.1 J)	75	68	ND (2.5)
IRZ-17	IRZ-17-165-122021	N	12/20/21	76	ND (5.0)	76	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.1 J)	ND (0.1 J)	79	75	ND (0.5)
IRZ-18	IRZ-18-059-122021	N	12/20/21	89	ND (5.0)	89	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	4.5 J	0.56 J	60	53	ND (0.5)
IRZ-18	IRZ-18-182-122021	N	12/20/21	37	ND (5.0)	37	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.1 J)	ND (0.1 J)	72	69	ND (2.5)
IRZ-20	IRZ-20-071-122021	N	12/20/21	33	ND (5.0)	33	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.1 J)	ND (0.1 J)	97	96	ND (0.5)
IRZ-20	IRZ-20-155-122021	N	12/20/21	91	ND (5.0)	91	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	3.4 J	0.91 J	48	53	ND (0.5)
IRZ-21	IRZ-21-065-122021	N	12/20/21	96	ND (5.0)	96	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	13 J	1.3 J	50	40	ND (0.5)
IRZ-21	IRZ-21-157-122021	N	12/20/21	39	ND (5.0)	39	100	ND (50)	--	ND (0.5)	ND (0.5)	7.1 J	ND (0.1 J)	250	230	ND (2.5)
IRZ-23	IRZ-23-143-122121	N	12/21/21	87	ND (5.0)	87	ND (50)	ND (50 J)	ND (0.2)	ND (0.5)	ND (0.5)	2.7 J	0.92 J	55	51	ND (0.5 J)
IRZ-25	IRZ-25-067-122021	N	12/20/21	89	ND (5.0)	89	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	4.6 J	0.91 J	38	30	ND (0.5)
IRZ-25	IRZ-25-166-122021	N	12/20/21	47	ND (5.0)	47	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.1 J)	ND (0.1 J)	49	41	ND (0.5)
IRZ-27	IRZ-27-067-122021	N	12/20/21	110	ND (5.0)	110	750	ND (50)	--	ND (0.5)	ND (0.5)	6.3 J	1.2 J	100	41	ND (0.5)
IRZ-27	IRZ-27-137-122021	N	12/20/21	95	ND (5.0)	95	52	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.1 J)	ND (0.1 J)	58	34	ND (0.5)

Table 2.4
Fourth Quarter 2021 Well Performance Baseline Assessment Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Well ID	Sample ID	Sample Type	Sample Date	Beryllium, dissolved µg/L	Biological Oxygen Demand, 5-Day mg/L	Boron µg/L	Boron, dissolved mg/L	Bromide mg/L	Cadmium µg/L	Cadmium, dissolved µg/L	Calcium µg/L	Calcium, dissolved mg/L	Chloride mg/L	Chromium, Hexavalent µg/L	Chromium, total dissolved µg/L	Chromium, total µg/L
IRZ-15	IRZ-15-200-122021	N	12/20/21	ND (0.5 J)	--	1,700	1.7	ND (5.0)	ND (0.5)	ND (0.5)	420,000	460	7,100	590	690	630
IRZ-15	IRZ-15-055-122021	N	12/20/21	ND (0.5 J)	--	550	0.56	ND (5.0)	ND (0.5)	ND (0.5)	180,000	180	1,200	65	77	130
IRZ-16	IRZ-16-087-122021	N	12/20/21	ND (0.5 J)	--	1,800	1.7	ND (5.0)	ND (0.5)	ND (0.5)	410,000	430	7,000	220	300	1,300
IRZ-16	IRZ-16-055-122021	N	12/20/21	ND (0.5 J)	--	590	0.6	ND (5.0)	ND (0.5)	ND (0.5)	150,000	170	1,300	91	87	410
IRZ-17	IRZ-17-057-122021	N	12/20/21	ND (0.5 J)	--	1,400	1.3	ND (5.0)	ND (0.5)	ND (0.5)	600,000 J	600	6,600	65	67	760
IRZ-17	IRZ-17-165-122021	N	12/20/21	ND (0.5 J)	--	780	0.81	ND (5.0)	ND (0.5)	ND (0.5)	230,000	260	1,900	20	21	48
IRZ-18	IRZ-18-059-122021	N	12/20/21	ND (0.5 J)	--	470	0.5	ND (5.0)	ND (0.5)	ND (0.5)	110,000	130	760	300	270	1,400
IRZ-18	IRZ-18-182-122021	N	12/20/21	ND (0.5 J)	--	1,900	2	ND (5.0)	ND (0.5)	ND (0.5)	460,000 J	470	7,700	1,400	1,500	2,400
IRZ-20	IRZ-20-071-122021	N	12/20/21	ND (0.5 J)	--	1,400	1.5	ND (5.0)	ND (0.5)	ND (0.5)	490,000	490	6,200	52	290	1,000
IRZ-20	IRZ-20-155-122021	N	12/20/21	ND (0.5 J)	--	450	0.34	ND (5.0)	ND (0.5)	ND (0.5)	93,000 J	100	610	140	130	890
IRZ-21	IRZ-21-065-122021	N	12/20/21	ND (0.5 J)	--	370	0.34	ND (5.0)	ND (0.5)	ND (0.5)	68,000	76	470	270	180	3,600
IRZ-21	IRZ-21-157-122021	N	12/20/21	ND (0.5 J)	--	1,800	1.7	ND (5.0)	ND (0.5)	ND (0.5)	600,000 J	640	7,300	2,900	2,900	4,700
IRZ-23	IRZ-23-143-122121	N	12/21/21	ND (0.5 J)	ND (1.5 J)	620	0.63 J	ND (5.0)	ND (0.5)	ND (0.5)	170,000	170	990	150	150	370
IRZ-25	IRZ-25-067-122021	N	12/20/21	ND (0.5 J)	--	500	0.53	ND (5.0)	ND (0.5)	ND (0.5)	100,000 J	110	490	2,000	2,000	6,300
IRZ-25	IRZ-25-166-122021	N	12/20/21	ND (0.5 J)	--	1,800	0.9	ND (5.0)	ND (0.5)	ND (0.5)	430,000 J	160	5,600	3,700	810	4,000
IRZ-27	IRZ-27-067-122021	N	12/20/21	ND (0.5 J)	--	700	0.77	ND (5.0)	ND (0.5)	ND (0.5)	100,000 J	99	510	3,200	3,200	4,000
IRZ-27	IRZ-27-137-122021	N	12/20/21	ND (0.5 J)	--	1,800	1.6	ND (5.0)	ND (0.5)	ND (0.5)	200,000	150	1,500	520	410	1,200

Table 2.4
Fourth Quarter 2021 Well Performance Baseline Assessment Results
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Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Well ID	Sample ID	Sample Type	Sample Date	Cobalt µg/L	Cobalt, dissolved µg/L	Copper µg/L	Copper, dissolved µg/L	Fluoride mg/L	Hardness, Calcium (As CaCO3) mg/L	Hardness, Magnesium (As CaCO3) mg/L	Hardness, total as CaCO3 mg/L	Iron Related Bacteria CFU/mL	Iron µg/L	Iron, dissolved µg/L	Lead µg/L	Lead, dissolved µg/L
IRZ-15	IRZ-15-200-122021	N	12/20/21	ND (0.5)	ND (0.5)	2.9 J	1.7 J	4.2	--	--	--	35,000	140 J	23	ND (1.0)	ND (1.0)
IRZ-15	IRZ-15-055-122021	N	12/20/21	0.9	ND (0.5)	1.3 J	ND (1.0 J)	2.8	--	--	--	9,000	180 J	ND (20)	ND (1.0)	ND (1.0)
IRZ-16	IRZ-16-087-122021	N	12/20/21	1.3	ND (0.5)	14 J	1.2 J	4.5	--	--	--	35,000	2,200 J	ND (20)	ND (1.0)	ND (1.0)
IRZ-16	IRZ-16-055-122021	N	12/20/21	2.4	ND (0.5)	4.1 J	ND (1.0 J)	3.3	--	--	--	35,000	970 J	ND (20)	ND (1.0)	ND (1.0)
IRZ-17	IRZ-17-057-122021	N	12/20/21	0.75	ND (0.5)	4.6 J	ND (1.0 J)	2.8	--	--	--	35,000	1,700 J	ND (20)	ND (1.0)	ND (1.0)
IRZ-17	IRZ-17-165-122021	N	12/20/21	ND (0.5)	ND (0.5)	ND (1.0 J)	ND (1.0 J)	2.8	--	--	--	35,000	55 J	21	ND (1.0)	ND (1.0)
IRZ-18	IRZ-18-059-122021	N	12/20/21	3.4	ND (0.5)	15 J	ND (1.0 J)	3	--	--	--	35,000	2,200 J	ND (20)	ND (1.0)	ND (1.0)
IRZ-18	IRZ-18-182-122021	N	12/20/21	4.1	1.4	11 J	1.3 J	4.7	--	--	--	9,000	1,800 J	ND (20)	ND (1.0)	ND (1.0)
IRZ-20	IRZ-20-071-122021	N	12/20/21	24	8.1	25 J	4.2 J	3.6	--	--	--	500	3,000 J	390	ND (1.0)	ND (1.0)
IRZ-20	IRZ-20-155-122021	N	12/20/21	2.4	1.2	9.4 J	2.5 J	2.2	--	--	--	500	1,500 J	ND (20)	ND (1.0)	ND (1.0)
IRZ-21	IRZ-21-065-122021	N	12/20/21	6.2	ND (0.5)	36 J	ND (1.0 J)	1.9	--	--	--	9,000	4,800 J	ND (20)	ND (1.0)	ND (1.0)
IRZ-21	IRZ-21-157-122021	N	12/20/21	6.9	0.73	20 J	2.2 J	4.6	--	--	--	9,000	3,500 J	ND (20)	2	ND (1.0)
IRZ-23	IRZ-23-143-122121	N	12/21/21	4.6	ND (0.5)	3.4 J	ND (1.0 J)	2	430	110	540	2,200	690	91 J	ND (1.0)	ND (1.0)
IRZ-25	IRZ-25-067-122021	N	12/20/21	6	ND (0.5)	37 J	ND (1.0 J)	1.4	--	--	--	9,000	1,700 J	ND (20)	ND (1.0)	ND (1.0)
IRZ-25	IRZ-25-166-122021	N	12/20/21	2.9	0.95	4.8 J	1.3 J	4.2	--	--	--	9,000	250 J	ND (20)	ND (1.0)	ND (1.0)
IRZ-27	IRZ-27-067-122021	N	12/20/21	9.6	ND (0.5)	17 J	ND (1.0 J)	1.8	--	--	--	500	1,900 J	ND (20)	36	ND (1.0)
IRZ-27	IRZ-27-137-122021	N	12/20/21	3.7	2.6	5.7 J	ND (1.0 J)	1.5	--	--	--	9,000	1,200 J	31	1.8	ND (1.0)

Table 2.4
Fourth Quarter 2021 Well Performance Baseline Assessment Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Well ID	Sample ID	Sample Type	Sample Date	Magnesium µg/L	Magnesium, dissolved µg/L	Manganese µg/L	Manganese, dissolved µg/L	Mercury µg/L	Mercury, dissolved µg/L	Modified Fouling Index s/L2	Molybdenum µg/L	Molybdenum, dissolved µg/L	Nickel µg/L	Nickel, dissolved µg/L	Nitrate (as nitrogen) mg/L	Nitrite as Nitrogen mg/L
IRZ-15	IRZ-15-200-122021	N	12/20/21	14,000 J	23	26	14	ND (0.2)	ND (0.2)	--	58	45	ND (25 J)	ND (25 J)	1.4	ND (5.0)
IRZ-15	IRZ-15-055-122021	N	12/20/21	27,000 J	26	5.3	0.97	ND (0.2)	ND (0.2)	--	26	19	46 J	18 J	2.3	ND (5.0)
IRZ-16	IRZ-16-087-122021	N	12/20/21	14,000 J	17	24	14	ND (0.2)	ND (0.2)	--	92	58	ND (1.0 J)	ND (1.0 J)	1.2	ND (5.0)
IRZ-16	IRZ-16-055-122021	N	12/20/21	30,000 J	29	18	2.2	ND (0.2)	ND (0.2)	--	17	10	85 J	41 J	2.5	ND (5.0)
IRZ-17	IRZ-17-057-122021	N	12/20/21	40,000 J	40	40	32	ND (0.2)	ND (0.2)	--	57	30	ND (1.0 J)	ND (1.0 J)	1.3	ND (5.0)
IRZ-17	IRZ-17-165-122021	N	12/20/21	32,000 J	34	1.9	0.59	ND (0.2)	ND (0.2)	--	20	14	4.4 J	ND (1.0 J)	1.5	ND (5.0)
IRZ-18	IRZ-18-059-122021	N	12/20/21	16,000 J	17	31	2.6	ND (0.2)	ND (0.2)	--	75	21	40 J	6.6 J	3.9	ND (5.0)
IRZ-18	IRZ-18-182-122021	N	12/20/21	15,000 J	16	73	56	ND (0.2)	ND (0.2)	--	100	84	ND (1.0 J)	ND (1.0 J)	1.4	ND (5.0)
IRZ-20	IRZ-20-071-122021	N	12/20/21	20,000 J	21	260	110	ND (0.2)	ND (0.2)	--	67	45	340 J	96 J	1.2	ND (5.0)
IRZ-20	IRZ-20-155-122021	N	12/20/21	18,000 J	19	17	10	ND (0.2)	ND (0.2)	--	59	11	54 J	30 J	4.2	ND (5.0)
IRZ-21	IRZ-21-065-122021	N	12/20/21	18,000 J	21	56	ND (0.5)	ND (0.2)	ND (0.2)	--	170	10	66 J	9.4 J	4.6	ND (5.0)
IRZ-21	IRZ-21-157-122021	N	12/20/21	25,000 J	24	79	15	ND (0.2)	ND (0.2)	--	79	51	ND (1.0 J)	ND (1.0 J)	2.2	ND (5.0)
IRZ-23	IRZ-23-143-122121	N	12/21/21	25,000 J	26 J	29	ND (0.5)	ND (0.2)	ND (0.2)	7.5	11	6.7	16 J	9.0 J	5.5	ND (5.0)
IRZ-25	IRZ-25-067-122021	N	12/20/21	19,000 J	19	51	0.55	ND (0.2)	ND (0.2)	--	330	16	140 J	52 J	12	ND (5.0)
IRZ-25	IRZ-25-166-122021	N	12/20/21	15,000 J	17	83	18	ND (0.2)	ND (0.2)	--	64	17	ND (1.0 J)	57 J	2.8	ND (5.0)
IRZ-27	IRZ-27-067-122021	N	12/20/21	16,000 J	16	310	2.1	ND (0.2)	ND (0.2)	--	36	22	87 J	7.6 J	7.3	ND (5.0)
IRZ-27	IRZ-27-137-122021	N	12/20/21	21,000 J	25	150	34	ND (0.2)	ND (0.2)	--	65	12	150 J	130 J	5.1	ND (5.0)

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Well ID	Sample ID	Sample Type	Sample Date	Ortho-phosphate, dissolved mg/L	Potassium µg/L	Potassium, dissolved mg/L	Selenium µg/L	Selenium, dissolved µg/L	Silver µg/L	Silver, dissolved µg/L	Slime Forming Bacteria CFU/mL	Sodium µg/L	Sodium, dissolved mg/L	Soluble silica, dissolved mg/L	Sulfate mg/L	Sulfate Reducing Bacteria CFU/mL
IRZ-15	IRZ-15-200-122021	N	12/20/21	--	39,000 J	38 J	1.3	1.5	ND (0.5)	ND (0.5)	ND (0.1)	5,800,000	4,900	--	920	325
IRZ-15	IRZ-15-055-122021	N	12/20/21	--	11,000	10 J	2.1	2.1	ND (0.5)	ND (0.5)	20	540,000	600 J	--	230	1,400
IRZ-16	IRZ-16-087-122021	N	12/20/21	--	41,000 J	39 J	1.1	1	ND (0.5)	ND (0.5)	67,000	5,900,000	5,200	--	900	ND (0.1)
IRZ-16	IRZ-16-055-122021	N	12/20/21	--	8,900	9.1 J	2.4	1.7	ND (0.5)	ND (0.5)	13,000	630,000	870 J	--	250	ND (0.1)
IRZ-17	IRZ-17-057-122021	N	12/20/21	--	37,000 J	29 J	0.87	1.1	ND (0.5)	ND (0.5)	67,000	4,800,000	4,900	--	1,100	ND (0.1)
IRZ-17	IRZ-17-165-122021	N	12/20/21	--	10,000 J	11 J	1.5	1.3	ND (0.5)	ND (0.5)	500	1,200,000	1,200	--	350	ND (0.1)
IRZ-18	IRZ-18-059-122021	N	12/20/21	--	5,500 J	6.2 J	3.5	2.8	ND (0.5)	ND (0.5)	440,000	610,000	650	--	200	ND (0.1)
IRZ-18	IRZ-18-182-122021	N	12/20/21	--	34,000 J	34 J	1.6	1.6	ND (0.5)	ND (0.5)	67,000	5,700,000	5,600	--	830	ND (0.1)
IRZ-20	IRZ-20-071-122021	N	12/20/21	--	33,000 J	31 J	1.2	0.92	ND (0.5)	ND (0.5)	2,500	4,500,000	4,600	--	720	ND (0.1)
IRZ-20	IRZ-20-155-122021	N	12/20/21	--	8,000	8.0 J	3.2	2.7	ND (0.5)	ND (0.5)	67,000	610,000	400 J	--	180	ND (0.1)
IRZ-21	IRZ-21-065-122021	N	12/20/21	--	6,500 J	7.5 J	3.8	3.5	ND (0.5)	ND (0.5)	67,000	280,000	400	--	180	ND (0.1)
IRZ-21	IRZ-21-157-122021	N	12/20/21	--	33,000 J	32 J	2.3	2.4	ND (0.5)	ND (0.5)	13,000	5,300,000	4,300	--	840	ND (0.1)
IRZ-23	IRZ-23-143-122121	N	12/21/21	ND (1.0)	10,000	9.9 J	4.7	4.1	ND (0.5)	ND (0.5)	2,500	610,000 J	580	21 J	220	0.1
IRZ-25	IRZ-25-067-122021	N	12/20/21	--	7,800 J	7.8 J	9.2	8.6	ND (0.5)	ND (0.5)	13,000	400,000	380	--	270	325
IRZ-25	IRZ-25-166-122021	N	12/20/21	--	34,000	15 J	11	7.2	ND (0.5)	ND (0.5)	500	3,800,000	420 J	--	790	ND (0.1)
IRZ-27	IRZ-27-067-122021	N	12/20/21	--	12,000 J	12 J	7.9	7.3	ND (0.5)	ND (0.5)	500	460,000	460	--	310	75
IRZ-27	IRZ-27-137-122021	N	12/20/21	--	30,000	14 J	12	6.8	ND (0.5)	ND (0.5)	ND (0.1)	1,100,000	780 J	--	560	ND (0.1)

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Well ID	Sample ID	Sample Type	Sample Date	Sulfide mg/L	Thallium µg/L	Thallium, dissolved µg/L	Total dissolved solids mg/L	Total Kjeldahl Nitrogen mg/L	Total organic carbon mg/L	Total phosphorus as P mg/L	Vanadium µg/L	Vanadium, dissolved µg/L	Zinc µg/L	Zinc, dissolved µg/L	Dissolved oxygen mg/L	Oxidation reduction potential mV
IRZ-15	IRZ-15-200-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	13,000	--	ND (50)	--	4.3	3.7	ND (10 J)	ND (10)	2.88	98
IRZ-15	IRZ-15-055-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	2,400	--	ND (1.0)	--	3.9	3.2	ND (10 J)	ND (10)	3.49	64
IRZ-16	IRZ-16-087-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	13,000	--	ND (1.0)	--	21	4.1	ND (10 J)	ND (10)	2.82	93
IRZ-16	IRZ-16-055-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	2,600	--	ND (1.0)	--	9.8	5	ND (10 J)	ND (10)	3.98	66
IRZ-17	IRZ-17-057-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	12,000	--	ND (1.0)	--	19	3.4	ND (10 J)	ND (10)	2.8	-9.1
IRZ-17	IRZ-17-165-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	3,600	--	ND (1.0)	--	6.1	5.7	ND (10 J)	ND (10)	2.57	2.6
IRZ-18	IRZ-18-059-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	1,800	--	ND (1.0)	--	22	4.7	40 J	ND (10)	5.05	69
IRZ-18	IRZ-18-182-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	17,000	--	ND (1.0)	--	12	2.4	37 J	ND (10)	3	80
IRZ-20	IRZ-20-071-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	11,000	--	ND (1.0)	--	25	3.7	ND (10 J)	ND (10)	2.46	-20
IRZ-20	IRZ-20-155-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	1,600	--	ND (1.0)	--	21	6.1	ND (10 J)	ND (10)	5.57	40
IRZ-21	IRZ-21-065-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	1,200	--	ND (1.0)	--	77	8.5	21 J	ND (10)	7.05	75
IRZ-21	IRZ-21-157-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	13,000	--	ND (1.0)	--	62	6	ND (10 J)	ND (10)	2.64	100
IRZ-23	IRZ-23-143-122121	N	12/21/21	ND (0.1)	ND (0.5)	ND (0.5)	2,200	0.23	ND (10)	ND (0.02)	17	9.6	ND (10 J)	ND (10)	6.11	86
IRZ-25	IRZ-25-067-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	1,500	--	ND (1.0)	--	47	5.7	ND (10 J)	ND (10)	7.03	74
IRZ-25	IRZ-25-166-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	13,000	--	ND (1.0)	--	3	5	ND (10 J)	ND (10)	2.31	100
IRZ-27	IRZ-27-067-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	1,700	--	ND (1.0)	--	28	6.1	150 J	ND (10)	6.31	33
IRZ-27	IRZ-27-137-122021	N	12/20/21	--	ND (0.5)	ND (0.5)	6,800	--	ND (1.0)	--	11	6	ND (10 J)	ND (10)	2.79	74

Table 2.4
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Well ID	Sample ID	Sample Type	Sample Date	pH pH units	Specific conductance µS/cm	Temperature DEG C	Turbidity NTU
IRZ-15	IRZ-15-200-122021	N	12/20/21	8	20,000	24.9	14.99
IRZ-15	IRZ-15-055-122021	N	12/20/21	7.6	4,230	25.7	9.66
IRZ-16	IRZ-16-087-122021	N	12/20/21	7.9	20,100	28.2	24.39
IRZ-16	IRZ-16-055-122021	N	12/20/21	7.7	5,150	27	6.51
IRZ-17	IRZ-17-057-122021	N	12/20/21	7.7	18,900	26.3	23.15
IRZ-17	IRZ-17-165-122021	N	12/20/21	7.7	6,640	26.4	12.44
IRZ-18	IRZ-18-059-122021	N	12/20/21	7.9	3,100	27.9	12.34
IRZ-18	IRZ-18-182-122021	N	12/20/21	7.8	20,900	27.7	19.29
IRZ-20	IRZ-20-071-122021	N	12/20/21	7.4	17,700	26.8	32.87
IRZ-20	IRZ-20-155-122021	N	12/20/21	7.8	2,860	27.2	14.51
IRZ-21	IRZ-21-065-122021	N	12/20/21	8	2,010	27.2	38.09
IRZ-21	IRZ-21-157-122021	N	12/20/21	7.7	19,800	27.1	21.07
IRZ-23	IRZ-23-143-122121	N	12/21/21	7.7	4,610	23.6	7.45
IRZ-25	IRZ-25-067-122021	N	12/20/21	7.8	2,220	27.9	82.33
IRZ-25	IRZ-25-166-122021	N	12/20/21	7.6	15,800	27.8	139.61
IRZ-27	IRZ-27-067-122021	N	12/20/21	7.8	2,440	27.2	112.86
IRZ-27	IRZ-27-137-122021	N	12/20/21	7.4	4,900	27.6	43.76

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Note:
1. The lower and upper interval samples collected from IRZ-15 (IRZ-15-055 and IRZ-15-200) and IRZ-16 (IRZ-16-055 and IRZ-16-087) were mistakenly switched. This has been corrected in the table.

Abbreviations:
-- = not applicable or not available
µg/L = micrograms per liter
CaCO3 = calcium carbonate
CFU/mL = colony forming unit per milliliter
DEG C = degrees Celsius
ID = identification
J = estimated concentration
mg/L = milligrams per liter
mV = millivolts
ND = not detected at reporting limit, as shown
NTU = nephelometric turbidity units
µS/cm = microsiemens per centimeter

Table 3.1
Groundwater Remedy Phase 1 Monitoring Program Summary
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Location ID	Remedy Compliance Monitoring: Outside Plume	Remedy Compliance Monitoring: Inside Plume	Remedy Compliance Monitoring: Surface Water	Process Control Monitoring: Dose Response Wells	Process Control Monitoring: Downgradient Monitoring Wells	Process Control Monitoring: Northern NTH Extraction Wells	Process Control Monitoring: Northern NTH IRZ Extraction Monitoring Wells	Process Control Monitoring: Hydraulic Gradient Monitoring	Process Control Monitoring: Carbon Amendment System Monitoring	Former IM-3 Injection Area Monitoring	COPC Monitoring	Domestic Well Sampling	Hexavalent Chromium	Total Dissolved Chromium	Total Organic Carbon	Dissolved Arsenic	Dissolved Manganese	Dissolved Iron	Dissolved Barium	Nitrate	Nitrite and Ammonium [1]	Ammonia as N	Nitrate/ Nitrite as N	Dissolved Molybdenum	Dissolved Selenium	Other Dissolved Metals [2]	Sulfate	Total Iron	Total Dissolved Solids	Alkalinity	Cations/ Anions
C-BNS			X								X		Q	SA		Q	Q			A				A	A					
C-CON			X								X		Q	SA		Q	Q			A				A	A					
C-I-3			X					M(Q), Q			X		Q	SA		Q	Q			A				A	A					
C-MAR			X								X		Q	SA		Q	Q			A				A	A					
C-NR1			X								X		Q	SA		Q	Q			A				A	A					
C-NR3			X								X		Q	SA		Q	Q			A				A	A					
C-NR4			X								X		Q	SA		Q	Q			A				A	A					
C-R22A			X								X		Q	SA		Q	Q			A				A	A					
C-R27			X								X		Q	SA		Q	Q			A				A	A					
C-TAZ			X								X		Q	SA		Q	Q			A				A	A					
CW-01D										X			A	A		A	A		A				A	A	A	A		A	A	A [3]
CW-01M										X			A	A		A	A		A				A	A	A	A		A	A	A [3]
CW-02D										X			A	A		A	A		A				A	A	A	A		A	A	A [3]
CW-02M										X			A	A		A	A		A				A	A	A	A		A	A	A [3]
CW-03D										X			A	A		A	A		A				A	A	A	A		A	A	A [3]
CW-03M										X			A	A		A	A		A				A	A	A	A		A	A	A [3]
CW-04D										X			A	A		A	A		A				A	A	A	A		A	A	A [3]
CW-04M										X			A	A		A	A		A				A	A	A	A		A	A	A [3]
IRZ-13S						X							M(Q), Q		M(Q), Q		M(Q), Q	M(Q), Q									M(Q), Q			
IRZ-13D						X							M(Q), Q		M(Q), Q		M(Q), Q	M(Q), Q									M(Q), Q			
IRZ-23						X							M(Q), Q		M(Q), Q		M(Q), Q	M(Q), Q									M(Q), Q			
IRZ-09						X							M(Q), Q		M(Q), Q		M(Q), Q	M(Q), Q									M(Q), Q			
MW-09		X									X		SA	SA		A	A			SA				SA	SA					
MW-10		X									X		SA	SA		A	A			SA				SA	SA					
MW-10D		X									X		SA	SA		A	A			SA				SA	SA					
MW-11		X											SA	SA		A	A													
MW-11D		X											SA	SA		A	A													
MW-12		X									X		SA	SA		A	A			SA				SA	SA					
MW-13	X										X		SA	SA		A	A			A				A	A					
MW-14	X										X		SA	SA		A	A			A				A	A					
MW-15	X												SA	SA		A	A													
MW-19		X											SA	SA		A	A													
MW-20-070		X		X				M(Q), Q			X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-20-100		X		X				M(Q), Q			X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-20-130		X		X				M(Q), Q			X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-21	X			X							X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-22	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-23-060		X									X		SA	SA		A	A			A				A	A					
MW-23-080	X										X		SA	SA		A	A			A				A	A					
MW-24A		X									X		SA	SA		A	A			SA				SA	SA					
MW-24B		X									X		SA	SA		A	A			SA				SA	SA					
MW-24BR	X												SA	SA		A	A													
MW-25		X									X		SA	SA		A	A			A				A	A					
MW-26		X		X				M(Q), Q			X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-27-020	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-27-060	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-27-085	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-28-025	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-28-090	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						

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Location ID	Remedy Compliance Monitoring: Outside Plume	Remedy Compliance Monitoring: Inside Plume	Remedy Compliance Monitoring: Surface Water	Process Control Monitoring: Dose Response Wells	Process Control Monitoring: Downgradient Monitoring Wells	Process Control Monitoring: Northern NTH Extraction Wells	Process Control Monitoring: Northern NTH IRZ Extraction Monitoring Wells	Process Control Monitoring: Hydraulic Gradient Monitoring	Process Control Monitoring: Carbon Amendment System Monitoring	Former IM-3 Injection Area Monitoring	COPC Monitoring	Domestic Well Sampling	Hexavalent Chromium	Total Dissolved Chromium	Total Organic Carbon	Dissolved Arsenic	Dissolved Manganese	Dissolved Iron	Dissolved Barium	Nitrate	Nitrite and Ammonium [1]	Ammonia as N	Nitrate/ Nitrite as N	Dissolved Molybdenum	Dissolved Selenium	Other Dissolved Metals [2]	Sulfate	Total Iron	Total Dissolved Solids	Alkalinity	Cations/ Anions
MW-29	X						X						Q	SA																	
MW-30-030	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-30-050	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-31-060		X		X				M(Q), Q			X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-31-135	X			X				M(Q), Q			X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-32-020	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-32-035	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-33-040	X						X	M(Q), Q			X		Q	SA						A				A	A						
MW-33-090	X						X	M(Q), Q			X		Q	SA						A				A	A						
MW-33-150	X						X	M(Q), Q			X		Q	SA						A				A	A						
MW-33-210	X						X						Q	SA																	
MW-34-055	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-34-080	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-34-100	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-35-060	X						X	M(Q), Q			X		Q	SA						A				A	A						
MW-35-135	X						X	M(Q), Q			X		Q	SA						A				A	A						
MW-36-020	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-36-040	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-36-050	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-36-070	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-36-090	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-36-100	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-37D	X										X		SA	SA		A	A			A				A	A						
MW-37S	X										X		SA	SA		A	A			A				A	A						
MW-38D		X									X		Q	Q		A	A			Q				Q	Q						
MW-38S		X									X		Q	Q		A	A			Q				Q	Q						
MW-39-040	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-39-050	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-39-060	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-39-070	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-39-080	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-39-100		X			X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-40D		X									X		SA	SA		A	A			A				A	A						
MW-40S	X										X		SA	SA		A	A			A				A	A						
MW-41D	X										X		SA	SA		A	A			A				A	A						
MW-41M	X										X		SA	SA		A	A			A				A	A						
MW-41S	X										X		SA	SA		A	A			A				A	A						
MW-42-030	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-42-055	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-42-065	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-43-025	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-43-075	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-43-090	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-44-070	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-44-115	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-44-125	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-45-095a	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-46-175	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-46-205	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						

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MW-47-055	X						X						Q	SA																	
MW-47-115	X						X	M(Q), Q					Q	SA																	
MW-48	X										X		SA	SA		A	A			SA				SA	SA						
MW-49-135	X						X	M(Q), Q					Q	SA																	
MW-49-275	X						X						Q	SA																	
MW-49-365	X						X						Q	SA																	
MW-50-095	X							M(Q), Q					SA	SA		A	A														
MW-50-200		X									X		SA	SA		A	A			A				A	A						
MW-51		X		X				M(Q), Q			X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-52D	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-52M	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-52S	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-53D	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-53M	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-53S	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-54-085	X							M(Q), Q			X		SA	SA		A	A			A				A	A						
MW-54-140	X							M(Q), Q			X		SA	SA		A	A			A				A	A						
MW-54-195	X							M(Q), Q			X		SA	SA		A	A			A				A	A						
MW-55-045	X												SA	SA		A	A														
MW-55-120	X												SA	SA		A	A														
MW-56D	X										X		SA	SA		A	A			A				A	A						
MW-56M	X										X		SA	SA		A	A			A				A	A						
MW-56S	X										X		SA	SA		A	A			A				A	A						
MW-57-050		X											SA	SA		A	A														
MW-57-070		X									X		SA	SA		A	A			A				A	A						
MW-57-185	X										X		SA	SA		A	A			A				A	A						
MW-58-065	X										X		SA	SA		A	A			A				A	A						
MW-58-115	X										X		SA	SA		A	A			A				A	A						
MW-58-205	X										X		SA	SA		A	A			A				A	A						
MW-58BR	X										X		SA	SA		A	A			A				A	A						
MW-59-100		X									X		SA	SA		A	A			A				A	A						
MW-60-125		X									X		SA	SA		A	A			A				A	A						
MW-60BR-245	X												SA	SA		A	A														
MW-61-110		X									X		SA	SA		A	A			A				A	A						
MW-62-065		X									X		SA	SA		A	A			A				A	A						
MW-62-110		X									X		SA	SA		A	A			A				A	A						
MW-62-190	X										X		SA	SA		A	A			A				A	A						
MW-63-065	X										X		SA	SA		A	A			A				A	A						
MW-64-150	X												SA	SA		A	A														
MW-64-205	X												SA	SA		A	A														
MW-64-260	X												SA	SA		A	A														
MW-64BR	X										X		SA	SA		A	A			A				A	A						
MW-65-160		X									X		Q	Q		A	A			Q				Q	Q						
MW-65-225		X									X		Q	Q		A	A			Q				Q	Q						
MW-66-165		X									X		SA	SA		A	A			SA				SA	SA						
MW-66-230		X									X		SA	SA		A	A			SA				SA	SA						
MW-66BR-270	X												SA	SA		A	A														
MW-67-185		X									X		SA	SA		A	A			SA				SA	SA						
MW-67-225		X									X		SA	SA		A	A			SA				SA	SA						

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MW-67-260		X									X		SA	SA		A	A			SA				SA	SA						
MW-68-180		X									X		Q	Q		A	A			Q				Q	Q						
MW-68-240		X									X		SA	SA		A	A			SA				SA	SA						
MW-68BR-280	X												SA	SA		A	A														
MW-69-195		X									X		Q	Q		A	A			Q				Q	Q						
MW-70-105		X									X		SA	SA		A	A			SA				SA	SA						
MW-70BR-225		X									X		SA	SA		A	A			SA				SA	SA						
MW-70BR-287		X											SA	SA		A	A														
MW-71-035	X			X							X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-72-080		X									X		SA	SA		A	A			A				A	A						
MW-72BR-200	X												SA	SA		A	A														
MW-73-080		X									X		SA	SA		A	A			A				A	A						
MW-74-240	X										X		SA	SA		A	A			A				A	A						
MW-75-033		X					X	M(Q), Q					Q	SA																	
MW-75-117	X						X	M(Q), Q					Q	SA																	
MW-75-202	X						X	M(Q), Q					Q	SA																	
MW-75-267	X						X	M(Q), Q					Q	SA																	
MW-75-337	X						X	M(Q), Q					Q	SA																	
MW-76-039		X		X				M(Q), Q			X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-76-156		X		X				M(Q), Q			X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-76-181		X		X				M(Q), Q			X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-76-218		X		X							X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-77-046	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-77-102	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-77-158	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-77-187	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-78-070		X		X							X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-78-142		X		X							X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-79-058		X		X							X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-79-102		X		X							X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-80-057		X		X				M(Q), Q			X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-80-082		X		X				M(Q), Q			X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
MW-81-043	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-81-098	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-82-046	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-82-112	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-82-168	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-82-198	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-83-090		X									X		SA	SA		A	A			A				A	A						
MW-83-180	X										X		SA	SA		A	A			A				A	A						
MW-83-225		X									X		SA	SA		A	A			A				A	A						
MW-83-245		X									X		SA	SA		A	A			A				A	A						
MW-84-057		X									X		SA	SA		A	A			A				A	A						
MW-84-095	X										X		SA	SA		A	A			A				A	A						
MW-84-132	X										X		SA	SA		A	A			A				A	A						
MW-84-193		X									X		SA	SA		A	A			A				A	A						
MW-85-129		X									X		SA	SA		A	A			A				A	A						
MW-85-217		X									X		SA	SA		A	A			A				A	A						
MW-85-237		X									X		SA	SA		A	A			A				A	A						

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MW-86-030	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-86-066	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-86-120	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-86-140	X				X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-87-109	X										X		SA	SA		A	A			A				A	A						
MW-87-139	X										X		SA	SA		A	A			A				A	A						
MW-87-192	X										X		SA	SA		A	A			A				A	A						
MW-87-275	X										X		SA	SA		A	A			A				A	A						
MW-88-107		X											SA	SA		A	A														
MW-89-183	X										X		SA	SA		A	A			A				A	A						
MW-89-273	X										X		SA	SA		A	A			A				A	A						
MW-90-031	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
MW-91-045	X										X		SA	SA		A	A			A				A	A						
MW-91-120	X										X		SA	SA		A	A			A				A	A						
MW-91-170	X										X		SA	SA		A	A			A				A	A						
MW-91-320	X										X		SA	SA		A	A			A				A	A						
MW-92-037	X										X		SA	SA		A	A			A				A	A						
MW-92-072	X										X		SA	SA		A	A			A				A	A						
MW-92-102	X										X		SA	SA		A	A			A				A	A						
MW-92-122	X										X		SA	SA		A	A			A				A	A						
MW-93-050	X												SA	SA		A	A														
MW-93-213	X												SA	SA		A	A														
MW-95-113	X										X		SA	SA		A	A			A				A	A						
MW-95-157	X										X		SA	SA		A	A			A				A	A						
MW-96-045	X						X	M(Q), Q					Q	SA																		
MW-96-217	X						X	M(Q), Q					Q	SA																		
MW-97-042							X	M(Q), Q					Q	SA																		
MW-97-202							X	M(Q), Q					Q	SA																		
MW-98-055		X											SA	SA		A	A														
MW-98-077		X											SA	SA		A	A														
OW-01D										X			A	A		A	A		A				A	A	A	A	A		A	A	A [3]
OW-01M										X			A	A		A	A		A				A	A	A	A	A		A	A	A [3]
OW-01S								M(Q), Q		X			A	A		A	A		A				A	A	A	A	A		A	A	A [3]
OW-02D										X			A	A		A	A		A				A	A	A	A	A		A	A	A [3]
OW-02M										X			A	A		A	A		A				A	A	A	A	A		A	A	A [3]
OW-02S								M(Q), Q		X			A	A		A	A		A				A	A	A	A	A		A	A	A [3]
OW-05D								M(Q), Q		X			A	A		A	A		A				A	A	A	A	A		A	A	A [3]
OW-05M								M(Q), Q		X			A	A		A	A		A				A	A	A	A	A		A	A	A [3]
OW-05S								M(Q), Q		X			A	A		A	A		A				A	A	A	A	A		A	A	A [3]
PGE-07BR	X												SA	SA		A	A														
PGE-08	X												SA	SA		A	A														
PT5D		X			X			M(Q), Q			X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
PT5M	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
PT5S	X				X						X		Q	SA	Q	Q	Q	Q	Q	Q				A	A						
PT8D		X											SA	SA		A	A														
PT9D		X									X		SA	SA		A	A			A				A	A						
PT9M		X									X		SA	SA		A	A			A				A	A						
PT9S		X									X		SA	SA		A	A			A				A	A						
R-19			X								X		Q	SA		Q	Q			A				A	A						

Table 3.1
Groundwater Remedy Phase 1 Monitoring Program Summary
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Location ID	Remedy Compliance Monitoring: Outside Plume	Remedy Compliance Monitoring: Inside Plume	Remedy Compliance Monitoring: Surface Water	Process Control Monitoring: Dose Response Wells	Process Control Monitoring: Downgradient Monitoring Wells	Process Control Monitoring: Northern NTH Extraction Wells	Process Control Monitoring: Northern NTH IRZ Extraction Monitoring Wells	Process Control Monitoring: Hydraulic Gradient Monitoring	Process Control Monitoring: Carbon Amendment System Monitoring	Former IM-3 Injection Area Monitoring	COPC Monitoring	Domestic Well Sampling	Hexavalent Chromium	Total Dissolved Chromium	Total Organic Carbon	Dissolved Arsenic	Dissolved Manganese	Dissolved Iron	Dissolved Barium	Nitrate	Nitrite and Ammonium [1]	Ammonia as N	Nitrate/ Nitrite as N	Dissolved Molybdenum	Dissolved Selenium	Other Dissolved Metals [2]	Sulfate	Total Iron	Total Dissolved Solids	Alkalinity	Cations/ Anions
R-28			X								X		Q	SA		Q	Q			A				A	A						
R-63			X								X		Q	SA		Q	Q			A				A	A						
RRB			X					M(Q), Q			X		Q	SA		Q	Q			A				A	A						
SW1			X								X		Q	SA		Q	Q			A				A	A						
SW2			X								X		Q	SA		Q	Q			A				A	A						
TW-01		X									X		SA	SA		A	A			SA				SA	SA						
TW-02D		X		X							X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
TW-02S		X		X							X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
TW-03D		X		X							X		M(yr), Q	Q (yr), SA	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	M(yr), Q	Q(yr)			Q	Q		M(yr), Q		As needed	As needed	As needed
TW-04	X						X						Q	SA																	
TW-05	X												SA	SA		A	A														
PM-03												X	B	B		B	B	B		B		B		B	B		B		B	B	B [4]
PM-04												X	B	B		B	B	B		B		B		B	B		B		B	B	B [4]
Marina-1												X	B	B		B	B	B		B		B		B	B		B		B	B	B [4]
MTS-1												X	B	B		B	B	B		B		B		B	B		B		B	B	B [4]
MTS-2												X	B	B		B	B	B		B		B		B	B		B		B	B	B [4]
Topock-2												X	B	B		B	B	B		B		B		B	B		B		B	B	B [4]
Topock-3												X	B	B		B	B	B		B		B		B	B		B		B	B	B [4]
CAB_MIXER_606									X						M(Q), SA [5]																
CAB_MIXER_607									X						M(Q), SA [5]																

Notes:
1. The monitoring program will be re-evaluated after two years of operation.
[1] Ammonium and nitrite will be monitored for the first year. If not detected within the first year of monitoring, sampling for these analytes will be discontinued. If increases in ammonium or nitrite concentrations are detected in dose response wells, recommendations for continued sampling and potential expansion of the monitoring network for these analytes will be provided.
[2] Other dissolved metals: Boron, calcium, magnesium, potassium, sodium, and vanadium
[3] Chloride and fluoride
[4] Dissolved calcium, dissolved magnesium, dissolved potassium, dissolved sodium, chloride, fluoride
[5] Samples are collected biweekly (1 time every 2 weeks) until the system operations are verified. The sampling frequency is reduced to semi-annual thereafter.

(yr): Frequency for the first year/month/quarter, frequency reduction to be considered thereafter
A = Annually
B = biennially (every 2 years)
COPC = constituent of potential concern
ID = identification
IM-3 = Interim Measure 3
IRZ = In-site Reactive Zone
M = Monthly
NTH = National Trails Highway
Q = Quarterly
SA = Semi-annually
SEIR = Subsequent Environmental Impact Report
T = Potentially monitored continuously via transducer

Table 3.2
Remedy Well Construction Details
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Well ID	Well Type	Easting (NAD83)	Northing (NAD83)	Drilling Method	Completion Date	Boring Depth (feet bgs)	Screen Type	Upper Screen Interval 1 (feet bgs) Start	Upper Screen Interval 1 (feet bgs) End	Upper Middle Screen Interval 2 (feet bgs) Start	Upper Middle Screen Interval 2 (feet bgs) End	Lower Screen Interval 4 (feet bgs) Start	Lower Screen Interval 4 (feet bgs) End	Sump Interval (feet bgs) Start	Sump Interval (feet bgs) End	Boring Diameter (inches; range if variable)	Well Casing Diameter (inches)	Well Casing Material	Screen Material	Upper Bentonite Seal Depth (range; feet bgs)	Upper Well Screen Slot Size (inches)	Upper Sand Pack Material	Upper Middle Bentonite Seal Depth (range; feet bgs)	Upper Middle Well Screen Slot Size (inches)	Upper Middle Sand Pack Material	Lower Bentonite Seal Depth (range; feet bgs)	Lower Well Screen Slot Size (inches)	Lower Sand Pack Material
IRZ-09	Extraction	7615565.51	2103560.78	Dual Rotary	9/2/2020	107.6	Single	55.0	99.8	--	--	--	--	99.8	105.4	15.625 - 18	10	SDR17 PVC	316L SS Wire	41.7 - 44	0.05	#6	--	--	--	--	--	--
IRZ-13S	Extraction	7615711.28	2103302.8	Dual Rotary	7/24/2020	103.6	Single	53.0	95.8	--	--	--	--	95.8	101.6	18	10	SDR17 PVC	316L SS Wire	40.4 - 42.1	0.05	#6	--	--	--	--	--	--
IRZ-13D	Extraction	7615707.68	2103310.2	Dual Rotary	7/11/2020	227.7	Single	--	--	--	--	160.4	210.2	210.2	215.8	15.625 - 18	10	SDR17 PVC	316L SS Wire	146.7 - 148.8	0.01	#0/30	--	--	--	--	--	--
IRZ-23	Extraction	7615826.01	2102535.62	Dual Rotary	6/30/2019	150.4	Single	--	--	--	--	92.1	142.0	142.0	147.4	17.5 - 24	10	SDR17 PVC	316L SS Wire	--	--	--	--	--	--	66.5 - 68.6	0.01	#0/30
IRZ-15	Injection	7615772.94	2103152.1	Dual Rotary	1/16/2020	232.6	Dual	30.0	55.3	--	--	150.3	200.2	200.2	205.9	15.5 - 18	10	SDR17 PVC	316L SS Wire	--	0.025	#2/16	--	--	--	59.8 - 140.9	0.030	#2/12
IRZ-16	Injection	7615823.34	2103042.34	Dual Rotary	12/11/2019	194.5	Dual	27.0	54.9	--	--	155.0	186.8	186.8	192.5	16 - 18	10	SDR17 PVC	316L SS Wire	--	0.02	#1	--	--	--	59.0 - 146.0	0.015	#1/20
IRZ-17	Injection	7615870.94	2103001.18	Dual Rotary	11/19/2019	192.0	Dual	36.2	57.1	--	--	137.2	167.1	167.1	172.8	16 - 18	10	SDR17 PVC	316L SS Wire	25.5 - 26.9	0.50	#8	--	--	--	61.3 - 128.2	0.015	#1/20
IRZ-18	Injection	7615808.45	2102885.15	Dual Rotary	8/11/2020	193.9	Dual	41.7	59.6	--	--	155.0	181.8	181.8	187.4	16 - 18	10	SDR17 PVC	316L SS Wire	--	0.01	#0/30	--	--	--	63.9 - 133.8	0.018	#1/20
IRZ-20	Injection	7615813.89	2102761.96	Dual Rotary	4/23/2019	188.1	Dual	49.0	71.0	--	--	136.0	155.0	155.0	160.0	18 - 24	10	SDR17 PVC	316L SS Wire	34.5 - 37.2	0.02	#1	--	--	--	75.4 - 125.6	0.02	#1
IRZ-21	Injection	7615817.31	2102689.08	Dual Rotary	6/15/2019	166.5	Dual	47.4	65.4	--	--	140.4	157.3	157.3	163.0	18 - 24	10	SDR17 PVC	316L SS Wire	35.2 - 36.7	0.025	#2/16	--	--	--	70.2 - 132.1	0.015	#1/20
IRZ-25	Injection	7615824.68	2102414.88	Dual Rotary	5/29/2019	174.0	Triple[a]	50.1	67.1	77.1	100.0	135.0	166.0	166.0	171.6	15.5 - 18	10	SDR17 PVC	316L SS Wire	31.1 - 35.1	0.01	#0/30	69 - 74	0.03	#3	103.8 - 126	0.01	#0/30
IRZ-27	Injection	7615803.46	2102237.25	Dual Rotary	2/7/2020	144.3	Triple[a]	52.0	67.0	77.0	99.9	114.9	136.8	136.8	142.3	16 - 18	10	SDR17 PVC	316L SS Wire	--	0.01	#0/30	69.1 - 72.9	0.02	#2/16	104 - 108.3	0.008	#0/60
IRZ-29	Injection	7615788.78	2102085.65	Dual Rotary	2/22/2020	128.5	Dual	48.2	77	--	--	92.1	120.9	120.9	126.3	15.5 - 18	10	SDR17 PVC	316L SS Wire	--	0.01	#0/30	--	--	--	80.4 - 85.9	0.01	#0/30
IRZ-31	Injection	7615789.12	2101940.52	Dual Rotary	3/7/2020	128.8	Dual	48.2	77.1	--	--	92.1	121.0	121.0	126.8	16 - 18	10	SDR17 PVC	316L SS Wire	--	0.01	#0/30	--	--	--	79.9 - 85.5	0.008	#0/60
IRZ-33	Injection	7615828.03	2101792.54	Dual Rotary	3/22/2020	119.5	Dual[b]	51.4	77.3	--	--	87.2	111.0	111.0	116.6	16 - 18	10	SDR17 PVC	316L SS Wire	--	0.01	#0/30	--	--	--	--	0.01	#0/30
IRZ-35	Injection	7615918.00	2101643.44	Dual Rotary	3/29/2020	97.0	Single	53.1	88.0	--	--	--	--	88.0	93.8	18	10	SDR17 PVC	316L SS Wire	--	0.01	#0/30	--	--	--	--	--	--
IRZ-37	Injection	7616004.52	2101556.06	Dual Rotary	2/4/2020	82.0	Single	49.0	74.0	--	--	--	--	74.0	79.8	12	8	SDR17 PVC	316L SS Wire	--	0.01	#0/60	--	--	--	--	--	--
IRZ-39	Injection	7616112.16	2101376.07	Dual Rotary	10/23/2019	47.0	Single	28.0	39.0	--	--	--	--	39.0	44.7	8 - 12	8	SDR17 PVC	316L SS Wire	--	0.008	#0/60	--	--	--	--	--	--

Notes:

a. At triple-screened wells IRZ-25 and IRZ-27, well intervals can only be packed off to operate as two discrete intervals (e.g., by combining the upper and middle screens, by combining the middle and lower screens).

b. At IRZ-33, the dual screens were separated by only filter pack and no bentonite.

Abbreviations:

-- = not applicable

bgs = below ground surface

NAD83 = North American Datum of 1983

PVC = polyvinyl chloride

Table 3.3
Monitoring Well Construction Details
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Location ID	Location Type	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Other Layer	Top of Casing Elevation (ft)	Depth of Well (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Diameter of Well (inches)
C-BNS	SW	--	--	--	--	--	--	--	--	--	--	--
C-CON	SW	--	--	--	--	--	--	--	--	--	--	--
C-I-3	SW	--	--	--	--	--	--	--	--	--	--	--
C-MAR	SW	--	--	--	--	--	--	--	--	--	--	--
C-NR1	SW	--	--	--	--	--	--	--	--	--	--	--
C-NR3	SW	--	--	--	--	--	--	--	--	--	--	--
C-NR4	SW	--	--	--	--	--	--	--	--	--	--	--
C-R22A	SW	--	--	--	--	--	--	--	--	--	--	--
C-R27	SW	--	--	--	--	--	--	--	--	--	--	--
C-TAZ	SW	--	--	--	--	--	--	--	--	--	--	--
CW-01D	MW	--	--	--	X	X	--	566.46	300.2	250.0	300.0	2
CW-01M	MW	--	X	X	--	--	--	566.07	190.0	140.0	190.0	2
CW-02D	MW	--	--	--	--	X	Layer 6	549.43	355.0	285.0	335.0	2
CW-02M	MW	--	--	X	X	--	--	549.45	208.3	152.0	202.0	2
CW-03D	MW	--	--	--	--	X	Layer 6	534.14	340.0	270.0	320.0	2
CW-03M	MW	--	--	X	X	--	--	534.10	222.0	172.0	222.0	2
CW-04D	MW	--	--	--	--	X	Layer 6	518.55	303.0	233.0	283.0	2
CW-04M	MW	--	--	X	X	--	--	518.55	169.8	119.5	169.5	2
MW-09	MW	X	--	--	--	--	--	536.56	89.4	77.0	87.0	4
MW-10	MW	X	--	--	--	--	--	530.65	96.9	74.0	94.0	4
MW-10D	MW	--	X		--	--	--	531.54	125.5	108.0	123.0	2
MW-11	MW	X	--	--	--	--	--	522.61	86.1	62.5	82.5	4
MW-11D	MW	--	X	X	--	--	--	522.59	132.4	110.0	130.0	2
MW-12	MW	X	--	--	--	--	--	484.01	50.4	27.5	47.5	4
MW-13	MW	X	--	--	--	--	--	488.64	52.0	28.5	48.5	4
MW-14	MW	X	--	--	--	--	--	570.99	133.8	111.0	131.0	4
MW-15	MW	X	--	--	--	--	--	641.52	203.0	180.5	200.5	4
MW-19	MW	X	--	--	--	--	--	499.92	65.8	46.0	66.0	4
MW-20-070	MW	X	--	--	--	--	--	500.15	69.6	50.0	70.0	4
MW-20-100	MW	--	X	--	--	--	--	500.58	101.4	89.5	99.5	4
MW-20-130	MW	--	--	X	--	--	--	500.66	132.3	121.0	131.0	4
MW-21	MW	X	--	--	--	--	--	505.55	58.5	39.0	59.0	4
MW-22	MW	X	--	--	--	--	--	460.72	12.4	5.5	10.5	2
MW-23-060	MW	X	--	--	--	--	--	504.08	60.2	50.0	60.0	2
MW-23-080	MW	X	X		--	--	--	504.13	80.8	75.0	80.0	2
MW-24A	MW	X	--	--	--	--	--	567.16	127.5	104.0	124.0	4
MW-24B	MW	--	--	X	--	--	--	564.76	214.8	193.0	213.0	4
MW-24BR	MW	--	--	--	--	--	Layers 7, 8	563.95	441.0	378.0	437.0	4
MW-25	MW	X	--	--	--	--	--	542.90	106.5	84.5	104.5	4
MW-26	MW	X	--	--	--	--	--	502.22	70.1	51.5	71.5	2
MW-27-020	MW	X	--	--	--	--	--	460.56	14.4	7.0	17.0	2
MW-27-060	MW	--	X		--	--	--	461.38	59.0	47.3	57.3	2
MW-27-085	MW	--	--	X	--	--	--	460.99	80.0	77.5	87.5	2
MW-28-025	MW	X	--	--	--	--	--	466.77	21.1	13.0	23.0	2

Table 3.3
Monitoring Well Construction Details
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Location ID	Location Type	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Other Layer	Top of Casing Elevation (ft)	Depth of Well (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Diameter of Well (inches)
MW-28-090	MW	--	--	X	--	--	--	467.53	98.4	70.0	90.0	2
MW-29	MW	X	--	--	--	--	--	485.21	41.5	29.5	39.5	2
MW-30-030	MW	X	--	--	--	--	--	468.12	26.9	12.0	32.0	2
MW-30-050	MW	X	X		--	--	--	468.81	52.6	40.0	50.0	4
MW-31-060	MW	X	--	--	--	--	--	496.81	64.0	41.5	61.5	4
MW-31-135	MW	--	--	X	--	--	--	498.11	135.5	113.0	133.0	2
MW-32-020	MW	X	--	--	--	--	--	461.51	19.6	10.0	20.0	2
MW-32-035	MW	X	--		--	--	--	461.63	37.2	27.5	35.0	4
MW-33-040	MW	X	--	--	--	--	--	487.38	41.8	29.0	39.0	2
MW-33-090	MW	--	X	X	--	--	--	487.55	88.3	69.0	89.0	4
MW-33-150	MW	--	--	X	X	--	--	487.77	155.4	132.0	152.0	2
MW-33-210	MW	--	--	--	--	X	--	487.25	223.0	190.0	210.0	2
MW-34-055	MW	--	X		--	--	--	460.95	56.6	45.0	55.0	4
MW-34-080	MW	--	--	X	--	--	--	461.20	84.3	73.0	83.0	4
MW-34-100	MW	--	--	X	--	--	--	460.97	117.0	89.5	99.5	2
MW-35-060	MW	X	X		--	--	--	484.33	56.8	41.0	61.0	2
MW-35-135	MW	--	--	X	X	--	--	484.24	158.7	116.0	136.0	2
MW-36-020	MW	X	--	--	--	--	--	469.33	20.3	10.0	20.0	1
MW-36-040	MW	X	--	--	--	--	--	469.59	40.3	30.0	40.0	1
MW-36-050	MW	--	X		--	--	--	469.62	108.0	46.0	51.0	1
MW-36-070	MW	--	X	X	--	--	--	469.27	70.3	60.0	70.0	1
MW-36-090	MW	--	--	X	--	--	--	469.64	90.3	80.0	90.0	1
MW-36-100	MW	--	--	X	--	--	--	469.65	108.0	88.0	98.0	2
MW-37D	MW	--	--	--	X	X	--	486.19	226.7	180.0	200.0	2
MW-37S	MW	--	X	--	--	--	--	485.97	85.0	64.0	84.0	2
MW-38D	MW	--	--	X	X	--	--	525.31	190.9	163.0	183.0	2
MW-38S	MW	X	--	--	--	--	--	525.51	98.1	75.0	95.0	2
MW-39-040	MW	X	--	--	--	--	--	468.02	42.1	30.0	40.0	1
MW-39-050	MW	--	X	--	--	--	--	467.93	54.6	47.0	52.0	1
MW-39-060	MW	--	X	--	--	--	--	468.00	66.3	49.0	59.0	1
MW-39-070	MW	--	X	X	--	--	--	468.02	71.7	60.0	70.0	1
MW-39-080	MW	--	--	X	--	--	--	467.92	82.6	70.0	80.0	1
MW-39-100	MW	--	--	X	--	--	--	468.12	117.7	80.0	100.0	2
MW-40D	MW	--	--	--	X	--	--	566.08	266.0	240.0	260.0	2
MW-40S	MW	X	--	--	--	--	--	566.04	134.0	115.0	135.0	2
MW-41D	MW	--	--	--	--	--	Layer 6	479.42	311.5	271.0	291.0	2
MW-41M	MW	--	--	--	X	X	--	479.84	190.0	170.0	190.0	2
MW-41S	MW	X	X		--	--	--	480.07	60.0	40.0	60.0	2
MW-42-030	MW	X	--	--	--	--	--	463.74	30.1	9.8	29.8	2
MW-42-055	MW	--	X	--	--	--	--	463.85	52.8	42.5	52.5	2
MW-42-065	MW	--	X	X	--	--	--	463.37	80.0	56.2	66.2	2
MW-43-025	MW	X	--	--	--	--	--	462.54	25.0	15.0	25.0	2
MW-43-075	MW	--	--	X	--	--	--	462.71	75.0	65.0	75.0	2
MW-43-090	MW	--	--	X	--	--	--	462.76	97.0	80.0	90.0	2

Table 3.3
Monitoring Well Construction Details
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Location ID	Location Type	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Other Layer	Top of Casing Elevation (ft)	Depth of Well (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Diameter of Well (inches)
MW-44-070	MW	--	X	--	--	--	--	471.90	70.0	61.0	71.0	2
MW-44-115	MW	--	--	X	--	--	--	472.01	113.5	105.0	115.0	2
MW-44-125	MW	--	--	X	X	--	--	472.04	128.8	116.0	125.0	2
MW-45-095a	MW	--	--	X	--	--	--	470.03	97.0	83.0	93.0	2
MW-46-175	MW	--	--	--	X	--	--	482.16	175.5	165.0	175.0	2
MW-46-205	MW	--	--	--	--	X	--	482.23	206.5	196.5	206.5	2
MW-47-055	MW	X	--	--	--	--	--	484.04	55.0	45.0	55.0	2
MW-47-115	MW	--	--	X	--	--	--	484.17	115.0	105.0	115.0	2
MW-48	MW	--	--	X	--	--	--	486.22	138.0	124.0	134.0	2
MW-49-135	MW	--	--	X	X	--	--	484.02	135.0	125.0	135.0	1.5
MW-49-275	MW	--	--	--	--	--	Layer 6	483.95	274.7	255.0	275.0	2
MW-49-365	MW	--	--	--	--	--	Layer 8	484.01	367.4	346.0	366.0	2
MW-50-095	MW	--	X		--	--	--	496.49	95.0	85.0	95.0	2
MW-50-200	MW	--	--	--	X	X	--	496.35	204.5	190.0	200.0	2
MW-51	MW	--	X	X	--	--	--	501.56	113.3	97.0	112.0	4
MW-52D	MW	--	--	X	--	--	--	462.16	89.5	85.0	87.0	0.75
MW-52M	MW	--	--	X	--	--	--	462.16	70.5	66.0	68.0	0.75
MW-52S	MW	--	X	--	--	--	--	462.16	51.5	47.0	49.0	0.75
MW-53D	MW	--	--	--	X	--	--	461.32	125.0	123.5	125.0	0.75
MW-53M	MW	--	--	X	--	--	--	461.32	125.0	98.5	100.0	0.75
MW-53S	MW	X	--	--	--	--	--	461.32	125.0	28.5	30.0	0.75
MW-54-085	MW	--	--	X	--	--	--	466.10	93.2	77.0	87.0	2
MW-54-140	MW	--	--	--	X	--	--	465.98	138.0	128.0	138.0	2
MW-54-195	MW	--	--	--	--	X	--	466.32	195.0	185.0	195.0	2
MW-55-045	MW	X	X	--	--	--	--	465.66	54.1	37.0	47.0	2
MW-55-120	MW	--	--	X	X	--	--	465.46	120.3	108.0	118.0	2
MW-56D	MW	--	--	X	--	--	--	461.36	105.5	103.5	105.5	0.75
MW-56M	MW	--	--	X	--	--	--	461.36	105.5	73.5	75.5	0.75
MW-56S	MW	X	--	--	--	--	--	461.36	105.5	33.5	35.5	0.75
MW-57-050	MW	X	--	--	--	--	--	508.76	50.0	40.0	50.0	2
MW-57-070	MW	X	--	--	--	--	--	509.37	70.0	55.0	70.0	2
MW-57-185	MW	X	X	X	X	--	--	508.97	184.7	70.0	184.0	4

Table 3.3
Monitoring Well Construction Details
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Location ID	Location Type	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Other Layer	Top of Casing Elevation (ft)	Depth of Well (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Diameter of Well (inches)
MW-58-065	MW	X	--	--	--	--	--	523.26	66.0	54.0	64.0	2
MW-58-115	MW	X	X	--	--	--	--	524.44	115.0	95.0	115.0	0
MW-58-205	MW	--	--	X	X	--	--	524.42	206.0	160.0	206.0	0
MW-58BR	MWBR	--	--	--	--	--	Layer 9	--	--	--	--	
MW-59-100	MW	X	--	--	--	--	--	541.61	101.0	86.0	101.0	2
MW-60-125	MW	X	--	--	--	--	--	555.47	122.5	103.0	123.0	2
MW-60BR-245	MWBR	--	X	X	X	--	--	554.95	244.1	136.0	245.0	5
MW-61-110	MW	X	--	--	--	--	--	544.03	112.5	92.0	112.0	2
MW-62-065	MW	X	--	--	--	--	--	503.56	67.4	44.5	64.5	2
MW-62-110	MW	--	X	X	--	--	--	504.05	110.0	85.0	110.0	0
MW-62-190	MW	--	--	--	X	--	--	504.05	190.0	155.0	192.0	0
MW-63-065	MW	X	--	--	--	--	--	504.47	65.6	46.0	66.0	2
MW-64-150	MW	X	--	--	--	--	--	575.90	150.0	120.0	150.0	0
MW-64-205	MW	--	--	X	--	--	--	575.92	205.0	175.0	205.0	0
MW-64-260	MW	--	--	--	X	--	--	575.90	260.0	230.0	260.0	0
MW-64BR	MWBR	X	X	X	X	--	--	575.60	260.0	2.0	258.0	3
MW-65-160	MW	X	--	--	--	--	--	596.59	160.1	150.0	160.0	2
MW-65-225	MW	--	--	X	--	--	--	596.58	225.1	215.0	225.0	2
MW-66-165	MW	X	X		--	--	--	586.16	162.1	142.0	162.0	2
MW-66-230	MW	--	--	X	--	--	--	586.22	228.1	218.0	228.0	2
MW-66BR-270	MWBR	--	--	--	X	--	--	586.15	270.6	248.0	271.0	5
MW-67-185	MW	X	--	--	--	--	--	625.91	186.7	177.0	187.0	2
MW-67-225	MW	--	X		--	--	--	625.83	225.0	210.0	225.0	2
MW-67-260	MW	--	--	X	--	--	--	625.81	260.0	250.0	260.0	2
MW-68-180	MW	X	--	--	--	--	--	621.17	180.1	165.0	180.0	2
MW-68-240	MW	--	X	X	--	--	--	621.17	240.1	220.0	240.0	2
MW-68BR-280	MWBR	--	--	X	X	--	--	620.64	278.2	257.0	279.0	5
MW-69-195	MW	X	--	--	--	--	--	631.36	195.5	176.0	196.0	2
MW-70-105	MW	X	--	--	--	--	--	541.47	107.8	85.0	105.0	2
MW-70BR-225	MWBR	--	X	X	X	--	--	539.84	229.3	120.0	227.0	5
MW-70BR-287	MW	--	--	--	--	X	--	538.53	287.0	240.0	287.0	5.5
MW-71-035	MW	X	--	--	--	--	--	483.69	36.2	26.0	36.0	2
MW-72-080	MW	X	--	--	--	--	--	513.32	80.1	60.0	80.0	2
MW-72BR-200	MWBR	--	X	X	X	--	--	513.79	200.0	107.0	200.0	--
MW-73-080	MW	X	--	--	--	--	--	505.84	79.9	60.2	80.2	2
MW-74-240	MW	X	--	--	--	--	--	672.34	239.7	220.0	240.0	2
MW-75-033	MW	X	--	--	--	--	--	473.31	35.4	18.0	33.0	2
MW-75-117	MW	--	--	X	--	--	--	473.37	119.3	97.0	117.0	2
MW-75-202	MW	--	--	--	--	X	--	472.08	204.0	182.0	202.0	2
MW-75-267	MW	--	--	--	--	--	Layer 6	472.10	269.3	247.0	267.0	2
MW-75-337	MW	--	--	--	--	--	Layers 7, 8	473.79	339.3	317.0	337.0	2
MW-76-039	MW	X	--	--	--	--	--	481.24	39.5	24.0	39.0	2
MW-76-156	MW	--	--	--	X	--	--	481.35	158.3	136.0	156.0	2
MW-76-181	MW	--	--	--	X	--	--	481.43	183.3	171.0	181.0	2

Table 3.3
Monitoring Well Construction Details
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Location ID	Location Type	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Other Layer	Top of Casing Elevation (ft)	Depth of Well (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Diameter of Well (inches)
MW-76-218	MW	--	--	--	--	X	--	481.36	220.3	198.0	218.0	2
MW-77-046	MW	X	--	--	--	--	--	478.81	48.3	26.0	46.0	2
MW-77-102	MW	--	--	X	--	--	--	478.65	104.3	82.0	102.0	2
MW-77-158	MW	--	--	--	X	--	--	478.70	160.4	138.0	158.0	2
MW-77-187	MW	--	--	--	X	X	--	478.67	189.4	167.0	187.0	2
MW-78-070	MW	X	--	--	--	--	--	500.99	72.3	50.0	70.0	2
MW-78-142	MW	--	--	X	--	--	--	500.91	142.3	122.0	142.0	2
MW-79-058	MW	X	--	--	--	--	--	501.21	60.5	48.0	58.0	2
MW-79-102	MW	--	X	--	--	--	--	501.09	104.5	92.0	102.0	2
MW-80-057	MW	X	--	--	--	--	--	503.80	59.9	47.4	57.4	2
MW-80-082	MW	X	--	--	--	--	--	503.74	84.5	67.0	82.0	2
MW-81-043	MW	X	--	--	--	--	--	478.02	45.1	22.8	42.8	2
MW-81-098	MW	--	--	X	--	--	--	477.91	100.3	78.0	98.0	2
MW-82-046	MW	X	--	--	--	--	--	484.46	48.3	26.0	46.0	2
MW-82-112	MW	--	--	X	--	--	--	484.36	114.3	92.0	112.0	2
MW-82-168	MW	--	--	--	X	--	--	483.75	170.3	148.0	168.0	2
MW-82-198	MW	--	--	--	X	X	--	483.66	200.3	178.0	198.0	2
MW-83-090	MW	X	--	--	--	--	--	529.24	92.3	70.0	90.0	2
MW-83-180	MW	--	--	X	X	--	--	529.13	182.0	160.0	180.0	2
MW-83-225	MW	--	--	--	X	--	--	529.80	227.4	205.0	225.0	2
MW-83-245	MW	--	--	--	--	X	--	529.65	257.4	235.0	245.0	2
MW-84-057	MW	X	--	--	--	--	--	500.70	59.4	42.0	57.0	2
MW-84-095	MW	X	X	--	--	--	--	500.64	97.4	75.0	95.0	2
MW-84-132	MW	--	--	X	--	--	--	501.26	134.4	112.0	132.0	2
MW-84-193	MW	--	--	--	X	--	--	501.18	195.5	173.0	193.0	2
MW-85-129	MW	X	--	--	--	--	--	569.93	131.3	113.8	129.0	2
MW-85-217	MW	--	--	X	--	--	--	569.36	219.0	196.7	216.7	2
MW-85-237	MW	--	--	--	X	--	--	569.50	239.0	226.7	236.7	2
MW-86-030	MW	X	--	--	--	--	--	468.02	32.3	10.0	30.0	2
MW-86-066	MW	--	X	--	--	--	--	467.91	68.3	46.0	66.0	2
MW-86-120	MW	--	--	X	X	--	--	468.33	122.3	100.0	120.0	2
MW-86-140	MW	--	--	--	X	--	--	468.18	142.3	130.0	140.0	2
MW-87-109	MW	X	--	--	--	--	--	546.94	111.3	89.0	109.0	2
MW-87-139	MW	X	X	--	--	--	--	546.94	141.4	119.0	139.0	2
MW-87-192	MW	--	--	X	--	--	--	547.26	194.3	172.0	192.0	2
MW-87-275	MW	--	--	--	--	X	--	547.11	277.3	255.0	275.0	2

Table 3.3
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Location ID	Location Type	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Other Layer	Top of Casing Elevation (ft)	Depth of Well (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Diameter of Well (inches)
MW-88-107	MW	X	--	--	--	--	--	546.53	109.3	87.0	107.0	2
MW-89-183	MW	--	X	--	--	--	--	587.52	185.6	163.2	183.2	2
MW-89-273	MW	--	--	--	X	--	--	587.66	275.6	253.2	273.2	2
MW-90-031	MW	X	--	--	--	--	--	459.27	33.8	21.5	31.5	2
MW-91-045	MW	X	X	--	--	--	--	465.48	46.5	24.2	44.2	2
MW-91-120	MW	--	--	X	X	--	--	465.37	122.1	99.8	119.8	2
MW-91-170	MW	--	--	--	X	X	--	465.37	173.2	150.8	170.8	2
MW-91-320	MW	--	--	--	--	--	Layers 7, 8	465.28	323.2	300.8	320.8	2
MW-92-037	MW	X	X		--	--	--	462.00	39.4	17.0	37.0	2
MW-92-072	MW	--	X	X	--	--	--	461.97	74.4	52.0	72.0	2
MW-92-102	MW	--	--	X	--	--	--	462.38	104.3	82.0	102.0	2
MW-92-122	MW	--	--	X	X	--	--	462.30	124.3	112.0	122.0	2
MW-93-050	MW	X	--	--	--	--	--	486.41	52.3	30.0	50.0	2
MW-93-213	MW	--	--	--	--	X	--	486.33	215.3	193.0	213.0	2
MW-94-030	MW	X	--	--	--	--	--	468.39	32.2	10.0	30.0	2
MW-94-100	MW	--	--	X	--	--	--	468.41	102.3	70.0	100.0	2
MW-95-113	MW	X	--	--	--	--	--	553.64	115.3	93.0	113.0	2
MW-95-157	MW	--	X	X	--	--	--	553.60	159.3	137.0	157.0	2
MW-96-045	MW	X	--	--	--	--	--	483.84	47.3	25.0	45.0	2
MW-96-217	MW	--	--	--	--	X	--	483.61	219.3	197.0	217.0	2
MW-97-042	MW	X	--	--	--	--	--	481.81	42.8	22.3	42.3	2
MW-97-202	MW	--	--	--	--	X	--	481.648	201.8	191	201	2
MW-98-055	MW	X	--	--	--	--	--	502.12	57.3	39.9	55.0	2
MW-98-077	MW	X	--	--	--	--	--	502.02	79.3	67.0	77.0	2
MW-99-060	MW	X	--	--	--	--	--	500.61	62.3	40.0	60.0	2
MW-99-140	MW	--	--	X	--	--	--	500.55	142.3	120.0	140.0	2
OW-01D	MW	--	--	--	--	X	--	550.37	277.3	257.0	277.0	2
OW-01M	MW	--	--	X	--	--	--	550.36	185.8	165.0	185.0	2
OW-01S	MW	X	--	--	--	--	--	550.21	113.5	83.5	113.5	2
OW-02D	MW	--	--	--	--	--	Layer 6	549.01	340.0	310.0	330.0	2
OW-02M	MW	--	--	X	X	--	--	548.52	210.3	190.0	210.0	2
OW-02S	MW	X	--	--	--	--	--	548.88	103.6	71.0	101.0	2
OW-05D	MW	--	--	--	--	--	Layer 6	552.41	350.0	300.0	320.0	2
OW-05M	MW	--	--	--	X	--	--	551.81	250.3	210.0	250.0	2
OW-05S	MW	X	--	--	--	--	--	551.83	110.3	70.0	110.0	2
PGE-07BR	MW	--	--	--	--	--	Layer 9	--	300.0	249.0	300.0	7
PGE-08	MW	--	--	--	--	--	Layers 7, 8, 9	596.01	564.0	405.0	554.0	6.75
PT5D	MW	--	--	X	--	--	--	473.65	105.0	95.0	105.0	2
PT5M	MW	--	X	--	--	--	--	473.49	70.0	60.0	70.0	2
PT5S	MW	X	--	--	--	--	--	473.47	45.0	35.0	45.0	2
PT8D	MW	--	--	X	--	--	--	562.03	212.5	190.0	210.0	2
PT9D	MW	--	--	X	X	--	--	559.11	212.5	190.0	210.0	2
PT9M	MW	--	--	X	--	--	--	559.14	187.0	162.0	182.0	2
PT9S	MW	X	X		--	--	--	559.27	153.0	128.0	148.0	2

Table 3.3
Monitoring Well Construction Details
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Location ID	Location Type	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Other Layer	Top of Casing Elevation (ft)	Depth of Well (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Diameter of Well (inches)
R-19	SW	--	--	--	--	--	--	--	--	--	--	--
R-28	SW	--	--	--	--	--	--	--	--	--	--	--
R63	SW	--	--	--	--	--	--	--	--	--	--	--
RRB	SW	--	--	--	--	--	--	--	--	--	--	--
SW1	SW	--	--	--	--	--	--	--	--	--	--	--
SW2	SW	--	--	--	--	--	--	--	--	--	--	--
TW-01	EW	X	X	X	--	--	--	620.55	271.0	169.0	269.0	5
TW-02D	EW	--	--	X	X	--	--	493.29	150.0	113.0	148.0	6
TW-02S	EW	X	X		--	--	--	499.05	97.5	42.5	92.5	6
TW-03D	EW	--	--	X	X	--	--	498.09	156.0	111.0	156.0	8
TW-04	EW	--	--	--	--	X	Layer 6	484.11	255.0	210.0	250.0	4
TW-05	EW	--	--	X	X	--	--	496.30	155.0	110.0	150.0	4
HNWR-1A	MW	--	X	X	X	--	--	467.69	400.0	63.0	133.0	--

Abbreviations
-- = not available or not applicable
bgs = below ground surface
EW = Extraction Well
ft = feet
ID = identification
MW = Monitoring Well
MWBR = Bedrock Monitoring Well
NAD83 = North American Datum of 1983
NGVD88 = North American Vertical Datum of 1988
SW = Surface Water
Layer 1 = greater than 425 feet NGVD88
Layer 2 = 400 – 425 feet NGVD88
Layer 3 = 350 – 400 feet NGVD88
Layer 4 = 300 – 350 feet NGVD88
Layer 5 = 250 – 300 feet NGVD88
Layer 6 = 200 – 250 feet NGVD88
Layer 7 = 150 – 200 ft NGVD88
Layer 8 = 100 – 150 ft NGVD88
Layer 9 = -200 – 100 ft NGVD88
Layer 10 = less than -200 ft NGVD88

Table 3.4
Fourth Quarter 2021 Monitoring Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)
C-BNS	11/17/21	N	<0.2	<1	3	--	--	--	--	--	--	<0.0005	4.4 J
C-CON-D	11/18/21	N	<0.2	<1	2.5 J	--	--	--	--	--	--	<0.0005	4.5
C-CON-S	11/18/21	N	<0.2	<1	3 J	--	--	--	--	--	--	<0.0005	4.4
C-CON-S	11/18/21	FD	<0.2	<1	3.2 J	--	--	--	--	--	--	<0.0005	4.5
C-I-3-D	11/17/21	N	<0.2	<1	2.5	--	--	--	--	--	--	<0.0005	4.5 J
C-I-3-S	11/17/21	N	<0.2	<1	2.8	--	--	--	--	--	--	<0.0005	4.5 J
C-MAR-D	11/18/21	N	<0.2	<1	3.2 J	--	--	--	--	--	--	0.0047	4.5
C-MAR-S	11/18/21	N	<0.2	<1	3.2 J	--	--	--	--	--	--	0.005	4.6
C-NR1-D	11/18/21	N	<0.2	<1	3.3 J	--	--	--	--	--	--	<0.0005	4.5
C-NR1-S	11/18/21	N	<0.2	<1	3.1 J	--	--	--	--	--	--	<0.0005	4.4
C-NR3-D	11/18/21	N	<0.2	<1	3.2 J	--	--	--	--	--	--	<0.0005	4.6
C-NR3-D	11/18/21	FD	<0.2	<1	3.1 J	--	--	--	--	--	--	<0.0005	4.4
C-NR3-S	11/18/21	N	<0.2	<1	3.2 J	--	--	--	--	--	--	<0.0005	4.5
C-NR4-D	11/18/21	N	<0.2	<1	3.2 J	--	--	--	--	--	--	<0.0005	4.7
C-NR4-S	11/18/21	N	<0.2	<1	3.1 J	--	--	--	--	--	--	<0.0005	4.4
C-R22A-D	11/17/21	N	<0.2	<1	2.6	--	--	--	--	--	--	0.00058	4.5 J
C-R22A-S	11/17/21	N	<0.2	<1	2.7	--	--	--	--	--	--	<0.0005	4.3 J
C-R27-D	11/17/21	N	<0.2	<1	3	--	--	--	--	--	--	0.00059	4.4 J
C-R27-S	11/17/21	N	<0.2	<1	2.9	--	--	--	--	--	--	<0.0005	4.4 J
C-TAZ-D	11/17/21	N	<0.2	<1	2.9	--	--	--	--	--	--	<0.0005	4.5 J
C-TAZ-S	11/17/21	N	<0.2	<1	3.3	--	--	--	--	--	--	<0.0005	4.6 J
CW-01D	12/01/21	N	0.51	1.6	<0.1 J	20	1.1	150	--	--	19	<0.0005	24
CW-01M	12/01/21	N	1.2	2.4	<0.1 J	74	0.98	180	--	--	13	0.00092	17
CW-02D	12/06/21	N	0.45	1.4 J	<0.1	17	1 J	100	--	--	5.2 J	0.00089 J	14
CW-02D	12/06/21	FD	0.45	1.5 J	<0.1	17	0.97 J	95	--	--	4.9 J	0.001 J	14
CW-02M	12/06/21	N	1.1	2.3 J	<0.1	66	1.1 J	140	--	--	9.8 J	0.00075 J	14
CW-03D	12/06/21	N	1.2	2.2 J	<0.1	19	0.89 J	73	--	--	4.6 J	0.0055 J	13
CW-03M	12/06/21	N	2.2	3.6 J	<0.1	34	1.2 J	150	--	--	11 J	0.002 J	37
CW-04D	12/01/21	N	0.3	17	<0.1 J	30	0.99	160	--	--	11	0.095	24
CW-04M	12/01/21	N	1.2	2.1	<0.1 J	98	0.91	210	--	--	14	<0.0005	10
IRZ-23	12/21/21	N	150	150	0.92 J	51	0.63 J	170	0.69	0.091 J	26 J	<0.0005	6.7
MTS-1	11/15/21	N	<0.2	<1	23.9	28.1	0.487	11.2	--	<0.1	0.358	<0.01	14.3
MTS-2	11/15/21	N	5.43	7.3	17.3	82.6	0.756	85.6	--	<0.1	3.07	<0.01	17.9
MW-09	12/08/21	N	170	170	0.38	--	--	--	--	--	--	0.0016 J	6.2
MW-09	12/08/21	FD	170	180	0.52	--	--	--	--	--	--	0.002 J	6.7
MW-10	12/08/21	N	69	71	0.93	--	--	--	--	--	--	0.0013 J	15
MW-10	12/08/21	FD	67	72	0.92	--	--	--	--	--	--	0.0011 J	15
MW-10D	12/08/21	N	88	89	<0.1	--	--	--	--	--	--	<0.0005 J	1.8
MW-11	12/09/21	N	170	180	0.48 J	--	--	--	--	--	--	0.00077	--

Table 3.4
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Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)
C-BNS	11/17/21	N	--	1.9	--	--	--	--	--	--	--	--	0.29
C-CON-D	11/18/21	N	--	1.5	--	--	--	--	--	--	--	--	0.28
C-CON-S	11/18/21	N	--	1.5	--	--	--	--	--	--	--	--	0.3
C-CON-S	11/18/21	FD	--	2	--	--	--	--	--	--	--	--	0.28
C-I-3-D	11/17/21	N	--	1.5	--	--	--	--	--	--	--	--	0.3
C-I-3-S	11/17/21	N	--	1.6	--	--	--	--	--	--	--	--	0.3
C-MAR-D	11/18/21	N	--	1.8	--	--	--	--	--	--	--	--	0.28
C-MAR-S	11/18/21	N	--	1.6	--	--	--	--	--	--	--	--	0.27
C-NR1-D	11/18/21	N	--	1.6	--	--	--	--	--	--	--	--	0.29
C-NR1-S	11/18/21	N	--	2	--	--	--	--	--	--	--	--	0.29
C-NR3-D	11/18/21	N	--	1.7	--	--	--	--	--	--	--	--	0.29
C-NR3-D	11/18/21	FD	--	1.7	--	--	--	--	--	--	--	--	0.29
C-NR3-S	11/18/21	N	--	1.8	--	--	--	--	--	--	--	--	0.28
C-NR4-D	11/18/21	N	--	1.8	--	--	--	--	--	--	--	--	0.28
C-NR4-S	11/18/21	N	--	2	--	--	--	--	--	--	--	--	0.28
C-R22A-D	11/17/21	N	--	1.5	--	--	--	--	--	--	--	--	0.35
C-R22A-S	11/17/21	N	--	1.5	--	--	--	--	--	--	--	--	0.3
C-R22A-D	11/17/21	N	--	1.5	--	--	--	--	--	--	--	--	0.35
C-R22A-S	11/17/21	N	--	1.5	--	--	--	--	--	--	--	--	0.3
C-R27-D	11/17/21	N	--	1.8	--	--	--	--	--	--	--	--	0.3
C-R27-S	11/17/21	N	--	1.9	--	--	--	--	--	--	--	--	0.31
C-TAZ-D	11/17/21	N	--	1.8	--	--	--	--	--	--	--	--	0.3
C-TAZ-S	11/17/21	N	--	1.8	--	--	--	--	--	--	--	--	0.31
CW-01D	12/01/21	N	13 J	7.6	1,400	2.4	73	--	1,900	2.7	--	--	8.3
CW-01M	12/01/21	N	12 J	4.1	1,500	2.2	90	--	2,100	2.4	--	--	2.5
CW-02D	12/06/21	N	14	4.1	1,500	3.7	64	--	2,200	2.1	--	--	2.8
CW-02D	12/06/21	FD	10	4.3	1,600	3.7	64	--	2,200	1.9	--	--	2.7
CW-02M	12/06/21	N	15	3.4	1,500	3.5	63	--	2,200	3.2	--	--	2.8
CW-03D	12/06/21	N	11	3.9	1,500	2.3	70	--	2,200	2.4	--	--	2.6
CW-03M	12/06/21	N	13	2.5	1,500	2.6	52	--	2,200	4.2	--	--	2.6
CW-04D	12/01/21	N	13 J	3.5	1,500	5.3	72	--	2,100	2.9	--	--	2.7
CW-04M	12/01/21	N	13 J	3.2	1,400	3.2	57	--	2,100	2.3	--	--	2.7
IRZ-23	12/21/21	N	9.9 J	4.1	580	9.6	87	<0.2	990	2	5.5	<5	--
MTS-1	11/15/21	N	6.38	<1	352	<1	40.7	0.261	1,160	4.74	--	--	--
MTS-2	11/15/21	N	7.68	<1	370	11.2	69.8	<0.1	724	5	--	--	--
MW-09	12/08/21	N	--	6.2	--	--	--	--	--	--	--	--	14
MW-09	12/08/21	FD	--	6.4	--	--	--	--	--	--	--	--	14
MW-10	12/08/21	N	--	6.1	--	--	--	--	--	--	--	--	11
MW-10	12/08/21	FD	--	6.2	--	--	--	--	--	--	--	--	11
MW-10D	12/08/21	N	--	5.3	--	--	--	--	--	--	--	--	9.5
MW-11	12/09/21	N	--	--	--	--	--	--	--	--	--	--	--

Table 3.4
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Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
C-BNS	11/17/21	N	--	--	--
C-CON-D	11/18/21	N	--	--	--
C-CON-S	11/18/21	N	--	--	--
C-CON-S	11/18/21	FD	--	--	--
C-I-3-D	11/17/21	N	--	--	--
C-I-3-S	11/17/21	N	--	--	--
C-MAR-D	11/18/21	N	--	--	--
C-MAR-S	11/18/21	N	--	--	--
C-NR1-D	11/18/21	N	--	--	--
C-NR1-S	11/18/21	N	--	--	--
C-NR3-D	11/18/21	N	--	--	--
C-NR3-D	11/18/21	FD	--	--	--
C-NR3-S	11/18/21	N	--	--	--
C-NR4-D	11/18/21	N	--	--	--
C-NR4-S	11/18/21	N	--	--	--
C-R22A-D	11/17/21	N	--	--	--
C-R22A-S	11/17/21	N	--	--	--
C-R22A-D	11/17/21	N	--	--	--
C-R22A-S	11/17/21	N	--	--	--
C-R27-D	11/17/21	N	--	--	--
C-R27-S	11/17/21	N	--	--	--
C-TAZ-D	11/17/21	N	--	--	--
C-TAZ-S	11/17/21	N	--	--	--
CW-01D	12/01/21	N	510	4,000	--
CW-01M	12/01/21	N	490	4,300	--
CW-02D	12/06/21	N	510	4,000	--
CW-02D	12/06/21	FD	510	4,200	--
CW-02M	12/06/21	N	500	4,100	--
CW-03D	12/06/21	N	500	4,100	--
CW-03M	12/06/21	N	520	4,100	--
CW-04D	12/01/21	N	480	4,300	--
CW-04M	12/01/21	N	490	4,200	--
IRZ-23	12/21/21	N	220	2,200	<10
MTS-1	11/15/21	N	128	2,090	--
MTS-2	11/15/21	N	144	1,350	--
MW-09	12/08/21	N	--	--	--
MW-09	12/08/21	FD	--	--	--
MW-10	12/08/21	N	--	--	--
MW-10	12/08/21	FD	--	--	--
MW-10D	12/08/21	N	--	--	--
MW-11	12/09/21	N	--	--	--

Table 3.4
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Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)
MW-11D	12/09/21	N	150	150	<0.1 J	--	--	--	--	--	--	<0.0005	--
MW-12	12/13/21	N	2,000	2,000	35	--	--	--	--	--	--	0.00064	9.7
MW-13	12/07/21	N	19	20	0.8 J	--	--	--	--	--	--	0.0051 J	12
MW-13	12/07/21	FD	18	20	0.81 J	--	--	--	--	--	--	0.0047 J	11
MW-14	12/07/21	N	12	12	<0.1 J	--	--	--	--	--	--	0.0026 J	13
MW-15	12/02/21	N	13	13	1.2 J	--	--	--	--	--	--	<0.0005	--
MW-19	12/13/21	N	43	48	0.3	--	--	--	--	--	--	0.0028	--
MW-20-070	12/15/21	N	570	590	0.9	47	--	--	--	0.037 J	--	<0.0005	18
MW-20-100	12/15/21	N	650	660	1.3	24	--	--	--	0.033 J	--	<0.0005	3.6
MW-20-130	12/15/21	N	3,300	3,400	0.22	24	--	--	--	<0.02 J	--	0.0016	22
MW-21	12/16/21	N	<1	<1	<0.1	41	--	--	--	0.076 J	--	0.2	65
MW-22	11/30/21	N	<1	<1	22 J	87	--	--	--	8.20	--	2.50	36
MW-22	11/30/21	FD	<1	<1	24 J	92	--	--	--	8	--	2.50	38
MW-23-060	12/09/21	N	36	35	<0.1 J	--	--	--	--	--	--	0.0016	24
MW-23-060	12/09/21	FD	36	34	<0.1 J	--	--	--	--	--	--	0.0015	23
MW-23-080	12/09/21	N	<1	<1	<0.1 J	--	--	--	--	--	--	0.00094	46
MW-24A	12/09/21	N	<0.2	1.9	<0.1 J	--	--	--	--	--	--	0.43	110
MW-24B	12/09/21	N	<1	1.3	<0.1 J	--	--	--	--	--	--	0.087	63
MW-24B	12/09/21	FD	<1	1.1	<0.1 J	--	--	--	--	--	--	0.087	64
MW-24BR	12/10/21	N	<1	<1	<0.1	--	--	--	--	--	--	0.079	--
MW-25	12/07/21	N	70	80	0.75 J	--	--	--	--	--	--	0.0036 J	14
MW-26	12/15/21	N	2,200	2,300	0.92	33	--	--	--	0.046 J	--	0.0023	16
MW-27-020	12/01/21	N	<0.2	<1	0.71	55	--	--	--	0.032	--	0.0094	5.9
MW-27-060	12/01/21	N	<0.2	<1	12	70	--	--	--	0.39	--	0.27	4.7
MW-27-085	12/01/21	N	<1	<1	<0.1	43	--	--	--	0.17	--	0.14	19
MW-28-025	12/08/21	N	<0.2	<1	0.4	68	--	--	--	<0.02	--	0.006	4.6
MW-28-090	12/08/21	N	<0.2	<1	<0.1	27	--	--	--	0.59	--	0.14	26
MW-29	12/02/21	N	<0.2	<1	--	--	--	--	--	--	--	--	--
MW-30-030	12/03/21	N	<1	<1	<0.1	250	--	--	--	0.54 J	--	0.18	48
MW-30-050	12/03/21	N	<0.2	2.6	2.7	21	--	--	--	0.038 J	--	0.26	4.9
MW-31-060	12/16/21	N	310	310	0.52	55	--	--	--	0.021 J	--	0.0013	25
MW-31-060	12/16/21	FD	310	310	0.32	57	--	--	--	<0.02	--	0.0013	26
MW-31-135	12/16/21	N	13	14	<0.1	46	--	--	--	<0.02	--	<0.0005	27
MW-32-020	11/30/21	N	<1	<1	<0.1 J	110	--	--	--	4.50	--	0.2	100
MW-32-035	11/30/21	N	<0.2	<1	15 J	160	--	--	--	12	--	0.59	9.6
MW-33-040	11/30/21	N	<1	2.2	--	--	--	--	--	--	--	--	380
MW-33-090	11/30/21	N	3	5.6	--	--	--	--	--	--	--	--	8.1
MW-33-090	11/30/21	FD	3	6.6	--	--	--	--	--	--	--	--	8.2
MW-33-150	11/30/21	N	2.8	31	--	--	--	--	--	--	--	--	39

Table 3.4
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Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)
MW-11D	12/09/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-12	12/13/21	N	--	19	--	--	--	--	--	--	--	--	17
MW-13	12/07/21	N	--	3	--	--	--	--	--	--	--	--	5.4
MW-13	12/07/21	FD	--	2.8	--	--	--	--	--	--	--	--	5.5
MW-14	12/07/21	N	--	2.1	--	--	--	--	--	--	--	--	3.7
MW-15	12/02/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-19	12/13/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-20-070	12/15/21	N	--	33 J	--	--	--	<0.2	--	--	--	<5	39
MW-20-100	12/15/21	N	--	6 J	--	--	--	<0.2	--	--	--	<2.5	7.9
MW-20-130	12/15/21	N	--	37 J	--	--	--	<0.2	--	--	--	<5	13
MW-21	12/16/21	N	--	4.5	--	--	--	<0.2	--	--	--	<5	0.27
MW-22	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-22	11/30/21	FD	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-23-060	12/09/21	N	--	5.3	--	--	--	--	--	--	--	--	5.7
MW-23-060	12/09/21	FD	--	5	--	--	--	--	--	--	--	--	5.8
MW-23-080	12/09/21	N	--	4.5	--	--	--	--	--	--	--	--	4.7
MW-24A	12/09/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-24B	12/09/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-24B	12/09/21	FD	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-24BR	12/10/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-25	12/07/21	N	--	6.2	--	--	--	--	--	--	--	--	10
MW-26	12/15/21	N	--	13 J	--	--	--	<0.2	--	--	--	<5	13
MW-27-020	12/01/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-27-060	12/01/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-27-085	12/01/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-28-025	12/08/21	N	--	1.3	--	--	--	--	--	--	--	--	<0.1
MW-28-090	12/08/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-29	12/02/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-30-030	12/03/21	N	--	0.54	--	--	--	--	--	--	--	--	0.1
MW-30-050	12/03/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-31-060	12/16/21	N	--	3.1	--	--	--	<0.2	--	--	--	<2.5	3.6
MW-31-060	12/16/21	FD	--	3.1	--	--	--	<0.2	--	--	--	<2.5	3.6
MW-31-135	12/16/21	N	--	0.58	--	--	--	<0.2	--	--	--	<5	1.2
MW-32-020	11/30/21	N	--	2.2	--	--	--	--	--	--	--	--	<0.1
MW-32-035	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-33-040	11/30/21	N	--	5.7	--	--	--	--	--	--	--	--	0.35
MW-33-090	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	1.1
MW-33-090	11/30/21	FD	--	<0.5	--	--	--	--	--	--	--	--	1
MW-33-150	11/30/21	N	--	0.63	--	--	--	--	--	--	--	--	1.5

Table 3.4
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Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-11D	12/09/21	N	--	--	--
MW-12	12/13/21	N	--	--	--
MW-13	12/07/21	N	--	--	--
MW-13	12/07/21	FD	--	--	--
MW-14	12/07/21	N	--	--	--
MW-15	12/02/21	N	--	--	--
MW-19	12/13/21	N	--	--	--
MW-20-070	12/15/21	N	490	--	<1
MW-20-100	12/15/21	N	200	--	<1
MW-20-130	12/15/21	N	960	--	<1
MW-21	12/16/21	N	1,600	--	<1
MW-22	11/30/21	N	--	--	1.3
MW-22	11/30/21	FD	--	--	1.4
MW-23-060	12/09/21	N	--	--	--
MW-23-060	12/09/21	FD	--	--	--
MW-23-080	12/09/21	N	--	--	--
MW-24A	12/09/21	N	--	--	--
MW-24A	12/09/21	N	--	--	--
MW-24B	12/09/21	N	--	--	--
MW-24B	12/09/21	FD	--	--	--
MW-24BR	12/10/21	N	--	--	--
MW-25	12/07/21	N	--	--	--
MW-26	12/15/21	N	430	--	<1
MW-27-020	12/01/21	N	--	--	1
MW-27-060	12/01/21	N	--	--	1.3
MW-27-085	12/01/21	N	--	--	<1
MW-28-025	12/08/21	N	--	--	<1
MW-28-090	12/08/21	N	--	--	<1
MW-29	12/02/21	N	--	--	--
MW-30-030	12/03/21	N	--	--	11
MW-30-050	12/03/21	N	--	--	1
MW-31-060	12/16/21	N	210	--	<1
MW-31-060	12/16/21	FD	210	--	<1
MW-31-135	12/16/21	N	500	--	<1
MW-32-020	11/30/21	N	--	--	4.4
MW-32-035	11/30/21	N	--	--	1.9
MW-33-040	11/30/21	N	--	--	--
MW-33-090	11/30/21	N	--	--	--
MW-33-090	11/30/21	FD	--	--	--
MW-33-150	11/30/21	N	--	--	--

Table 3.4
Fourth Quarter 2021 Monitoring Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)
MW-33-210	11/30/21	N	12	20	--	--	--	--	--	--	--	--	--
MW-34-055	11/02/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-34-055	11/19/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-34-055	12/01/21	N	<0.2	<1	4	30	--	--	--	0.096	--	0.087	4.5
MW-34-080	11/02/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-34-080	11/19/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-34-080	12/01/21	N	<0.2	<1	<0.1	36	--	--	--	0.35	--	0.074	12
MW-34-100	11/02/21	N	<1	--	--	--	--	--	--	--	--	--	--
MW-34-100	11/19/21	N	<1	--	--	--	--	--	--	--	--	--	--
MW-34-100	12/01/21	N	<1	<1	<0.1	23	--	--	--	0.073	--	0.092	59
MW-34-100	12/01/21	FD	<1	<1	<0.1	23	--	--	--	0.052	--	0.094	59
MW-35-060	12/06/21	N	20	20 J	--	--	--	--	--	--	--	--	8.8
MW-35-135	12/06/21	N	26	25 J	--	--	--	--	--	--	--	--	20
MW-36-020	11/01/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-36-020	11/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-36-020	12/03/21	N	<0.2	<1	0.48	120	--	--	--	1 J	--	0.29	17
MW-36-040	11/01/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-36-040	11/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-36-040	11/18/21	FD	<0.2	--	--	--	--	--	--	--	--	--	--
MW-36-040	12/03/21	N	<0.2	<1	5	41	--	--	--	0.32 J	--	0.11	3.5
MW-36-040	12/03/21	FD	<0.2	<1	5.2	40	--	--	--	0.31 J	--	0.11	3.3
MW-36-050	11/01/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-36-050	11/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-36-050	12/03/21	N	<0.2	<1	5.2	25	--	--	--	0.15 J	--	0.22	4.1
MW-36-070	11/01/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-36-070	11/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-36-070	12/03/21	N	<0.2	<1	2.2	33	--	--	--	<0.02 J	--	0.21	4.9
MW-36-090	11/01/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-36-090	11/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-36-090	12/03/21	N	<0.2	<1	1.6	36	--	--	--	0.035 J	--	0.072	14
MW-36-100	11/01/21	N	36	--	--	--	--	--	--	--	--	--	--
MW-36-100	11/18/21	N	8	--	--	--	--	--	--	--	--	--	--
MW-36-100	12/03/21	N	8	11	<0.1	43	--	--	--	0.26 J	--	0.23	19
MW-37D	12/07/21	N	6	7.4	<0.1 J	--	--	--	--	--	--	<0.0005 J	68
MW-37S	12/07/21	N	7.8	8	<0.1 J	--	--	--	--	--	--	0.0057 J	16
MW-38D	12/08/21	N	50	47	<0.1	--	--	--	--	--	--	0.0053 J	58
MW-38S	12/08/21	N	15	17	7.2	--	--	--	--	--	--	0.0034 J	8.2
MW-39-040	12/07/21	N	<0.2	<1	16	74	--	--	--	0.32 J	--	0.12	7.7
MW-39-050	12/07/21	N	<0.2	<1	16	73	--	--	--	<0.02	--	0.12	7.6

Table 3.4
Fourth Quarter 2021 Monitoring Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)
MW-33-210	11/30/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	11/02/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	11/19/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	12/01/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-34-080	11/02/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-34-080	11/19/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-34-080	12/01/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-34-100	11/02/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	11/19/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	12/01/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-34-100	12/01/21	FD	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-35-060	12/06/21	N	--	0.92	--	--	--	--	--	--	--	--	2
MW-35-135	12/06/21	N	--	1	--	--	--	--	--	--	--	--	2.5
MW-36-020	11/01/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-36-020	11/18/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-36-020	12/03/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-36-040	11/01/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	11/18/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	11/18/21	FD	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	12/03/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-36-040	12/03/21	FD	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-36-050	11/01/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-36-050	11/18/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-36-050	12/03/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-36-070	11/01/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-36-070	11/18/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-36-070	12/03/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-36-090	11/01/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-36-090	11/18/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-36-090	12/03/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-36-100	11/01/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-36-100	11/18/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-36-100	12/03/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-37D	12/07/21	N	--	1	--	--	--	--	--	--	--	--	1.4
MW-37S	12/07/21	N	--	0.8	--	--	--	--	--	--	--	--	1.2
MW-38D	12/08/21	N	--	0.83	--	--	--	--	--	--	--	--	1.5
MW-38S	12/08/21	N	--	3.9	--	--	--	--	--	--	--	--	7
MW-39-040	12/07/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-39-050	12/07/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1

Table 3.4
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Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-33-210	11/30/21	N	--	--	--
MW-34-055	11/02/21	N	--	--	--
MW-34-055	11/19/21	N	--	--	--
MW-34-055	12/01/21	N	--	--	<1
MW-34-080	11/02/21	N	--	--	--
MW-34-080	11/19/21	N	--	--	--
MW-34-080	12/01/21	N	--	--	<1
MW-34-100	11/02/21	N	--	--	--
MW-34-100	11/19/21	N	--	--	--
MW-34-100	12/01/21	N	--	--	<1
MW-34-100	12/01/21	FD	--	--	<1
MW-35-060	12/06/21	N	--	--	--
MW-35-135	12/06/21	N	--	--	--
MW-36-020	11/01/21	N	--	--	--
MW-36-020	11/18/21	N	--	--	--
MW-36-020	12/03/21	N	--	--	1.6
MW-36-040	11/01/21	N	--	--	--
MW-36-040	11/18/21	N	--	--	--
MW-36-040	11/18/21	FD	--	--	--
MW-36-040	12/03/21	N	--	--	2.3
MW-36-040	12/03/21	FD	--	--	2.3
MW-36-050	11/01/21	N	--	--	--
MW-36-050	11/18/21	N	--	--	--
MW-36-050	12/03/21	N	--	--	1.3
MW-36-070	11/01/21	N	--	--	--
MW-36-070	11/18/21	N	--	--	--
MW-36-070	12/03/21	N	--	--	<1
MW-36-090	11/01/21	N	--	--	--
MW-36-090	11/18/21	N	--	--	--
MW-36-090	12/03/21	N	--	--	<1
MW-36-100	11/01/21	N	--	--	--
MW-36-100	11/18/21	N	--	--	--
MW-36-100	12/03/21	N	--	--	<1
MW-37D	12/07/21	N	--	--	--
MW-37S	12/07/21	N	--	--	--
MW-38D	12/08/21	N	--	--	--
MW-38S	12/08/21	N	--	--	--
MW-39-040	12/07/21	N	--	--	2.2
MW-39-050	12/07/21	N	--	--	1

Table 3.4
Fourth Quarter 2021 Monitoring Results
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Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)
MW-39-060	12/07/21	N	<0.2	<1	16	74	--	--	--	0.11 J	--	0.12	7.7
MW-39-070	12/07/21	N	<0.2	<1	16	74	--	--	--	<0.02	--	0.12	7.7
MW-39-080	12/07/21	N	<0.2	<1	16 J	74 J	--	--	--	<0.02	--	0.12 J	7.7 J
MW-39-080	12/07/21	FD	<0.2	<1	1.5 J	22 J	--	--	--	<0.02	--	0.0039 J	22 J
MW-39-100	12/07/21	N	39	39	<0.1	27	--	--	--	0.029 J	--	0.0058	7.4
MW-40D	12/06/21	N	45	41 J	<0.1	--	--	--	--	--	--	<0.0005 J	35
MW-40S	12/06/21	N	43	45 J	4.3	--	--	--	--	--	--	<0.0005 J	32
MW-40S	12/06/21	FD	42	44 J	4.6	--	--	--	--	--	--	<0.0005 J	31
MW-41D	12/07/21	N	<1	2.8	<0.1 J	--	--	--	--	--	--	0.032 J	79
MW-41M	12/07/21	N	6.9	9	<0.1 J	--	--	--	--	--	--	0.0024 J	27
MW-41S	12/07/21	N	3.6	6.3	<0.1 J	--	--	--	--	--	--	0.0038 J	14
MW-41S	12/07/21	FD	3.7	5.1	<0.1 J	--	--	--	--	--	--	0.0033 J	14
MW-42-030	11/30/21	N	<0.2	<1	0.72 J	160	--	--	--	0.76	--	0.14	17
MW-42-055	11/30/21	N	<0.2	<1	13 J	150	--	--	--	0.24	--	0.21	3.9
MW-42-065	11/30/21	N	<0.2	<1	6.6 J	69	--	--	--	0.046	--	1.60	7.7
MW-43-025	11/30/21	N	<0.2	<1	31 J	75	--	--	--	4.40	--	0.36	5.3
MW-43-075	11/30/21	N	<0.2	<1	8.7 J	42	--	--	--	3.70	--	0.54	15
MW-43-090	11/30/21	N	<1	<1	<0.1 J	55	--	--	--	1.20	--	0.52	29
MW-44-070	11/02/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-44-070	11/19/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-44-070	12/08/21	N	<0.2	<1	2.4	31	--	--	--	0.14	--	0.12	7.6
MW-44-115	11/02/21	N	1.2	--	--	--	--	--	--	--	--	--	--
MW-44-115	11/19/21	N	1.1	--	--	--	--	--	--	--	--	--	--
MW-44-115	12/08/21	N	1.8	2.2	0.86	19	--	--	--	<0.02	--	0.01	77
MW-44-125	11/02/21	N	<1	--	--	--	--	--	--	--	--	--	--
MW-44-125	11/19/21	N	<0.2	--	--	--	--	--	--	--	--	--	--
MW-44-125	12/08/21	N	<1	1.9	<0.1	55	--	--	--	0.3	--	0.39	230
MW-45-095a	12/01/21	N	<0.2	<1	<0.1	37	--	--	--	<0.02	--	0.26	14
MW-46-175	11/02/21	N	5.2	--	--	--	--	--	--	--	--	--	--
MW-46-175	11/19/21	N	4.2	--	--	--	--	--	--	--	--	--	--
MW-46-175	12/08/21	N	2.1	36	<0.1	31	--	--	--	0.2	--	0.021	200
MW-46-205	12/08/21	N	<1	<1	<0.1	33	--	--	--	0.068	--	0.046	340
MW-46-205	12/08/21	FD	<1	<1	<0.1	33	--	--	--	<0.1	--	0.042	340
MW-47-055	12/06/21	N	17	18 J	--	--	--	--	--	--	--	--	--
MW-47-115	12/06/21	N	17	17 J	--	--	--	--	--	--	--	--	--
MW-48	12/15/21	N	<1	1.8	<0.1	--	--	--	--	--	--	0.034	9.9
MW-49-135	12/02/21	N	6.1	7.3	--	--	--	--	--	--	--	--	--
MW-49-275	12/02/21	N	<1	2.2	--	--	--	--	--	--	--	--	--
MW-49-365	12/02/21	N	<1	2.6	--	--	--	--	--	--	--	--	--

Table 3.4
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Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)
MW-39-060	12/07/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-39-070	12/07/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-39-080	12/07/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-39-080	12/07/21	FD	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-39-100	12/07/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-40D	12/06/21	N	--	1.1	--	--	--	--	--	--	--	--	1.3
MW-40S	12/06/21	N	--	11	--	--	--	--	--	--	--	--	25
MW-40S	12/06/21	FD	--	11	--	--	--	--	--	--	--	--	25
MW-41D	12/07/21	N	--	0.65	--	--	--	--	--	--	--	--	<0.1
MW-41M	12/07/21	N	--	<0.5	--	--	--	--	--	--	--	--	0.58
MW-41S	12/07/21	N	--	2.2	--	--	--	--	--	--	--	--	2.5
MW-41S	12/07/21	FD	--	1.9	--	--	--	--	--	--	--	--	2.5
MW-42-030	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-42-055	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-42-065	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-43-025	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-43-075	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-43-025	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-43-075	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-43-090	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-44-070	11/02/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-44-070	11/19/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-44-070	12/08/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-44-115	11/02/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-44-115	11/19/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-44-115	12/08/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-44-125	11/02/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-44-125	11/19/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-44-125	12/08/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-45-095a	12/01/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-46-175	11/02/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-46-175	11/19/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-46-175	12/08/21	N	--	0.56	--	--	--	--	--	--	--	--	0.9
MW-46-205	12/08/21	N	--	0.82	--	--	--	--	--	--	--	--	0.93
MW-46-205	12/08/21	FD	--	0.86	--	--	--	--	--	--	--	--	0.96
MW-47-055	12/06/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-47-115	12/06/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-48	12/15/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-49-135	12/02/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-49-275	12/02/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-49-365	12/02/21	N	--	--	--	--	--	--	--	--	--	--	--

Table 3.4
Fourth Quarter 2021 Monitoring Results
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Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-39-060	12/07/21	N	--	--	<1
MW-39-070	12/07/21	N	--	--	<1
MW-39-080	12/07/21	N	--	--	<1
MW-39-080	12/07/21	FD	--	--	<1
MW-39-100	12/07/21	N	--	--	<1
MW-40D	12/06/21	N	--	--	--
MW-40S	12/06/21	N	--	--	--
MW-40S	12/06/21	FD	--	--	--
MW-41D	12/07/21	N	--	--	--
MW-41M	12/07/21	N	--	--	--
MW-41S	12/07/21	N	--	--	--
MW-41S	12/07/21	FD	--	--	--
MW-42-030	11/30/21	N	--	--	1.8
MW-42-055	11/30/21	N	--	--	<1
MW-42-065	11/30/21	N	--	--	<1
MW-43-025	11/30/21	N	--	--	1.2
MW-43-075	11/30/21	N	--	--	<1
MW-43-090	11/30/21	N	--	--	<1
MW-44-070	11/02/21	N	--	--	--
MW-44-070	11/19/21	N	--	--	--
MW-44-070	12/08/21	N	--	--	<1
MW-44-115	11/02/21	N	--	--	--
MW-44-115	11/19/21	N	--	--	--
MW-44-115	12/08/21	N	--	--	<1
MW-44-125	11/02/21	N	--	--	--
MW-44-125	11/19/21	N	--	--	--
MW-44-125	12/08/21	N	--	--	<1
MW-45-095a	12/01/21	N	--	--	<1
MW-46-175	11/02/21	N	--	--	--
MW-46-175	11/19/21	N	--	--	--
MW-46-175	12/08/21	N	--	--	<1
MW-46-205	12/08/21	N	--	--	<1
MW-46-205	12/08/21	FD	--	--	<1
MW-47-055	12/06/21	N	--	--	--
MW-47-115	12/06/21	N	--	--	--
MW-48	12/15/21	N	--	--	--
MW-49-135	12/02/21	N	--	--	--
MW-49-275	12/02/21	N	--	--	--
MW-49-365	12/02/21	N	--	--	--

Table 3.4
Fourth Quarter 2021 Monitoring Results
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Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)
MW-50-095	12/13/21	N	14	15	<0.1	--	--	--	--	--	--	<0.0005	--
MW-50-200	12/13/21	N	1,900	1,900	3.4	--	--	--	--	--	--	<0.0005	38
MW-51	12/15/21	N	2,900	3,100	<0.1	43	--	--	--	0.025 J	--	0.0011	42
MW-51	12/15/21	FD	2,900	3,000	<0.1	43	--	--	--	0.024 J	--	0.001	42
MW-52D	11/30/21	N	<1	<1	2 J	37	--	--	--	0.95	--	0.28	61
MW-52M	11/30/21	N	<1	<1	<0.1 J	54	--	--	--	1.40	--	0.21	30
MW-52S	11/30/21	N	<0.2	<1	<0.1 J	1,400	--	--	--	20	--	1.40	5.3
MW-52S	11/30/21	FD	<0.2	<1	<0.1 J	1,300	--	--	--	20	--	1.30	4.9
MW-53D	11/30/21	N	<1	<1	3.6 J	44	--	--	--	0.22	--	1.30	180
MW-53M	11/30/21	N	<1	<1	<0.1 J	58	--	--	--	0.38	--	0.42	54
MW-53S	11/30/21	N	<0.2	<1	<0.1 J	200	--	--	--	5.40	--	1.20	1.6
MW-54-085	12/14/21	N	<1	<10	<10	--	--	--	--	--	--	0.689	<100 J
MW-54-140	12/14/21	N	<1	<10	<10	--	--	--	--	--	--	<0.1	<100 J
MW-54-195	12/14/21	N	<1	<10	<10	--	--	--	--	--	--	0.285	111 J
MW-55-045	12/14/21	N	<0.2	<1	6.35 J	--	--	--	--	--	--	0.625	--
MW-55-120	12/14/21	N	7.96	<10	<10	--	--	--	--	--	--	<0.1	--
MW-55-120	12/14/21	FD	7.95	<10	<10	--	--	--	--	--	--	<0.1	--
MW-56D	12/14/21	N	<1	<10	<10	--	--	--	--	--	--	0.804	<100 J
MW-56M	12/14/21	N	<1	<10	<10	--	--	--	--	--	--	0.784	<100 J
MW-56S	12/14/21	N	<0.2	<10	<10	--	--	--	--	--	--	1.25	<100 J
MW-57-070	12/10/21	N	380	410	1.2	--	--	--	--	--	--	0.0011	4
MW-57-185	12/10/21	N	<1	<1	<0.1	--	--	--	--	--	--	0.0032	78
MW-58BR	12/09/21	N	6.4	7.3	<0.1 J	--	--	--	--	--	--	0.35	25
MW-59-100	12/15/21	N	2,000	2,000	<0.1	--	--	--	--	--	--	0.0097	8
MW-60-125	12/16/21	N	480	480	<0.1	--	--	--	--	--	--	0.0061	19
MW-60BR-245	12/16/21	N	7.1	8.6	<0.1	--	--	--	--	--	--	0.0016	--
MW-61-110	12/10/21	N	370	390	<0.1	--	--	--	--	--	--	0.35	22
MW-62-065	12/15/21	N	580	610	<0.1	--	--	--	--	--	--	<0.0005	11
MW-62-110	12/01/21	N	<1	<1	5.2	--	--	--	--	--	--	0.18	38
MW-62-190	12/01/21	N	<1	<1	<0.1	--	--	--	--	--	--	0.57	29
MW-63-065	12/16/21	N	1.4	1.3	<0.1	--	--	--	--	--	--	<0.0005	16
MW-64BR	12/16/21	N	<1	<1	<0.1	--	--	--	--	--	--	1	58
MW-65-160	12/08/21	N	300	310	<0.1	--	--	--	--	--	--	0.00097 J	23
MW-65-225	12/08/21	N	83	80	<0.1	--	--	--	--	--	--	0.043 J	50
MW-65-225	12/08/21	FD	83	81	<0.1	--	--	--	--	--	--	0.05 J	50
MW-66-165	12/07/21	N	350	350	0.49 J	--	--	--	--	--	--	<0.0005 J	5.4
MW-66-230	12/07/21	N	5,000	5,200	8.9 J	--	--	--	--	--	--	0.0081 J	67
MW-66BR-270	12/16/21	N	<1	1.9	<0.1	--	--	--	--	--	--	0.82	--
MW-67-185	12/07/21	N	<100	<1	<0.1 J	--	--	--	--	--	--	2 J	47

Table 3.4
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Location ID	Sample Date	Sample Type	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)
MW-50-095	12/13/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-50-200	12/13/21	N	--	1.5	--	--	--	--	--	--	--	--	1.9
MW-51	12/15/21	N	--	34 J	--	--	--	<0.2	--	--	--	<5	13
MW-51	12/15/21	FD	--	33 J	--	--	--	<0.2	--	--	--	<5	12
MW-52D	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-52M	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-52S	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-52S	11/30/21	FD	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-53D	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-53M	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-53S	11/30/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-54-085	12/14/21	N	--	<100 J	--	--	--	--	--	--	<0.5	--	--
MW-54-140	12/14/21	N	--	<100 J	--	--	--	--	--	--	0.605	--	--
MW-54-195	12/14/21	N	--	<100 J	--	--	--	--	--	--	<1	--	--
MW-55-045	12/14/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-55-120	12/14/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-55-120	12/14/21	FD	--	--	--	--	--	--	--	--	--	--	--
MW-55-120	12/14/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-55-120	12/14/21	FD	--	--	--	--	--	--	--	--	--	--	--
MW-56D	12/14/21	N	--	<100 J	--	--	--	--	--	--	<1	--	--
MW-56M	12/14/21	N	--	<100 J	--	--	--	--	--	--	<0.5	--	--
MW-56S	12/14/21	N	--	<100 J	--	--	--	--	--	--	<0.2	--	--
MW-57-070	12/10/21	N	--	3.7	--	--	--	--	--	--	--	--	11
MW-57-185	12/10/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-58BR	12/09/21	N	--	1.9	--	--	--	--	--	--	--	--	0.74
MW-59-100	12/15/21	N	--	2.1	--	--	--	--	--	--	--	--	2.3
MW-60-125	12/16/21	N	--	5.8	--	--	--	--	--	--	--	--	3.8
MW-60BR-245	12/16/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-61-110	12/10/21	N	--	1.1	--	--	--	--	--	--	--	--	0.63
MW-62-065	12/15/21	N	--	3.4	--	--	--	--	--	--	--	--	5
MW-62-110	12/01/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-62-190	12/01/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-63-065	12/16/21	N	--	0.74	--	--	--	--	--	--	--	--	1.3
MW-64BR	12/16/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-65-160	12/08/21	N	--	10	--	--	--	--	--	--	--	--	16
MW-65-225	12/08/21	N	--	1.8	--	--	--	--	--	--	--	--	2
MW-65-225	12/08/21	FD	--	1.7	--	--	--	--	--	--	--	--	1.9
MW-66-165	12/07/21	N	--	11	--	--	--	--	--	--	--	--	19
MW-66-230	12/07/21	N	--	6.9	--	--	--	--	--	--	--	--	10
MW-66BR-270	12/16/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-67-185	12/07/21	N	--	26	--	--	--	--	--	--	--	--	8.5

Table 3.4
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Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-50-095	12/13/21	N	--	--	--
MW-50-200	12/13/21	N	--	--	--
MW-51	12/15/21	N	720	--	<1
MW-51	12/15/21	FD	720	--	<1
MW-52D	11/30/21	N	--	--	<50
MW-52M	11/30/21	N	--	--	<1
MW-52S	11/30/21	N	--	--	1.3
MW-52S	11/30/21	FD	--	--	1.4
MW-53D	11/30/21	N	--	--	<1
MW-53M	11/30/21	N	--	--	<1
MW-53S	11/30/21	N	--	--	<1
MW-54-085	12/14/21	N	--	--	--
MW-54-140	12/14/21	N	--	--	--
MW-54-195	12/14/21	N	--	--	--
MW-55-045	12/14/21	N	--	--	--
MW-55-120	12/14/21	N	--	--	--
MW-55-120	12/14/21	FD	--	--	--
MW-55-120	12/14/21	N	--	--	--
MW-55-120	12/14/21	FD	--	--	--
MW-56D	12/14/21	N	--	--	--
MW-56M	12/14/21	N	--	--	--
MW-56S	12/14/21	N	--	--	--
MW-57-070	12/10/21	N	--	--	--
MW-57-185	12/10/21	N	--	--	--
MW-58BR	12/09/21	N	--	--	--
MW-59-100	12/15/21	N	--	--	--
MW-60-125	12/16/21	N	--	--	--
MW-60BR-245	12/16/21	N	--	--	--
MW-61-110	12/10/21	N	--	--	--
MW-62-065	12/15/21	N	--	--	--
MW-62-110	12/01/21	N	--	--	--
MW-62-190	12/01/21	N	--	--	--
MW-63-065	12/16/21	N	--	--	--
MW-64BR	12/16/21	N	--	--	--
MW-65-160	12/08/21	N	--	--	--
MW-65-225	12/08/21	N	--	--	--
MW-65-225	12/08/21	FD	--	--	--
MW-66-165	12/07/21	N	--	--	--
MW-66-230	12/07/21	N	--	--	--
MW-66BR-270	12/16/21	N	--	--	--
MW-67-185	12/07/21	N	--	--	--

Table 3.4
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Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)
MW-67-225	12/07/21	N	2,800	3,000	<0.1 J	--	--	--	--	--	--	0.0012 J	42
MW-67-260	12/07/21	N	810	760	<0.1 J	--	--	--	--	--	--	0.0017 J	60
MW-68-180	11/02/21	N	34,000	--	--	--	--	--	--	--	--	--	--
MW-68-180	12/07/21	N	26,000	28,000	1.9 J	--	--	--	--	--	--	<0.0005 J	50
MW-68-240	12/07/21	N	1,900	2,000	<0.1 J	--	--	--	--	--	--	0.012 J	25
MW-68-240	12/07/21	FD	1,900	1,900	<0.1 J	--	--	--	--	--	--	0.012 J	24
MW-68BR-280	12/02/21	N	<1	<1	<0.1 J	--	--	--	--	--	--	0.06	--
MW-69-195	12/08/21	N	410	390	0.86	--	--	--	--	--	--	0.0021 J	54
MW-70-105	12/09/21	N	210	220	3 J	--	--	--	--	--	--	0.0028	62
MW-70BR-225	12/09/21	N	1,400	1,400	<0.1 J	--	--	--	--	--	--	0.014	19
MW-70BR-287	12/09/21	N	350	340	<0.1 J	--	--	--	--	--	--	<0.0005	--
MW-71-035	12/16/21	N	<1	<1	<0.1	42	--	--	--	0.031 J	--	0.071	15
MW-72-080	12/09/21	N	71	66	4.4 J	--	--	--	--	--	--	0.031	72
MW-72BR-200	12/09/21	N	<1	1.5	7.6 J	--	--	--	--	--	--	0.051	--
MW-73-080	12/09/21	N	9.7	11	<0.1 J	--	--	--	--	--	--	0.018	35
MW-74-240	12/08/21	N	<0.2	<1	6.5	--	--	--	--	--	--	0.0074 J	46
MW-75-033	11/29/21	N	42	39	--	--	--	--	--	--	--	--	--
MW-75-117	11/29/21	N	10	10	--	--	--	--	--	--	--	--	--
MW-75-202	11/29/21	N	<1	<1	--	--	--	--	--	--	--	--	--
MW-75-202	11/29/21	FD	<1	<1	--	--	--	--	--	--	--	--	--
MW-75-267	11/29/21	N	<1	<1	--	--	--	--	--	--	--	--	--
MW-75-337	11/29/21	N	<1	<1	--	--	--	--	--	--	--	--	--
MW-76-039	12/02/21	N	130	140	<0.1 J	39	--	--	--	<0.02 J	--	0.01	27
MW-76-156	12/02/21	N	4	4.5	<0.1 J	47	--	--	--	0.058 J	--	0.092	31
MW-76-181	12/02/21	N	1,500	1,500	1.5 J	67	--	--	--	0.052 J	--	0.089	27
MW-76-218	12/02/21	N	270	280	3.9 J	66	--	--	--	<0.02 J	--	0.28	68
MW-77-046	12/02/21	N	<1	<1	<0.1 J	95	--	--	--	0.94 J	--	0.42	95
MW-77-102	12/02/21	N	0.67	<1	<0.1 J	40	--	--	--	0.039 J	--	0.02	4.4
MW-77-158	12/02/21	N	7.1	7.7	<0.1 J	43	--	--	--	0.048 J	--	0.06	32
MW-77-158	12/02/21	FD	6.9	7.9	<0.1 J	44	--	--	--	<0.02 J	--	0.062	33
MW-77-187	12/02/21	N	2.5	3.1	<0.1 J	40	--	--	--	0.05 J	--	0.05	250
MW-78-070	12/15/21	N	4,400	4,500	0.85	40	--	--	--	<0.02 J	--	0.00063	13
MW-78-142	12/15/21	N	5,500	5,400	<0.1	31	--	--	--	0.031 J	--	0.0042	21
MW-79-058	12/15/21	N	3,200	3,400	0.3	93	--	--	--	<0.02 J	--	0.00056	10
MW-79-102	12/15/21	N	2,800	2,800	1.5	37	--	--	--	<0.02 J	--	0.0052	29
MW-80-057	12/15/21	N	710	710	1.3	51	--	--	--	<0.02 J	--	0.0047	36
MW-80-082	12/15/21	N	1,200	1,200	1.5	33	--	--	--	<0.02 J	--	0.00087	26
MW-81-043	12/13/21	N	8.7	9.2	0.75	110	--	--	--	<0.02 J	--	0.16	24
MW-81-098	12/13/21	N	1.2	1.7	<0.1	70	--	--	--	0.041 J	--	0.14	3.4

Table 3.4
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Location ID	Sample Date	Sample Type	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)
MW-67-225	12/07/21	N	--	50	--	--	--	--	--	--	--	--	15
MW-67-260	12/07/21	N	--	1.4	--	--	--	--	--	--	--	--	0.66
MW-68-180	11/02/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-68-180	12/07/21	N	--	15	--	--	--	--	--	--	--	--	27
MW-68-240	12/07/21	N	--	3.9	--	--	--	--	--	--	--	--	5.1
MW-68-240	12/07/21	FD	--	3.4	--	--	--	--	--	--	--	--	5.1
MW-68BR-280	12/02/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-69-195	12/08/21	N	--	11	--	--	--	--	--	--	--	--	16
MW-70-105	12/09/21	N	--	4.5	--	--	--	--	--	--	--	--	5.1
MW-70BR-225	12/09/21	N	--	2.2	--	--	--	--	--	--	--	--	3.4
MW-70BR-287	12/09/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-71-035	12/16/21	N	--	<0.5	--	--	--	<0.2	--	--	--	<5	<0.1
MW-72-080	12/09/21	N	--	1.5	--	--	--	--	--	--	--	--	1.2
MW-72BR-200	12/09/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-73-080	12/09/21	N	--	3.8	--	--	--	--	--	--	--	--	3.5
MW-74-240	12/08/21	N	--	<0.5	--	--	--	--	--	--	--	--	0.27
MW-75-033	11/29/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-75-117	11/29/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-75-202	11/29/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-75-202	11/29/21	FD	--	--	--	--	--	--	--	--	--	--	--
MW-75-267	11/29/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-75-337	11/29/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-76-039	12/02/21	N	--	2.8	--	--	--	<0.2	--	--	--	<2.5	2.8
MW-76-156	12/02/21	N	--	1.1	--	--	--	<0.2	--	--	--	<5	2
MW-76-181	12/02/21	N	--	1.7	--	--	--	<0.2	--	--	--	<5	2.3
MW-76-218	12/02/21	N	--	1	--	--	--	<0.2	--	--	--	<10	0.85
MW-77-046	12/02/21	N	--	3	--	--	--	--	--	--	--	--	<0.1
MW-77-102	12/02/21	N	--	<0.5	--	--	--	--	--	--	--	--	0.59
MW-77-158	12/02/21	N	--	0.53	--	--	--	--	--	--	--	--	1.5
MW-77-158	12/02/21	FD	--	0.78	--	--	--	--	--	--	--	--	1.5
MW-77-187	12/02/21	N	--	0.81	--	--	--	--	--	--	--	--	1.2
MW-78-070	12/15/21	N	--	9.2 J	--	--	--	<0.2	--	--	--	<2.5	12
MW-78-142	12/15/21	N	--	33 J	--	--	--	<0.2	--	--	--	<5	9.9
MW-79-058	12/15/21	N	--	9.4 J	--	--	--	<0.2	--	--	--	<5	11
MW-79-102	12/15/21	N	--	57 J	--	--	--	<0.2	--	--	--	<5	16
MW-80-057	12/15/21	N	--	31 J	--	--	--	<0.2	--	--	--	<5	17
MW-80-082	12/15/21	N	--	24 J	--	--	--	<0.2	--	--	--	<5	13
MW-81-043	12/13/21	N	--	2.6	--	--	--	--	--	--	--	--	0.48
MW-81-098	12/13/21	N	--	<0.5	--	--	--	--	--	--	--	--	0.58

Table 3.4
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Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-67-225	12/07/21	N	--	--	--
MW-67-260	12/07/21	N	--	--	--
MW-68-180	11/02/21	N	--	--	--
MW-68-180	12/07/21	N	--	--	--
MW-68-240	12/07/21	N	--	--	--
MW-68-240	12/07/21	FD	--	--	--
MW-68BR-280	12/02/21	N	--	--	--
MW-69-195	12/08/21	N	--	--	--
MW-70-105	12/09/21	N	--	--	--
MW-70BR-225	12/09/21	N	--	--	--
MW-70BR-287	12/09/21	N	--	--	--
MW-71-035	12/16/21	N	1,200	--	<1
MW-72-080	12/09/21	N	--	--	--
MW-72BR-200	12/09/21	N	--	--	--
MW-73-080	12/09/21	N	--	--	--
MW-74-240	12/08/21	N	--	--	--
MW-75-033	11/29/21	N	--	--	--
MW-75-117	11/29/21	N	--	--	--
MW-75-202	11/29/21	N	--	--	--
MW-75-202	11/29/21	FD	--	--	--
MW-75-267	11/29/21	N	--	--	--
MW-75-337	11/29/21	N	--	--	--
MW-76-039	12/02/21	N	190	--	<1
MW-76-156	12/02/21	N	780	--	<1
MW-76-181	12/02/21	N	870	--	<1
MW-76-218	12/02/21	N	880	--	<50
MW-77-046	12/02/21	N	--	--	1.5
MW-77-102	12/02/21	N	--	--	<1
MW-77-158	12/02/21	N	--	--	<1
MW-77-158	12/02/21	FD	--	--	<1
MW-77-187	12/02/21	N	--	--	<1
MW-78-070	12/15/21	N	370	--	<1
MW-78-142	12/15/21	N	900	--	<1
MW-79-058	12/15/21	N	410	--	<5
MW-79-102	12/15/21	N	870	--	<1
MW-80-057	12/15/21	N	520	--	<1
MW-80-082	12/15/21	N	570	--	<1
MW-81-043	12/13/21	N	--	--	<1
MW-81-098	12/13/21	N	--	--	<1

Table 3.4
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Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)
MW-82-046	12/16/21	N	<0.2	<1	15	61	--	--	--	2.90 J	--	0.17	11
MW-82-046	12/16/21	FD	<0.2	<1	15	59	--	--	--	3.20 J	--	0.17	11
MW-82-112	12/16/21	N	0.88	2	<0.1	35	--	--	--	<0.02	--	0.027	8.7
MW-82-168	12/16/21	N	7	7.5	<0.1	48	--	--	--	0.031 J	--	0.14	15
MW-82-198	12/16/21	N	<1	2.9	<0.1	34	--	--	--	0.12 J	--	0.057	140
MW-83-090	12/16/21	N	67	65	0.3	--	--	--	--	--	--	0.0035	4
MW-83-180	12/16/21	N	6.2	8.4	<0.1	--	--	--	--	--	--	0.0011	33
MW-83-225	12/16/21	N	250	220	<0.1	--	--	--	--	--	--	0.0053	47
MW-83-245	12/16/21	N	3.6	4.1	<0.1	--	--	--	--	--	--	0.042	64
MW-84-057	11/29/21	N	27	27	0.9	--	--	--	--	--	--	0.0018	12
MW-84-095	11/29/21	N	3.4	4.2	<0.1	--	--	--	--	--	--	0.0058	5.4
MW-84-132	11/29/21	N	2.4	2.6	<0.1	--	--	--	--	--	--	0.00074	16
MW-84-193	11/29/21	N	14	15	2.2	--	--	--	--	--	--	0.082	58
MW-85-129	11/30/21	N	130	140	0.65	--	--	--	--	--	--	<0.0005	5
MW-85-217	11/30/21	N	490	500	<0.1	--	--	--	--	--	--	0.003	86
MW-85-237	11/30/21	N	240	250	<0.1	--	--	--	--	--	--	0.012	85
MW-86-030	12/14/21	N	<0.2	<1	2.6	95	--	--	--	0.033 J	--	0.42	8
MW-86-066	12/14/21	N	<0.2	<1	<0.1	91	--	--	--	<0.02 J	--	0.76	16
MW-86-120	12/14/21	N	<1	<1	<0.1	42	--	--	--	<0.02 J	--	0.37	33
MW-86-140	12/14/21	N	<1	<1	<0.1	55	--	--	--	<0.02 J	--	0.73	34
MW-87-109	11/30/21	N	18	20	<0.1	--	--	--	--	--	--	<0.0005	5.5
MW-87-139	11/30/21	N	9.8	9.9	<0.1	--	--	--	--	--	--	<0.0005	4.7
MW-87-192	11/30/21	N	1.7	2.2	<0.1	--	--	--	--	--	--	<0.0005	22
MW-87-275	11/30/21	N	1.3	1.8	<0.1	--	--	--	--	--	--	<0.0005	43
MW-88-107	12/08/21	N	130	140	1.7	--	--	--	--	--	--	0.002 J	--
MW-89-183	12/06/21	N	0.98	1.2 J	<0.1	--	--	--	--	--	--	<0.0005 J	7
MW-89-273	12/06/21	N	0.52	1.4 J	3.5	--	--	--	--	--	--	0.0018 J	32
MW-90-031	12/08/21	N	<1	<1	<0.1	97	--	--	--	7	--	0.25	18
MW-91-045	12/14/21	N	<0.2	<1	7 J	--	--	--	--	--	--	0.144	<10 J
MW-91-120	12/14/21	N	7.67	<10	<10	--	--	--	--	--	--	0.162	<100 J
MW-91-170	12/14/21	N	1.66	<10	<10	--	--	--	--	--	--	0.256	130 J
MW-91-320	12/14/21	N	<2	<10	<10	--	--	--	--	--	--	1.42	<100 J
MW-92-037	12/14/21	N	<0.2	<1	22.2 J	--	--	--	--	--	--	0.0327	12.9 J
MW-92-072	12/14/21	N	<0.2	<1	17.1 J	--	--	--	--	--	--	0.0194	19 J
MW-92-102	12/14/21	N	4.85	5.18 J	18.7 J	--	--	--	--	--	--	<0.01	33.3 J
MW-92-122	12/14/21	N	<1	<10	10.4 J	--	--	--	--	--	--	0.188	180 J
MW-93-050	12/13/21	N	17	19	<0.1	--	--	--	--	--	--	0.0053	--
MW-93-213	12/13/21	N	4.7	6.8	<0.1	--	--	--	--	--	--	0.14	--
MW-95-113	12/08/21	N	0.95	2.5	1.4	--	--	--	--	--	--	0.13 J	4.3

Table 3.4
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Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)
MW-82-046	12/16/21	N	--	2	--	--	--	--	--	--	--	--	<0.1
MW-82-046	12/16/21	FD	--	1.8	--	--	--	--	--	--	--	--	<0.1
MW-82-112	12/16/21	N	--	<0.5	--	--	--	--	--	--	--	--	0.72
MW-82-168	12/16/21	N	--	<0.5	--	--	--	--	--	--	--	--	1.6
MW-82-198	12/16/21	N	--	<0.5	--	--	--	--	--	--	--	--	1.2
MW-83-090	12/16/21	N	--	3.1	--	--	--	--	--	--	--	--	5
MW-83-180	12/16/21	N	--	0.54	--	--	--	--	--	--	--	--	0.55
MW-83-225	12/16/21	N	--	<0.5	--	--	--	--	--	--	--	--	0.55
MW-83-245	12/16/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-84-057	11/29/21	N	--	3.7	--	--	--	--	--	--	--	--	8.7
MW-84-095	11/29/21	N	--	0.86	--	--	--	--	--	--	--	--	1.3
MW-84-132	11/29/21	N	--	1.1	--	--	--	--	--	--	--	--	1.1
MW-84-193	11/29/21	N	--	1.1	--	--	--	--	--	--	--	--	0.93
MW-85-129	11/30/21	N	--	9.6	--	--	--	--	--	--	--	--	16
MW-85-217	11/30/21	N	--	3.4	--	--	--	--	--	--	--	--	2
MW-85-237	11/30/21	N	--	2.4	--	--	--	--	--	--	--	--	1.6
MW-86-030	12/14/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-86-066	12/14/21	N	--	<0.5	--	--	--	--	--	--	--	--	0.53
MW-86-120	12/14/21	N	--	<0.5	--	--	--	--	--	--	--	--	0.41
MW-86-140	12/14/21	N	--	<0.5	--	--	--	--	--	--	--	--	0.78
MW-87-109	11/30/21	N	--	2.9	--	--	--	--	--	--	--	--	5.1
MW-87-139	11/30/21	N	--	1.1	--	--	--	--	--	--	--	--	1.3
MW-87-192	11/30/21	N	--	1.3	--	--	--	--	--	--	--	--	1.1
MW-87-275	11/30/21	N	--	1.1	--	--	--	--	--	--	--	--	1
MW-88-107	12/08/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-89-183	12/06/21	N	--	2.5	--	--	--	--	--	--	--	--	2.8
MW-89-273	12/06/21	N	--	3.7	--	--	--	--	--	--	--	--	2.7
MW-90-031	12/08/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
MW-91-045	12/14/21	N	--	<10 J	--	--	--	--	--	--	0.303	--	--
MW-91-120	12/14/21	N	--	<100 J	--	--	--	--	--	--	1.3	--	--
MW-91-170	12/14/21	N	--	<100 J	--	--	--	--	--	--	0.655	--	--
MW-91-320	12/14/21	N	--	<100 J	--	--	--	--	--	--	<2	--	--
MW-92-037	12/14/21	N	--	<10 J	--	--	--	--	--	--	<0.1	--	--
MW-92-072	12/14/21	N	--	<10 J	--	--	--	--	--	--	0.469	--	--
MW-92-102	12/14/21	N	--	<10 J	--	--	--	--	--	--	1.23	--	--
MW-92-122	12/14/21	N	--	<100 J	--	--	--	--	--	--	<0.5	--	--
MW-93-050	12/13/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-93-213	12/13/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-95-113	12/08/21	N	--	5.3	--	--	--	--	--	--	--	--	6.1

Table 3.4
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Location ID	Sample Date	Sample Type	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-82-046	12/16/21	N	--	--	1.8
MW-82-046	12/16/21	FD	--	--	1.8
MW-82-112	12/16/21	N	--	--	<1
MW-82-168	12/16/21	N	--	--	<1
MW-82-198	12/16/21	N	--	--	<1
MW-83-090	12/16/21	N	--	--	--
MW-83-180	12/16/21	N	--	--	--
MW-83-225	12/16/21	N	--	--	--
MW-83-245	12/16/21	N	--	--	--
MW-84-057	11/29/21	N	--	--	--
MW-84-095	11/29/21	N	--	--	--
MW-84-132	11/29/21	N	--	--	--
MW-84-193	11/29/21	N	--	--	--
MW-85-129	11/30/21	N	--	--	--
MW-85-217	11/30/21	N	--	--	--
MW-85-237	11/30/21	N	--	--	--
MW-86-030	12/14/21	N	--	--	1.5
MW-86-066	12/14/21	N	--	--	<1
MW-86-120	12/14/21	N	--	--	<1
MW-86-140	12/14/21	N	--	--	<1
MW-87-109	11/30/21	N	--	--	--
MW-87-139	11/30/21	N	--	--	--
MW-87-192	11/30/21	N	--	--	--
MW-87-275	11/30/21	N	--	--	--
MW-88-107	12/08/21	N	--	--	--
MW-89-183	12/06/21	N	--	--	--
MW-89-273	12/06/21	N	--	--	--
MW-90-031	12/08/21	N	--	--	1.8
MW-91-045	12/14/21	N	--	--	--
MW-91-120	12/14/21	N	--	--	--
MW-91-170	12/14/21	N	--	--	--
MW-91-320	12/14/21	N	--	--	--
MW-92-037	12/14/21	N	--	--	--
MW-92-072	12/14/21	N	--	--	--
MW-92-102	12/14/21	N	--	--	--
MW-92-122	12/14/21	N	--	--	--
MW-93-050	12/13/21	N	--	--	--
MW-93-213	12/13/21	N	--	--	--
MW-95-113	12/08/21	N	--	--	--

Table 3.4
Fourth Quarter 2021 Monitoring Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)
MW-95-157	12/08/21	N	8.6	11	<0.1	--	--	--	--	--	--	0.0057 J	3.8
MW-96-045	12/15/21	N	<1	1.5	--	--	--	--	--	--	--	--	--
MW-96-045	12/15/21	FD	<1	<1	--	--	--	--	--	--	--	--	--
MW-96-217	12/15/21	N	<1	<1	--	--	--	--	--	--	--	--	--
MW-97-042	12/13/21	N	4.4	6	--	--	--	--	--	--	--	--	--
MW-97-202	12/13/21	N	<1	<1	--	--	--	--	--	--	--	--	--
MW-98-055	12/16/21	N	240	230	2.8	--	--	--	--	--	--	0.0013	--
MW-98-077	12/16/21	N	340	320	3	--	--	--	--	--	--	0.0028	--
OW-01D	12/15/21	N	0.5	2.8	<0.1	32	1.1 J	140	--	--	24 J	0.0047	23
OW-01M	12/15/21	N	1.2	4.1	<0.1	63	1 J	150	--	--	24 J	0.0048	24
OW-01S	12/15/21	N	8.4	31	<0.1	110	0.88 J	350	--	--	54 J	0.026	8.9
OW-02D	12/15/21	N	0.28	1.8	<0.1	24	1.1 J	190	--	--	31 J	0.0017	24
OW-02M	12/15/21	N	1.1	1.6	<0.1	38	1.1 J	150	--	--	25 J	<0.0005	23
OW-02S	12/15/21	N	15	15	<0.1	130	0.59 J	130	--	--	16 J	0.00083	21
OW-05D	12/01/21	N	0.42	1.9	<0.1 J	28	1.1	200	--	--	31	<0.0005	29
OW-05M	12/01/21	N	0.59	1.1	<0.1 J	31	1.1	150	--	--	24	<0.0005	26
OW-05S	12/01/21	N	9.7	10	<0.1 J	130	0.34	430	--	--	69	<0.0005	7.6
PGE-08	12/08/21	N	<1	<1	<0.1	--	--	--	--	--	--	0.47 J	--
PT5D	12/16/21	N	31	29	1.5	20	--	--	--	<0.02	--	0.031	100
PT5M	12/16/21	N	<0.2	<1	1.7	23	--	--	--	<0.02	--	0.94	11
PT5S	12/16/21	N	<0.2	<1	13	84	--	--	--	0.65 J	--	0.21	6.1
PT8D	12/10/21	N	200	200	<0.1	--	--	--	--	--	--	0.27	--
PT9D	12/10/21	N	7,000	6,100	<0.1	--	--	--	--	--	--	0.0035	90
PT9M	12/10/21	N	64	87	<0.1	--	--	--	--	--	--	0.11	7.2
PT9S	12/10/21	N	34	35	<0.1	--	--	--	--	--	--	0.32	8.6
R-19	11/18/21	N	<0.2	<1	3.1 J	--	--	--	--	--	--	0.00056	4.4
R-28	11/17/21	N	<0.2	<1	3.3	--	--	--	--	--	--	0.00095	4.7 J
R-63	11/17/21	N	<0.2	<1	2.8	--	--	--	--	--	--	0.0018	4.4 J
RRB	11/18/21	N	<0.2	<1	2.8 J	--	--	--	--	--	--	0.024	4.5
RRB	11/18/21	FD	<0.2	<1	2.9 J	--	--	--	--	--	--	0.025	4.4
SW1	11/17/21	N	<0.2	<1	2.2	--	--	--	--	--	--	0.0069	5.6 J
SW2	11/17/21	N	<0.2	<1	2.3	--	--	--	--	--	--	0.0076	5.1 J
TW-01	11/02/21	N	1,300	1,300	1.1	38 J	1.4	280	--	<0.02	26 J	<0.0005	32
TW-01	11/02/21	FD	1,300	1,300	1	41 J	1.4	260	--	<0.02	25 J	<0.0005	31
TW-01	11/11/21	N	1,300	--	--	--	--	--	--	--	--	--	--
TW-01	11/15/21	N	1,300	1,300	1.7 J	--	--	240	--	--	24 J	--	32 J
TW-01	11/22/21	N	1,200	--	--	--	--	--	--	--	--	--	--
TW-01	12/02/21	N	1,200	--	--	--	--	--	--	--	--	--	--
TW-01	12/08/21	N	1,200	1,300	0.76	--	--	--	--	--	--	<0.0005 J	31

Table 3.4
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Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)
MW-95-157	12/08/21	N	--	6.5	--	--	--	--	--	--	--	--	9.5
MW-96-045	12/15/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-96-045	12/15/21	FD	--	--	--	--	--	--	--	--	--	--	--
MW-96-217	12/15/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-97-042	12/13/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-97-202	12/13/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-98-055	12/16/21	N	--	--	--	--	--	--	--	--	--	--	--
MW-98-077	12/16/21	N	--	--	--	--	--	--	--	--	--	--	--
OW-01D	12/15/21	N	17 J	8.2	1,400	3.2	86	--	2,000	2.3	--	--	7 J
OW-01M	12/15/21	N	15 J	8.2	1,500	3	110	--	2,000	2.1	--	--	7.8 J
OW-01S	12/15/21	N	17 J	2.9	1,000	2.5	270	--	1,700	1.4	--	--	3 J
OW-02D	12/15/21	N	21 J	8.4	1,600	1.9	86	--	2,100	3.1	--	--	7.4 J
OW-02M	12/15/21	N	14 J	7.8	1,600	2.8	97	--	2,000	2.5	--	--	7.5 J
OW-02S	12/15/21	N	11 J	2	640	3.4	58	--	1,100	2.7	--	--	3.2 J
OW-05D	12/01/21	N	17 J	9.3	1,300	2.4	76	--	2,000	2.8	--	--	7.8
OW-05M	12/01/21	N	15 J	9.2	1,400	1.8	79	--	1,900	3	--	--	9
OW-05S	12/01/21	N	17 J	2.4	660	2	48	--	1,700	1.7	--	--	2.8
PGE-08	12/08/21	N	--	--	--	--	--	--	--	--	--	--	--
PT5D	12/16/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
PT5M	12/16/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
PT5S	12/16/21	N	--	<0.5	--	--	--	--	--	--	--	--	<0.1
PT8D	12/10/21	N	--	--	--	--	--	--	--	--	--	--	--
PT9D	12/10/21	N	--	4.6	--	--	--	--	--	--	--	--	6.4
PT9M	12/10/21	N	--	5.7	--	--	--	--	--	--	--	--	7.2
PT9S	12/10/21	N	--	6	--	--	--	--	--	--	--	--	5
R-19	11/18/21	N	--	1.9	--	--	--	--	--	--	--	--	0.31
R-28	11/17/21	N	--	2	--	--	--	--	--	--	--	--	0.3
R-63	11/17/21	N	--	1.7	--	--	--	--	--	--	--	--	0.3
RRB	11/18/21	N	--	1.6	--	--	--	--	--	--	--	--	0.2
RRB	11/18/21	FD	--	1.5	--	--	--	--	--	--	--	--	0.22
SW1	11/17/21	N	--	1.1	--	--	--	--	--	--	--	--	<0.05
SW2	11/17/21	N	--	0.99	--	--	--	--	--	--	--	--	<0.05
TW-01	11/02/21	N	18 J	13	1,300 J	13	--	<0.2	1,800	3.8	--	--	11
TW-01	11/02/21	FD	18 J	14	1,600 J	13	--	<0.2	1,700	4.1	--	--	11
TW-01	11/11/21	N	--	--	--	--	--	--	--	--	--	--	--
TW-01	11/15/21	N	18 J	13	1,200	--	--	--	1,800	--	--	--	11
TW-01	11/22/21	N	--	--	--	--	--	--	--	--	--	--	--
TW-01	12/02/21	N	--	--	--	--	--	--	--	--	--	--	--
TW-01	12/08/21	N	--	13	--	--	--	--	--	--	--	--	11

Table 3.4
Fourth Quarter 2021 Monitoring Results
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Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-95-157	12/08/21	N	--	--	--
MW-96-045	12/15/21	N	--	--	--
MW-96-045	12/15/21	FD	--	--	--
MW-96-217	12/15/21	N	--	--	--
MW-97-042	12/13/21	N	--	--	--
MW-97-202	12/13/21	N	--	--	--
MW-98-055	12/16/21	N	--	--	--
MW-98-077	12/16/21	N	--	--	--
OW-01D	12/15/21	N	510	4,100	--
OW-01M	12/15/21	N	510	4,100	--
OW-01S	12/15/21	N	360	4,000	--
OW-02D	12/15/21	N	500	4,100	--
OW-02M	12/15/21	N	510	4,100	--
OW-02S	12/15/21	N	180	2,200	--
OW-05D	12/01/21	N	500	4,000	--
OW-05M	12/01/21	N	510	4,000	--
OW-05S	12/01/21	N	360	4,000	--
PGE-08	12/08/21	N	--	--	--
PT5D	12/16/21	N	--	--	<1
PT5M	12/16/21	N	--	--	<1
PT5S	12/16/21	N	--	--	3
PT8D	12/10/21	N	--	--	--
PT9D	12/10/21	N	--	--	--
PT9M	12/10/21	N	--	--	--
PT9S	12/10/21	N	--	--	--
R-19	11/18/21	N	--	--	--
R-28	11/17/21	N	--	--	--
R-63	11/17/21	N	--	--	--
RRB	11/18/21	N	--	--	--
RRB	11/18/21	FD	--	--	--
SW1	11/17/21	N	--	--	--
SW2	11/17/21	N	--	--	--
TW-01	11/02/21	N	510	3,900	<1
TW-01	11/02/21	FD	510	4,000	<1
TW-01	11/11/21	N	--	--	--
TW-01	11/15/21	N	500	3,800	--
TW-01	11/22/21	N	--	--	--
TW-01	12/02/21	N	--	--	--
TW-01	12/08/21	N	--	--	--

Table 3.4
Fourth Quarter 2021 Monitoring Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
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Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)
TW-03D	11/02/21	N	400	390	--	--	--	230 J	--	<0.02	30	0.01	--
TW-03D	12/16/21	N	400	390	<0.1	36	--	--	--	<0.02	--	0.013	22
TW-04	12/06/21	N	9.1	9.3 J	--	--	--	--	--	--	--	--	--
TW-05	12/13/21	N	14	15	<0.1	--	--	--	--	--	--	0.0014	--

Abbreviations:
-- = not applicable or not available
< = not detected at reporting limit, as shown
N = primary sample
FD = field duplicate
J = estimated concentration
mg/L= milligram(s) per liter
µg/L = microgram(s) per liter

Table 3.4
Fourth Quarter 2021 Monitoring Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)
TW-03D	11/02/21	N	--	--	1,400 J	--	150	--	2,100	--	--	--	2.6
TW-03D	12/16/21	N	--	3.4	--	--	--	<0.23	--	--	--	<5	2.4
TW-04	12/06/21	N	--	--	--	--	--	--	--	--	--	--	--
TW-05	12/13/21	N	--	--	--	--	--	--	--	--	--	--	--

Abbreviations:
-- = not applicable or not available
< = not detected at reporting limit, as shown
N = primary sample
FD = field duplicate
J = estimated concentration
mg/L= milligram(s) per liter
µg/L = microgram(s) per liter

Table 3.4
Fourth Quarter 2021 Monitoring Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
TW-03D	11/02/21	N	480	4,500	--
TW-03D	12/16/21	N	500	--	<1
TW-04	12/06/21	N	--	--	--
TW-05	12/13/21	N	--	--	--

Abbreviations:
-- = not applicable or not available
< = not detected at reporting limit, as shown
N = primary sample
FD = field duplicate
J = estimated concentration
mg/L= milligram(s) per liter
µg/L = microgram(s) per liter

Table 3.5
In-Situ Byproduct Baseline Concentrations
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Monitoring Well ID	Program	Dissolved Arsenic		Dissolved Manganese			Dissolved Iron			Dissolved Barium		Notes
		Date	µg/L	Date	µg/L	mg/L	Date	µg/L	mg/L	Date	µg/L	
MW-20-070	Dose Response	3/12/2013	2.70	6/15/2005	8	0.0077	11/27/2012	62.4	0.0624	9/24/2004	59.1	
MW-20-100	Dose Response	11/29/2012	2.9	9/1/2000	56	0.056	12/8/2017	390	0.390	11/30/2001	32	Excluded 1999 data
MW-20-130	Dose Response	6/15/2005	7.42	4/27/2018	4	0.0036	12/4/2020	92	0.092	12/15/2021	24	Excluded 1999 data
MW-21	Dose Response	10/2/2008	4.47	6/12/2003	1,040	1.040	9/23/2009	170	0.170	12/16/20021	41	
MW-22	Downgradient	9/29/2009	28	12/10/2012	7,200	7.2	12/11/2019	21,000	21	12/11/2019	420	
MW-23-060	Remedy Compliance	9/12/2012	5.9	12/11/2018	6	0.006	11/11/2013	44	0.044	2/4/2012	130	Excluded 2009 data
MW-23-080	Remedy Compliance	12/8/2020	5.9	12/11/2018	6	0.006	12/9/2019	59	0.059	12/12/2011	69	Excluded 2009 data
MW-26	Dose Response	5/7/2013	2.2	11/30/2001	120	0.120	12/11/2017	110	0.110	11/30/2001	170	Excluded 1999 data
MW-27-020	Downgradient	12/10/2019	4.8	11/29/2001	360	0.360	12/10/2019	2,900	2.9	11/29/2001	260	
MW-27-060	Downgradient	12/3/2015	13	12/3/2015	350	0.350	3/7/2006	2,620	2.6	12/1/2021	70	Excluded 2005 data
MW-27-085	Downgradient	12/8/2009	14	10/3/2008	964	0.964	3/6/2006	1,890	1.9	12/1/2021	43	Excluded 2005 data
MW-28-025	Downgradient	9/24/2009	2.4	11/29/2001	410	0.410	12/8/2010	63	0.1	11/29/2001	240	
MW-28-090	Downgradient	12/9/2009	7.7	6/15/2005	664	0.664	12/14/2018	1,000	1.0	12/8/2021	27	Excluded 2004 data
MW-30-030	Downgradient	9/24/2009	19	11/29/2001	1,300	1.3	3/13/2006	5,370	5.4	11/29/2001	1,100	
MW-30-050	Downgradient	12/7/2010	9.7	12/3/2021	260	0.260	12/3/2015	120	0.1	12/3/2021	21	Excluded 2004 data
MW-31-060	Dose Response	10/6/2005	1.96	11/29/2001	7	0.0066	12/7/2015	110	0.110	12/16/2021	57	Excluded 1999 data
MW-31-135	Dose Response	5/1/2007	4.64	6/10/2004	130	0.130	12/10/2018	61	0.061	6/10/2004	67	
MW-32-020	Downgradient	9/22/2009	65	10/3/2008	2,850	2.850	10/1/2007	21,000	21	6/10/2003	5,140	
MW-32-035	Downgradient	9/22/2009	53	10/1/2007	4,300	4.300	10/3/2008	24,100	24.1	11/30/2021	160	
MW-34-055	Downgradient	10/4/2006	4.83	6/4/2004	290	0.290	12/14/2005	505	0.505	6/8/2004	83	Excluded 2003 data
MW-34-080	Downgradient	12/9/2009	7.3	6/8/2004	300	0.300	12/1/2021	350	0.35	9/23/2004	54	Excluded 2003 data
MW-34-100	Downgradient	12/9/2009	16	10/2/2017	230	0.230	12/10/2019	470	0.47	5/3/2006	26	
MW-36-020	Downgradient	9/23/2009	3.3	10/3/2007	642	0.642	10/3/2007	2,750	2.75	6/15/2004	128	
MW-36-040	Downgradient	9/30/2009	7.7	3/7/2006	699	0.699	3/7/2006	3,920	3.92	12/3/2021	41	
MW-36-050	Downgradient	12/15/2020	5.6	3/7/2006	517	0.517	3/7/2006	570	0.57	12/3/2021	25	Excluded 2004 data
MW-36-070	Downgradient	9/22/2009	10	12/6/2018	1,600	1.600	12/6/2018	570	0.57	12/3/2021	33	Excluded 2004 data
MW-36-090	Downgradient	12/15/2014	25	4/27/2017	170	0.170	10/3/2008	130	0.13	12/3/2021	36	Excluded 2004 data
MW-36-100	Downgradient	9/23/2009	14	12/6/2018	390	0.390	5/3/2021	260	0.26	12/3/2021	43	Excluded 2004 data
MW-39-040	Downgradient	12/16/2014	21	10/8/2007	1,590	1.590	10/8/2007	12,400	12.40	12/7/2021	74	
MW-39-050	Downgradient	12/7/2021	16	12/6/2018	190	0.190	12/11/2020	150	0.15	12/7/2021	73	
MW-39-060	Downgradient	12/3/2012	7.6	12/11/2020	110	0.110	12/11/2020	120	0.12	5/2/2006	88	
MW-39-070	Downgradient	12/7/2021	16	12/7/2021	120	0.120	12/11/2020	220	0.22	12/7/2021	74	
MW-39-080	Downgradient	12/7/2021	16	12/7/2021	120	0.120	12/5/2019	120	0.12	12/7/2021	74	
MW-39-100	Downgradient	4/21/2015	4.1	12/4/2015	31	0.031	10/10/2007	56	0.06	12/7/2021	27	
MW-42-030	Downgradient	9/23/2009	6.5	10/4/2007	737	0.737	10/4/2007	5,390	5.39	11/30/2021	160	Excluded 2005 data
MW-42-055	Downgradient	12/6/2016	29	10/3/2008	1,020	1.020	10/3/2008	2,240	2.24	11/30/2021	150	Excluded 2005 and 2006 data
MW-42-065	Downgradient	12/4/2017	14	10/3/2008	2,370	2.370	10/3/2007	360	0.36	11/30/2021	69	Excluded 2005 and 2006 data
MW-43-025	Downgradient	12/8/2020	32	12/8/2020	360	0.360	12/8/2020	5,400.0	5.40	11/30/2021	75	Excluded 2005 data
MW-43-075	Downgradient	10/1/2009	17	12/9/2016	930	0.930	12/5/2018	5,500	5.50	11/30/2021	42	Excluded 2005 and 2006 data
MW-43-090	Downgradient	10/1/2009	25	10/2/2007	1,260	1.260	10/2/2007	9,260	9.26	11/30/2021	55	Excluded 2005 and 2006 data
MW-44-070	Downgradient	12/4/2015	6.6	10/4/2007	316	0.316	10/4/2007	656	0.656	12/8/2021	31	Excluded 2006 data
MW-44-115	Downgradient	5/8/2008	6.93	9/27/2012	92	0.0917	12/4/2015	250	0.250	10/7/2008	26	
MW-44-125	Downgradient	4/24/2019	5.9	5/3/2007	777	0.777	12/2/2013	700	0.70	5/3/2007	71	
MW-45-095a	Downgradient	9/29/2009	10	12/1/2021	260	0.260	5/4/2007	129	0.13	5/4/2007	20	
MW-46-175	Downgradient	2/25/2013	2.9	12/13/2018	25	0.025	12/8/2021	200	0.20	12/8/2021	31	
MW-46-205	Downgradient	12/8/2021	ND (0.1)	12/15/2020	53	0.053	12/8/2021	68	0.068	12/8/2021	33	
MW-51	Dose Response	11/28/2012	4.9	5/1/2018	5	0.0045	12/3/2020	81	0.081	12/15/2021	43	
MW-52D	Downgradient	12/10/2009	27	8/8/2007	319	0.319	12/5/2016	5,400	5.40	11/30/2021	37	

Table 3.5
In-Situ Byproduct Baseline Concentrations
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Monitoring Well ID	Program	Dissolved Arsenic		Dissolved Manganese			Dissolved Iron			Dissolved Barium		Notes
		Date	µg/L	Date	µg/L	mg/L	Date	µg/L	mg/L	Date	µg/L	
MW-52M	Downgradient	12/10/2009	21	8/8/2007	316	0.316	12/2/2015	2,000	2.00	11/30/2021	54	
MW-52S	Downgradient	12/10/2009	12	11/13/2013	2,100	2.100	12/8/2021	27,000	27	11/30/2021	1,400	
MW-53D	Downgradient	12/10/2009	32	3/13/2008	2,220	2.200	12/12/2019	540.00	0.54	11/30/2021	44	Excluded 2007 data
MW-53M	Downgradient	12/10/2009	25	4/27/2021	630	0.630	12/8/2020	550.00	0.55	11/30/2021	58	
MW-53S	Downgradient	11/30/2021	ND (0.1)	11/30/2021	1,200	1.200	11/30/2021	5,400.00	5.40	11/30/2021	200	
MW-54-085	Remedy Compliance	6/19/2020	5.19	12/14/2010	1,190	1.19	9/22/2009	1,560.00	1.560	6/8/2021	57	
MW-54-140	Remedy Compliance	12/13/2017	3.51	9/22/2009	478	0.478	10/1/2008	ND (500)	ND (5)	6/8/2021	43	Excluded 2008 data
MW-54-195	Remedy Compliance	12/13/2017	1.36	9/22/2009	706	0.706	12/13/2017	149.00	0.149	6/8/2021	38	Excluded 2008 data
MW-55-045	Remedy Compliance	6/9/2021	8.17	11/21/2013	1,090	1.09	9/22/2009	128.00	0.128	4/3/2012	770	Excluded 2008 data
MW-55-120	Remedy Compliance	2/24/2016	6.4	9/22/2009	91	0.091	10/2/2008	ND (500)	ND (5)	4/3/2012	60	Excluded 2008 data
MW-56D	Remedy Compliance	6/9/2021	ND (2.5)	12/10/2019	947	0.947	11/14/2013	3,000	3	6/9/2021	41	
MW-56M	Remedy Compliance	6/9/2021	ND (2.5)	12/13/2017	784	0.784	4/29/2008	3,980	3.980	6/9/2021	49	
MW-56S	Remedy Compliance	6/9/2021	ND (2.5)	12/14/2021	1,240	1.24	12/14/2016	9,010	9.010	6/9/2021	68	
MW-57-050	Remedy Compliance	--	--	--	--	--	--	--	--	--	--	
MW-57-070	Remedy Compliance	5/3/2012	1.6	12/15/2010	25	0.025	12/6/2019	110	0.110	12/15/2011	150	Excluded 2009 data
MW-57-185	Remedy Compliance	12/13/2016	17	12/9/2010	580	0.580	12/9/2009	21	0.021	12/13/2011	55	Excluded 2009 data - arsenic, barium and manganese
MW-58-065	Remedy Compliance	--	--	--	--	--	--	--	--	--	--	
MW-58-115	Remedy Compliance	12/16/2009	18	7/22/2009	2,500	2.5	12/16/2009	190	0.190	12/16/2009	18	
MW-58-205	Remedy Compliance	12/16/2009	41	7/22/2009	310	0.310	7/22/2009	57	0.057	7/22/2009	120	
MW-58BR	Remedy Compliance	9/30/2015	2.9	12/17/2013	660	0.660	12/11/2017	230	0.230	--	--	Excluded 2010 data
MW-60-125	Remedy Compliance	5/6/2013	2	12/16/2010	35	0.035	12/6/2017	230	0.230	2/15/2012	42	Excluded 2009 data
MW-60BR-245	Remedy Compliance	9/25/2018	9.1	12/14/2017	42	0.042	12/14/2017	560	0.560	2/16/2012	69	Excluded 2011 data
MW-61-110	Remedy Compliance	2/25/2013	4.5	9/27/2012	888	0.888	12/15/2010	130	0.130	12/14/2011	93	Excluded 2009 data
MW-62-065	Remedy Compliance	10/1/2019	1.8	9/29/2011	13	0.013	12/7/2018	54	0.054	12/13/2011	39	Excluded 2009 data
MW-62-110	Remedy Compliance	12/13/2018	31	12/13/2018	250	0.250	12/2/2020	350	0.350	2/16/2012	41	Excluded 2009 data
MW-62-190	Remedy Compliance	9/29/2010	9.5	12/16/2010	1,300	1.30	12/2/2020	1,400	1.400	2/16/2012	72	Excluded 2009 data
MW-63-065	Remedy Compliance	12/4/2015	1.9	11/7/2012	140	0.140	12/4/2015	1,900	1.900	12/12/2011	40	Excluded 2009 data
MW-64-150	Remedy Compliance	5/4/2010	12.9	9/29/2009	1,300	1.30	12/16/2009	260	0.260	--	--	Excluded 2009 data - arsenic
MW-64-205	Remedy Compliance	5/4/2010	8.5	9/29/2009	810	0.810	12/16/2009	170	0.170	--	--	Excluded 2009 data - arsenic
MW-64-260	Remedy Compliance	5/4/2010	5.2	12/16/2009	1,300	1.30	7/22/2009	130	0.130	--	--	Excluded 2009 data - arsenic
MW-64BR	Remedy Compliance	5/18/2015	6	5/18/2015	1,400	1.40	11/30/2020	710	0.710	--	--	Excluded 2009 data
MW-70-105	Remedy Compliance	9/12/2012	6.2	2/16/2012	230	0.230	12/14/2016	53	0.053	12/12/2011	84	
MW-70BR-225	Remedy Compliance	5/7/2013	3.1	5/17/2021	14	0.014	12/11/2017	110	0.110	12/15/2011	47	
MW-70BR-287	Remedy Compliance	9/28/2020	2.3	8/21/2020	88	0.088	9/28/2020	200	0.200	12/2/2020	140	
MW-71-035	Dose Response	5/6/2015	10	12/4/2015	5,200	5.2	12/4/2015	13,000	13	11/3/2011	130	
MW-72-080	Remedy Compliance	8/22/2019	13	5/1/2012	210	0.210	12/3/2020	450	0.450	2/13/2012	71	Excluded 2011 data
MW-72BR-200	Remedy Compliance	12/12/2016	17	4/28/2020	200	0.200	12/8/2015	34	0.034	7/24/2012	130	
MW-73-080	Remedy Compliance	2/10/2015	2.9	12/12/2016	89 J	0.089	12/6/2017	140	0.140	10/22/2011	110	
MW-76-039	Dose Response	10/21/2020	1.3	9/29/2020	220	0.220	2/20/2020	2,000	2.0	7/20/2020	94	
MW-76-156	Dose Response	4/21/2020	2.5	6/16/2020	280	0.28	4/21/2020	170	0.170	9/29/2020	69	
MW-76-181	Dose Response	8/18/2020	1.7	1/29/2020	930	0.93	4/21/2020	80	0.080	4/21/2020	100	
MW-76-218	Dose Response	5/26/2020	5.1	8/18/2021	390	0.39	2/20/2020	180	0.180	6/16/2020	100	
MW-77-046	Downgradient	12/2/2020	3.6	8/19/2020	460	0.460	12/2/2021	940	0.94	12/2/2021	95	
MW-77-102	Downgradient	12/2/2020	1.3	2/18/2020	64	0.064	8/19/2020	82	0.082	2/18/2020	51	
MW-77-158	Downgradient	2/18/2020	3.2	2/18/2020	87	0.087	12/2/2021	48	0.048	2/18/2020	54 J	
MW-77-187	Downgradient	8/19/2020	4.4	5/26/2020	110	0.110	12/2/2021	50	0.050	2/18/2020	53 J	
MW-78-070	Dose Response	12/3/2020	1.40	8/18/2020	5.4	0.0054	5/21/2020	100	0.100	12/15/2021	40	
MW-78-142	Dose Response	2/18/2021	4.3	5/21/2020	25	0.025	5/21/2020	130	0.130	5/21/2020	36	

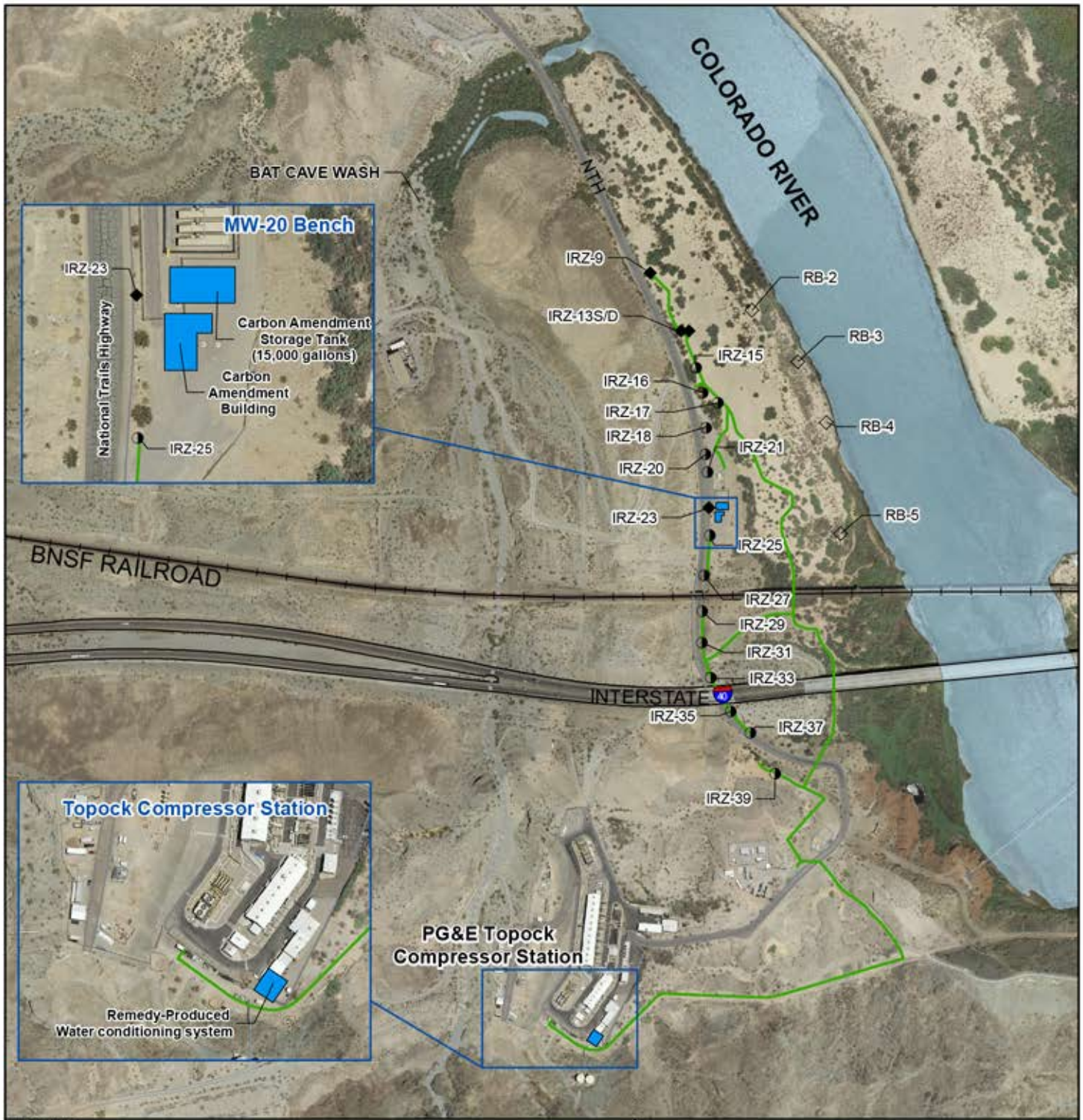
Table 3.5
In-Situ Byproduct Baseline Concentrations
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Monitoring Well ID	Program	Dissolved Arsenic		Dissolved Manganese			Dissolved Iron			Dissolved Barium		Notes
		Date	µg/L	Date	µg/L	mg/L	Date	µg/L	mg/L	Date	µg/L	
MW-79-058	Dose Response	2/21/2020	2.5	5/29/2020	470	0.470	2/21/2020	2,600	2.6	5/29/2020	260	
MW-79-102	Dose Response	2/18/2021	4.8	5/29/2020	54	0.054	2/21/2020	65	0.065	5/29/2020	72	
MW-80-057	Dose Response	12/3/2020	3.3	8/18/2020	80	0.080	5/21/2020	110	0.110	5/21/2020	79	
MW-80-082	Dose Response	2/18/2021	4.2	8/18/2020	10	0.010	2/24/2020	59	0.059	5/21/2020	43	
MW-81-043	Downgradient	12/3/2020	3.4	8/18/2020	360	0.360	2/18/2020	380	0.38	2/18/2020	250 J	Excluded January 2020 data
MW-81-098	Downgradient	12/3/2020	1.0	2/18/2020	280	0.120	5/21/2020	150	0.15	2/18/2020	87 J	Excluded January 2020 data
MW-82-046	Downgradient	5/28/2020	32	5/28/2020	480	0.480	5/28/2020	6,600	6.60	2/27/2020	76 J	
MW-82-112	Downgradient	12/1/2020	2.0	5/28/2020	72	0.072	5/18/2021	110	0.11	2/27/2020	36 J	
MW-82-168	Downgradient	8/25/2020	1.9	8/17/2021	320	0.320	12/1/2020	94	0.094	5/28/2020	57	
MW-82-198	Downgradient	5/21/2020	3.9	5/21/2020	230	0.230	2/25/2021	270	0.27	5/21/2020	46	
MW-86-030	Downgradient	5/28/2020	7.8	2/24/2021	440	0.44	2/27/2020	1,400	1.40	2/27/2020	120	
MW-86-066	Downgradient	12/1/2020	2.0	2/27/2020	1,100	1.1	2/27/2020	420	0.42	12/1/2020	100	
MW-86-120	Downgradient	12/1/2020	3.1	2/27/2020	980	0.980	12/1/2020	690	0.69	2/27/2020	63	
MW-86-140	Downgradient	8/25/2020	1.4	2/27/2020	1,500	1.5	8/18/2021	530	0.53	8/25/2020	74	
MW-90-031	Downgradient	12/2/2020	3.7	2/25/2020	350	0.350	12/2/2020	9,800	9.80	2/25/2020	120	
MW-91-045	Remedy Compliance	12/14/2021	7	1/28/2020	270	0.27	12/5/2019	520	0.520	1/28/2020	320	
MW-91-120	Remedy Compliance	1/28/2020	1	8/20/2020	1,800	1.8	1/28/2020	83	0.083	5/19/2020	43	
MW-91-170	Remedy Compliance	1/28/2020	3.5	5/26/2021	310	0.310	2/26/2020	240	0.240	11/23/2019	83	
MW-91-320	Remedy Compliance	8/20/2020	6.4	6/8/2021	1,890	1.890	5/26/2021	2,000	2.000	12/5/2019	200	
MW-92-037	Remedy Compliance	8/20/2020	25	5/26/2021	57	0.057	11/19/2019	160	0.160	5/26/2021	99	
MW-92-072	Remedy Compliance	8/20/2020	19	12/14/2021	19.4	0.0194	1/28/2020	94	0.094	12/8/2020	71	
MW-92-102	Remedy Compliance	12/14/2021	18.7	5/26/2021	10	0.010	12/5/2019	200	0.200	1/28/2020	120	
MW-92-122	Remedy Compliance	12/14/2021	10.4	2/26/2020	200	0.200	1/28/2020	280	0.280	8/24/2021	100	
PT5D	Downgradient	4/7/2006	11.5	4/7/2006	1,700	1.7	4/7/2006	2,200	2.2	12/16/2021	20	
PT5M	Downgradient	4/7/2006	11.1	4/7/2006	1,770	1.77	4/7/2006	1,820	1.82	12/16/2021	23	
PT5S	Downgradient	12/16/2021	13	3/16/2006	2,440	2.44	4/7/2006	1,030	1.03	12/16/2021	84	
TW-02D	Dose Response	6/15/2005	4.53	12/4/2019	210	0.210	12/4/2019	770	0.770	6/15/2005	27.6	
TW-02S	Dose Response	12/16/2004	ND (10)	12/4/2018	90	0.090	12/12/2011	180	0.180	7/29/2004	63	
TW-03D	Dose Response	12/4/2008	ND (5.0)	9/6/2018	34	0.034	5/5/2021	180	0.180	12/16/2021	36	

Note:
1. For wells installed before 2019, the maximum historical result through December 2021 was selected. For wells installed after 2019, the maximum result between January 2020 and December 2021 was selected.

Abbreviations:
-- = not applicable or available
µg/L = micrograms per liter
ID = identification
J = estimated concentration
mg/L = milligrams per liter

Figures



LEGEND

- REMEDIATION WELL (EXTRACTION)
- REMEDIATION WELL (INJECTION)
- REMEDIATION WELL (NOT PLUMBED INTO SYSTEM CURRENTLY)
- BAT CAVE WASH
- PIPELINE
- REMEDY STRUCTURE

Notes:
1. NTH = National Trails Highway
2. IRZ = In Situ Reactive Zone

N

0 625 1,250

Feet

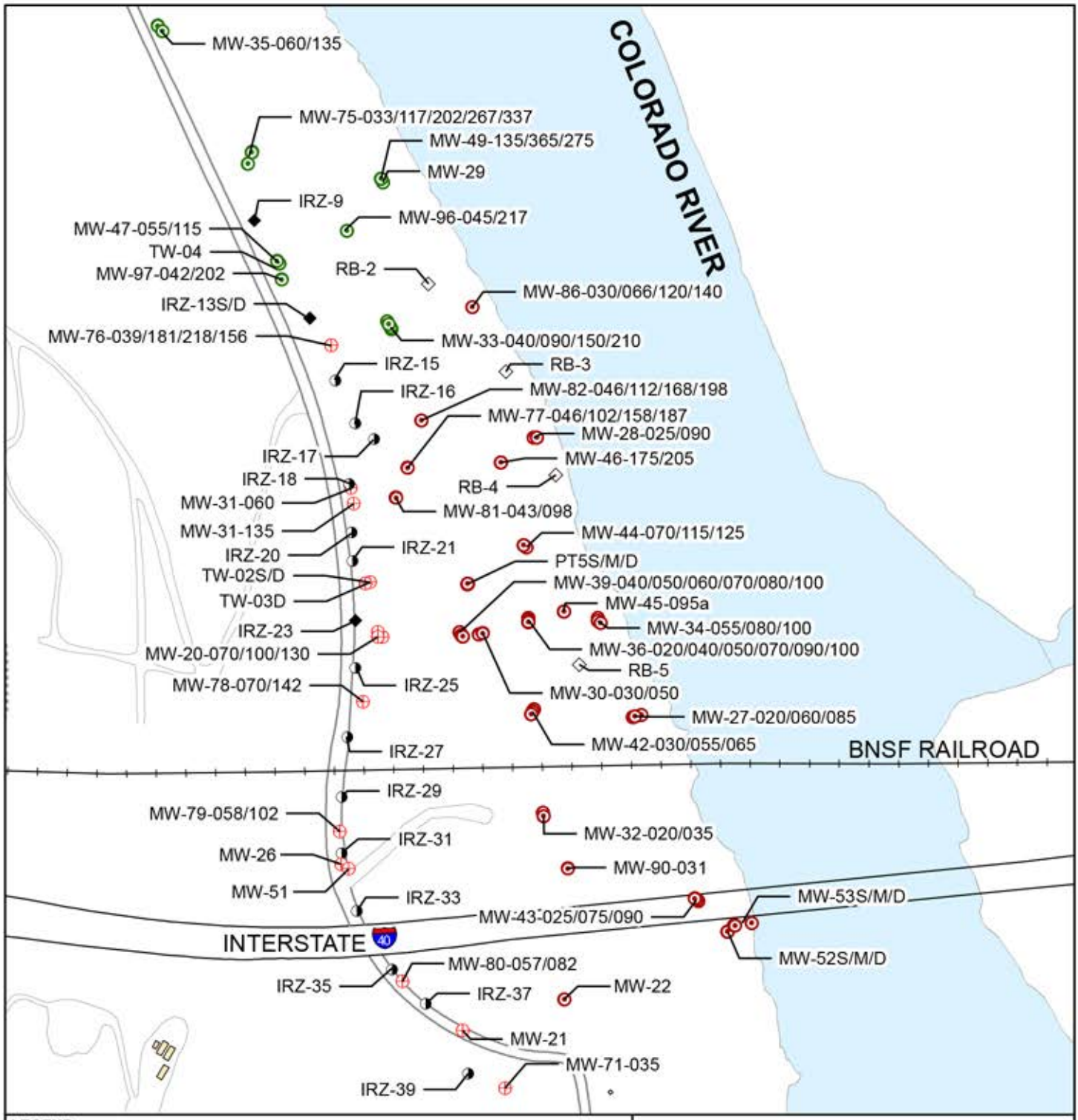
FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

PARTIAL REMEDY SYSTEM LAYOUT

ARCADIS

FIGURE
1.1

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\4Q21\FINAL\FIGURE1.1_PARTIAL REMEDY SYSTEM LAYOUT.MXD 2/23/2022 3:05:48 PM



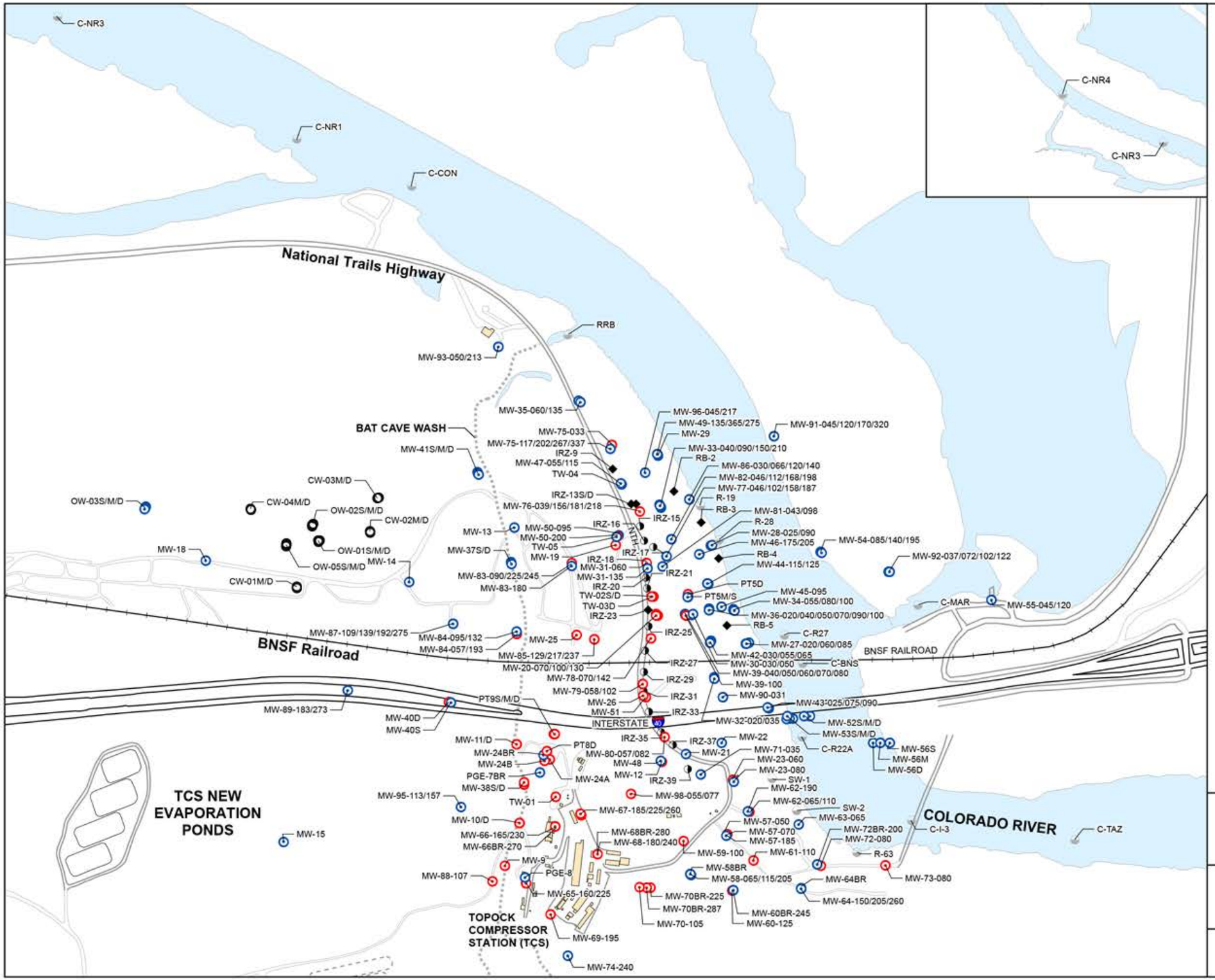
FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

PROCESS CONTROL MONITORING NETWORK

ARCADIS

FIGURE
3.1

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\4Q21\FINAL\FIGURE3.1_TOPOCK PROCESS CONTROL MONITORING WELLS.MXD 03/18/2022 2:57:49 PM



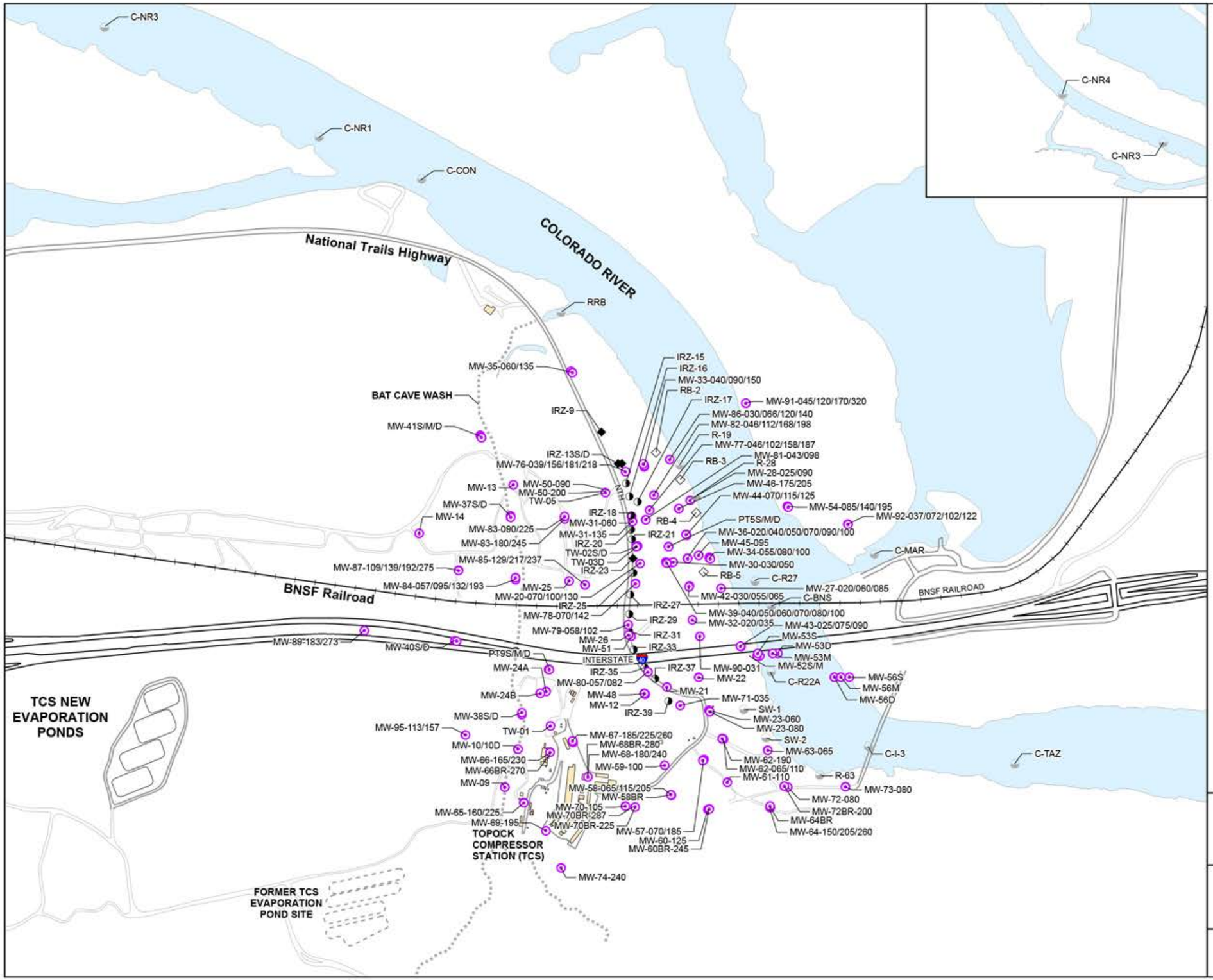
FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

REMEDY COMPLIANCE MONITORING NETWORK

ARCADIS

FIGURE 3.2

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\4Q21\FINAL\FIGURE3.2_REMEDY COMPLIANCE MONITORING NETWORK.MXD 3/16/2022 4:16:38 PM



FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

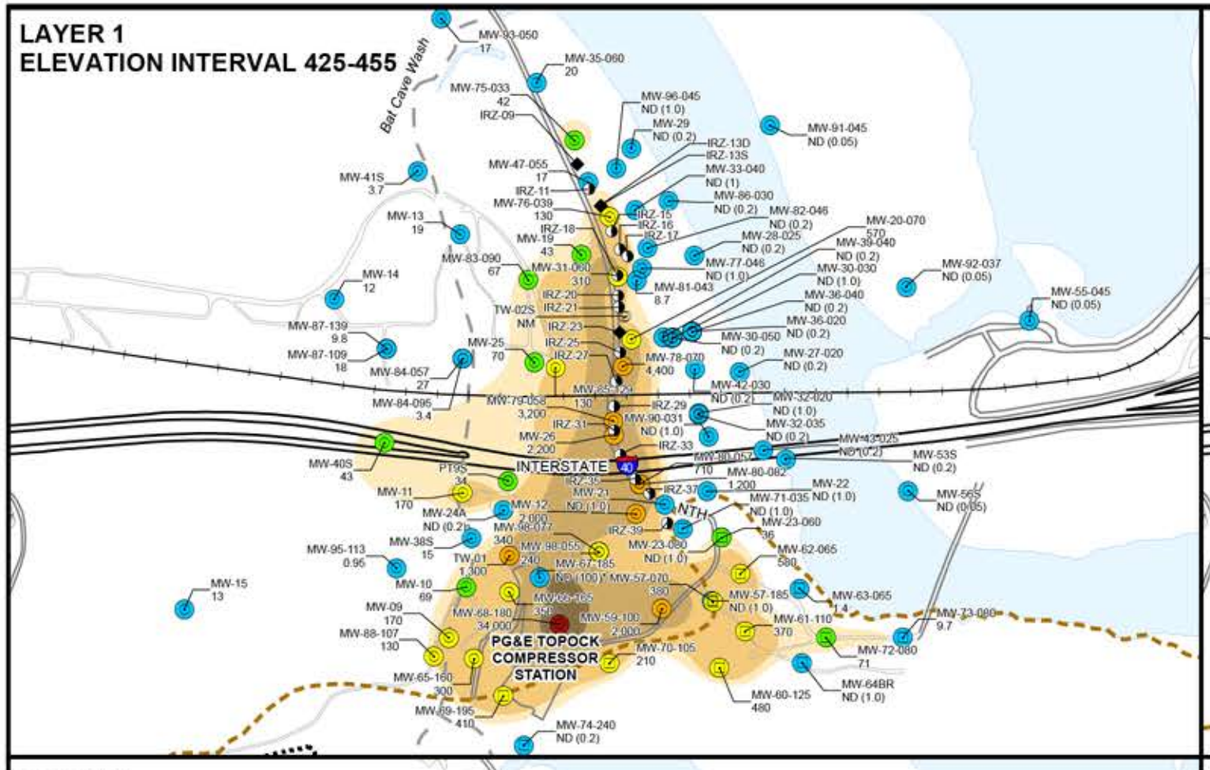
COPC MONITORING NETWORK

ARCADIS

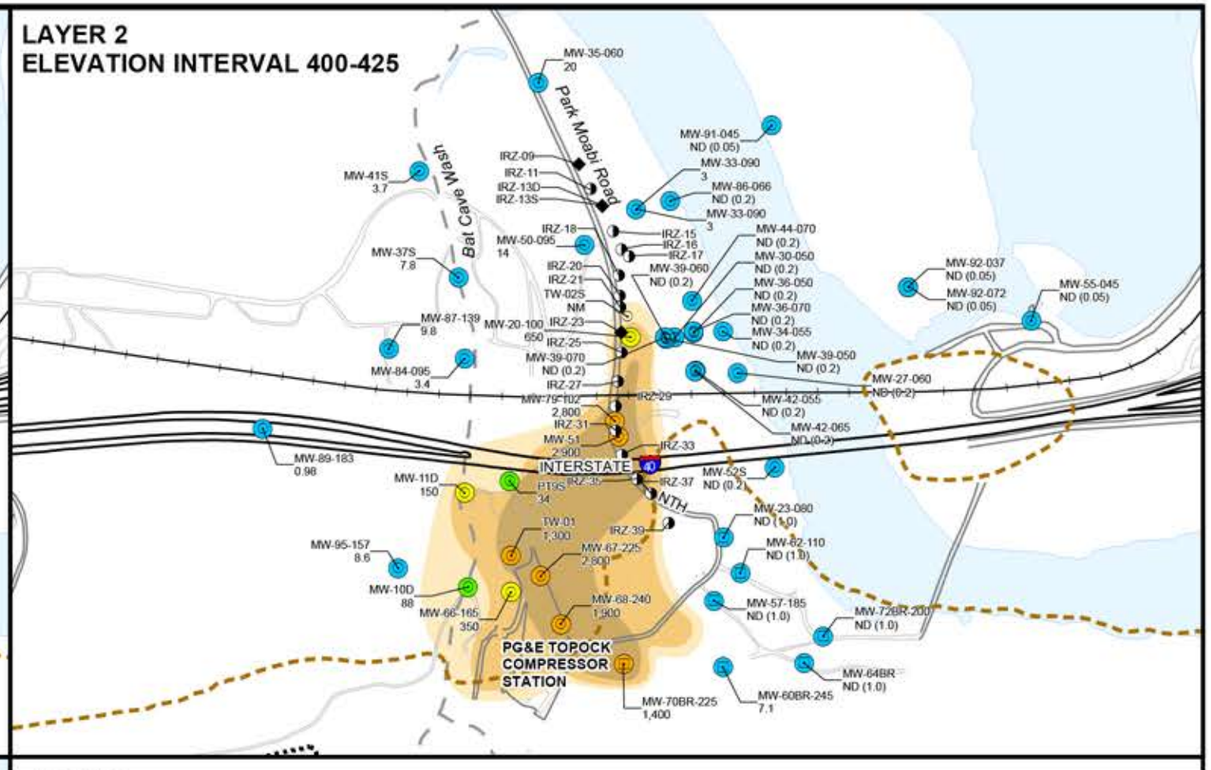
FIGURE 3.3

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\4Q21\FINAL\FIGURE3.3_COPC MONITORING NETWORK.MXD 3/21/2022 3:35:15 PM

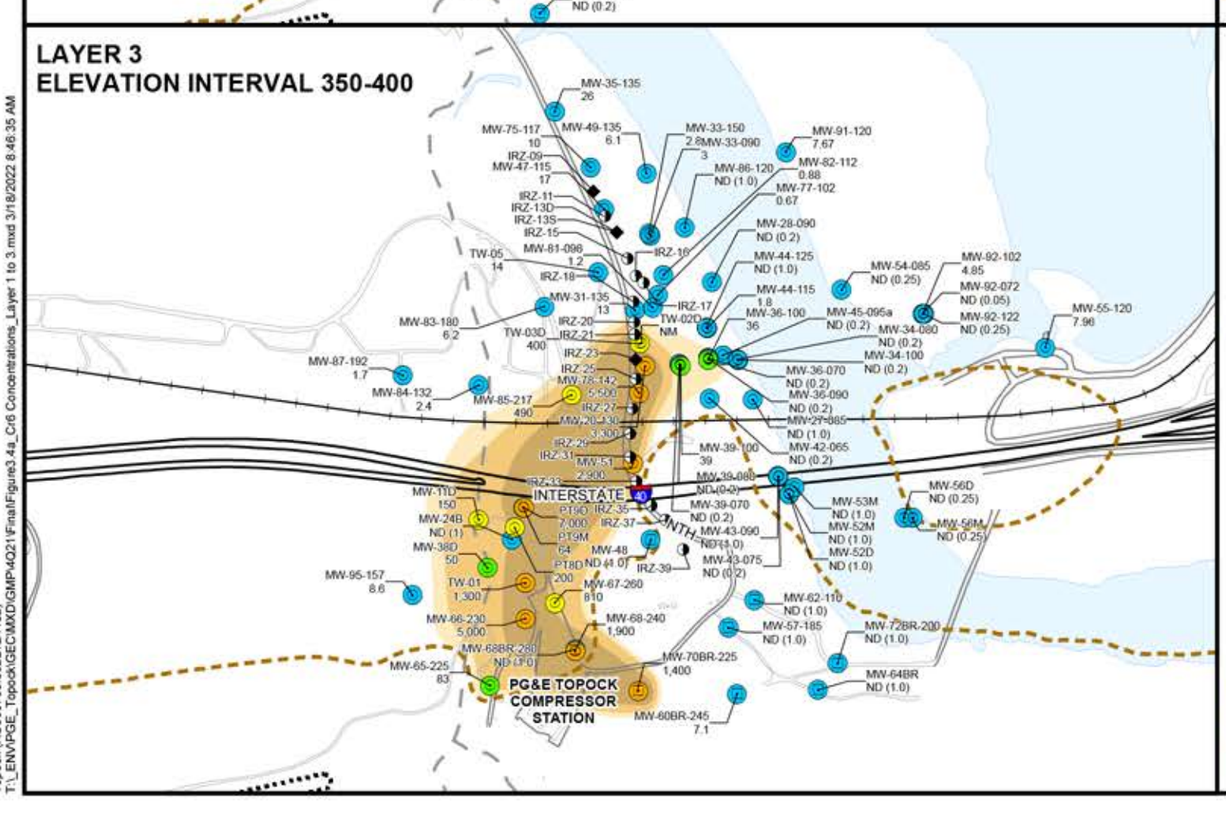
LAYER 1
ELEVATION INTERVAL 425-455



LAYER 2
ELEVATION INTERVAL 400-425



LAYER 3
ELEVATION INTERVAL 350-400



LEGEND

- Groundwater Monitoring Well
- Groundwater Well Completed in Bedrock
- NTH IRZ Injection Well
- NTH IRZ Extraction Well
- Bat Cave Wash
- Approximate bedrock contact (per depth interval)

Cr6 Concentrations

- ≤ 32 µg/L (or not detected [ND])
- 32 - 100 µg/L
- 100 - 1,000 µg/L
- 1,000 - 10,000 µg/L
- > 10,000 µg/L

Cr6 contours

- 32 µg/L
- 100 µg/L
- 1,000 µg/L
- 10,000 µg/L

N

0 400 800 Feet

Notes:

1. Cr6 = Hexavalent Chromium
2. µg/L = Micrograms Per Liter
3. NTH = National Trails Highway
4. IRZ = In-situ Reactive Zone
5. ND = non-detect at the reporting limit
6. Fourth Quarter 2021 results are presented (November - December 2021).
7. If more than one concentration is available for a monitoring well, then the maximum concentration is used for contouring.
8. * = concentration not used for contouring

MW-55-120 —— Well ID
7.96 —— Cr6 concentration in µg/L

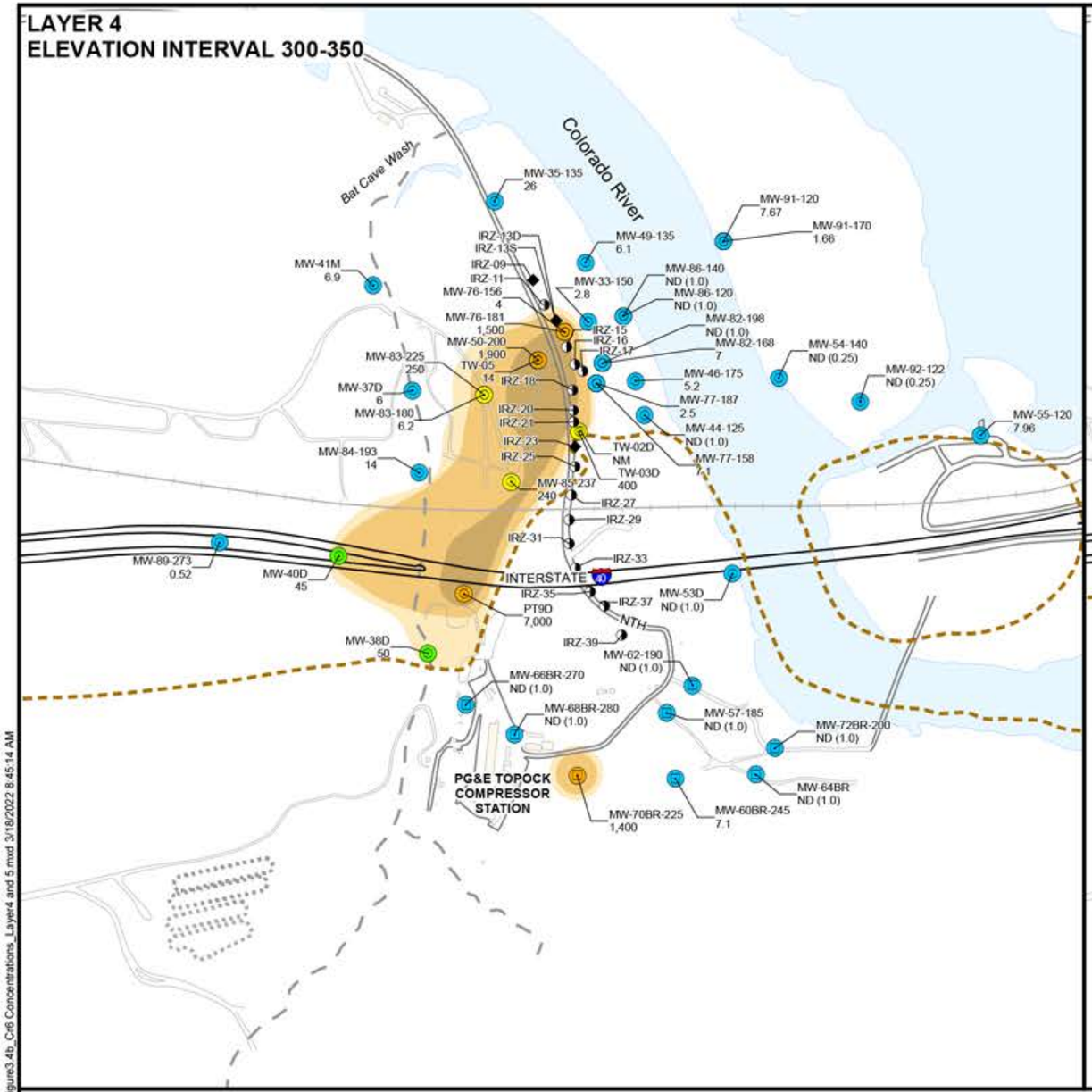
FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Cr6 CONCENTRATIONS IN GROUNDWATER BY ELEVATION INTERVAL

ARCADIS

FIGURE 3.4a

City: Citrix Div/Group: IM Created By: K. SINSABAUGH Last Saved By: ldrum
Topock (RC000753.802D.C41182)
T:_ENV\PGE_Topock\IGEC\MXD\GMP\4Q21\Final\Figure3.4a_Cr6 Concentrations_Layer 1 to 3.mxd 3/18/2022 8:46:35 AM



LEGEND

- Groundwater Monitoring Well
- Groundwater Well Completed in Bedrock
- NTH IRZ Injection Well
- NTH IRZ Extraction Well
- Bat Cave Wash
- Approximate bedrock contact (per depth interval)

Cr6 Concentrations

- ≤ 32 µg/L (or not detected [ND])
- 32 - 100 µg/L
- 100 - 1,000 µg/L
- 1,000 - 10,000 µg/L
- > 10,000 µg/L

Cr6 contours

- 32 µg/L
- 100 µg/L
- 1,000 µg/L
- 10,000 µg/L

MW-60BR-245 — Well ID
7.1 — Cr6 concentration in µg/L

N

0 400 800 Feet

Notes:

1. Cr6 = Hexavalent Chromium
2. µg/L = Micrograms Per Liter
3. NTH = National Trails Highway
4. IRZ = In-situ Reactive Zone
5. ND = non-detect at the reporting limit
6. Fourth Quarter 2021 results are presented (November - December 2021)
7. If more than one concentration is available for a monitoring well, then the maximum concentration is used for contouring.

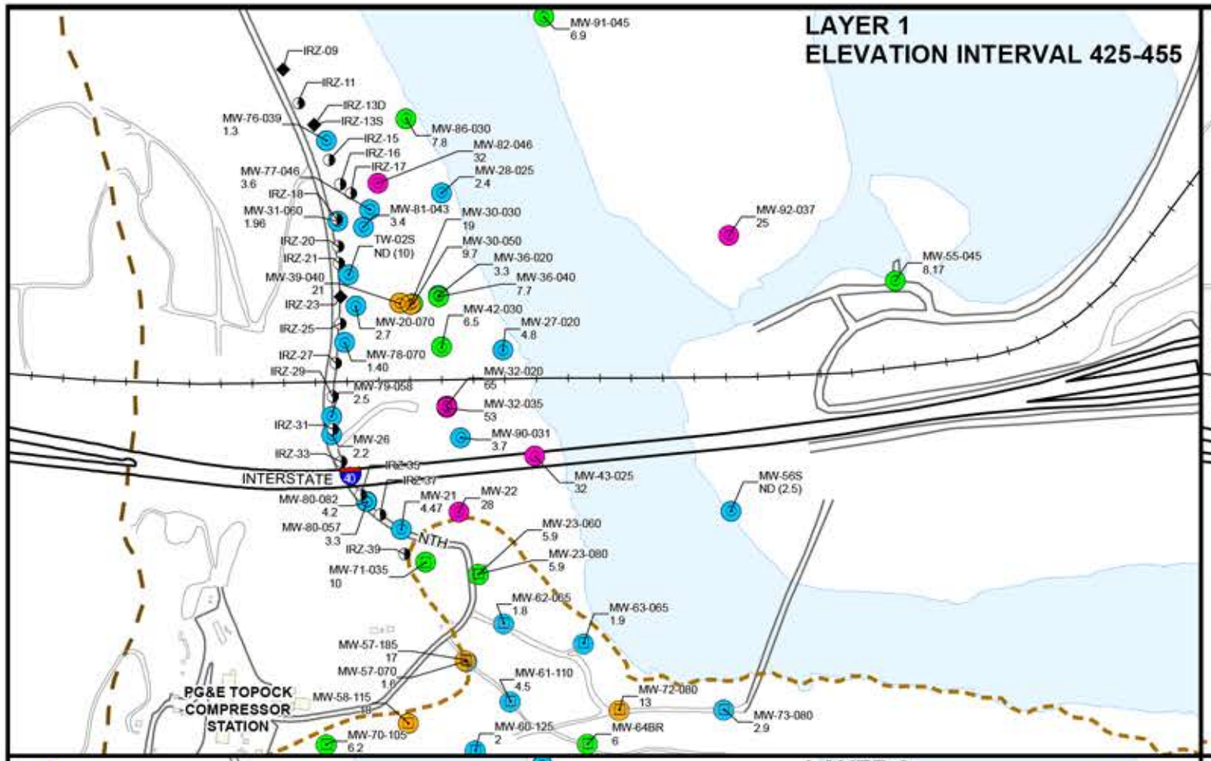
FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

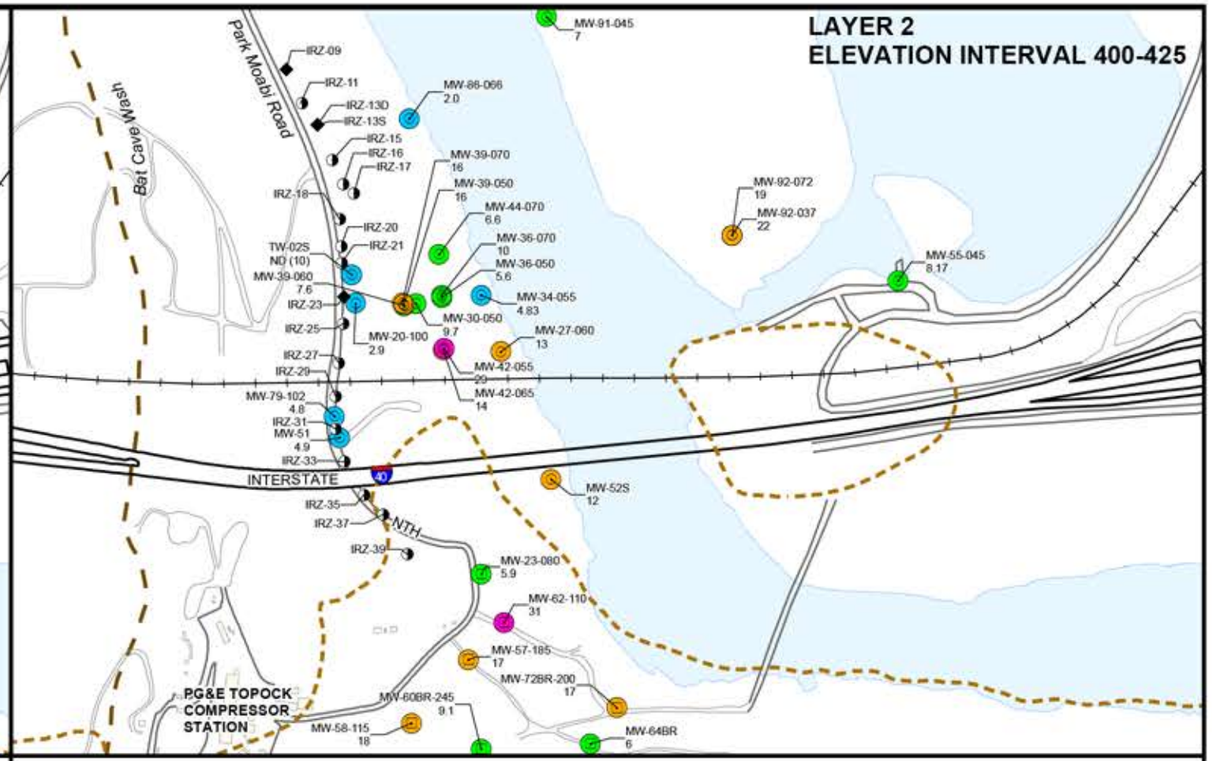
Cr6 CONCENTRATIONS IN GROUNDWATER BY ELEVATION INTERVAL

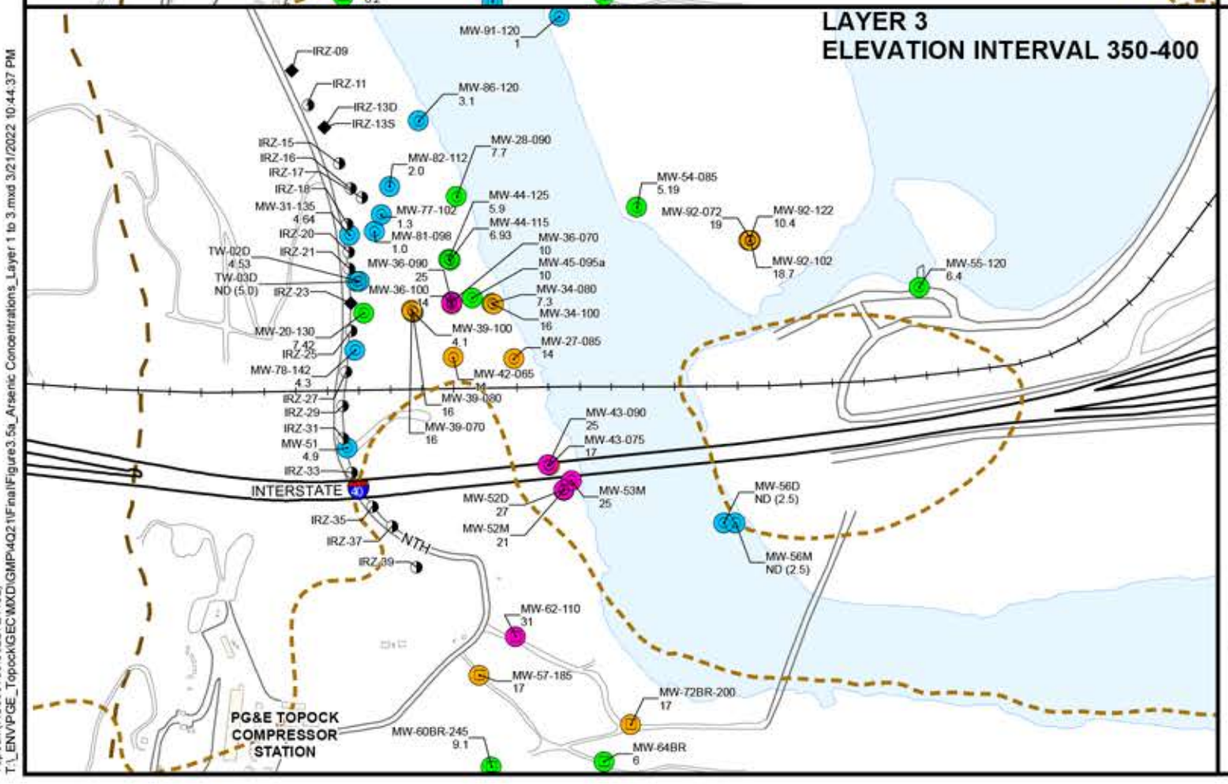
ARCADIS

FIGURE **3.4b**

City: Citrix Div/Group: IM Created By: K. SINSABAUGH Last Saved By: ldrum
Topock (RC000753.802D Q4182)
T:_ENV\PGE_Topock\GEC\MXD\QMP\4Q21\Final\Figure3.4b_Cr6 Concentrations_Layer4 and 5.mxd 3/18/2022 8:45:14 AM







LEGEND

- Groundwater Monitoring Well
- Groundwater Well Completed in Bedrock
- NTH IRZ Injection Well
- NTH IRZ Extraction Well
- Bat Cave Wash
- Approximate bedrock contact (per depth interval)

Dissolved Arsenic Concentrations

- 5 µg/L
- 10 µg/L (ARAR)
- 24.3 µg/L (Background UTL)

MW-32-035 — Well ID
53 — Dissolved arsenic concentration in µg/L

N

0 400 800 Feet

Notes:

1. µg/L = Micrograms Per Liter
2. NTH = National Trails Highway
3. IRZ = in-situ reactive zone
4. ND = non-detect at the reporting limit
5. Arsenic Background Study Upper Tolerance Limit (UTL) = 24.3 µg/L
6. Arsenic applicable or relevant and appropriate requirement (ARAR) = 10.0 µg/L
7. For wells installed before 2019, the maximum historical value through December 2021 is presented.
8. For wells installed after 2019, the maximum value between January 2020 and December 2021 is presented.

FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

DISSOLVED ARSENIC CONCENTRATIONS IN GROUNDWATER BY ELEVATION INTERVAL

ARCADIS

FIGURE 3.5a

City: Citrix Div/Group: IM Created By: K. SINSABAUGH Last Saved By: PSI01045
Topock (RC000753.802D.Q4182)
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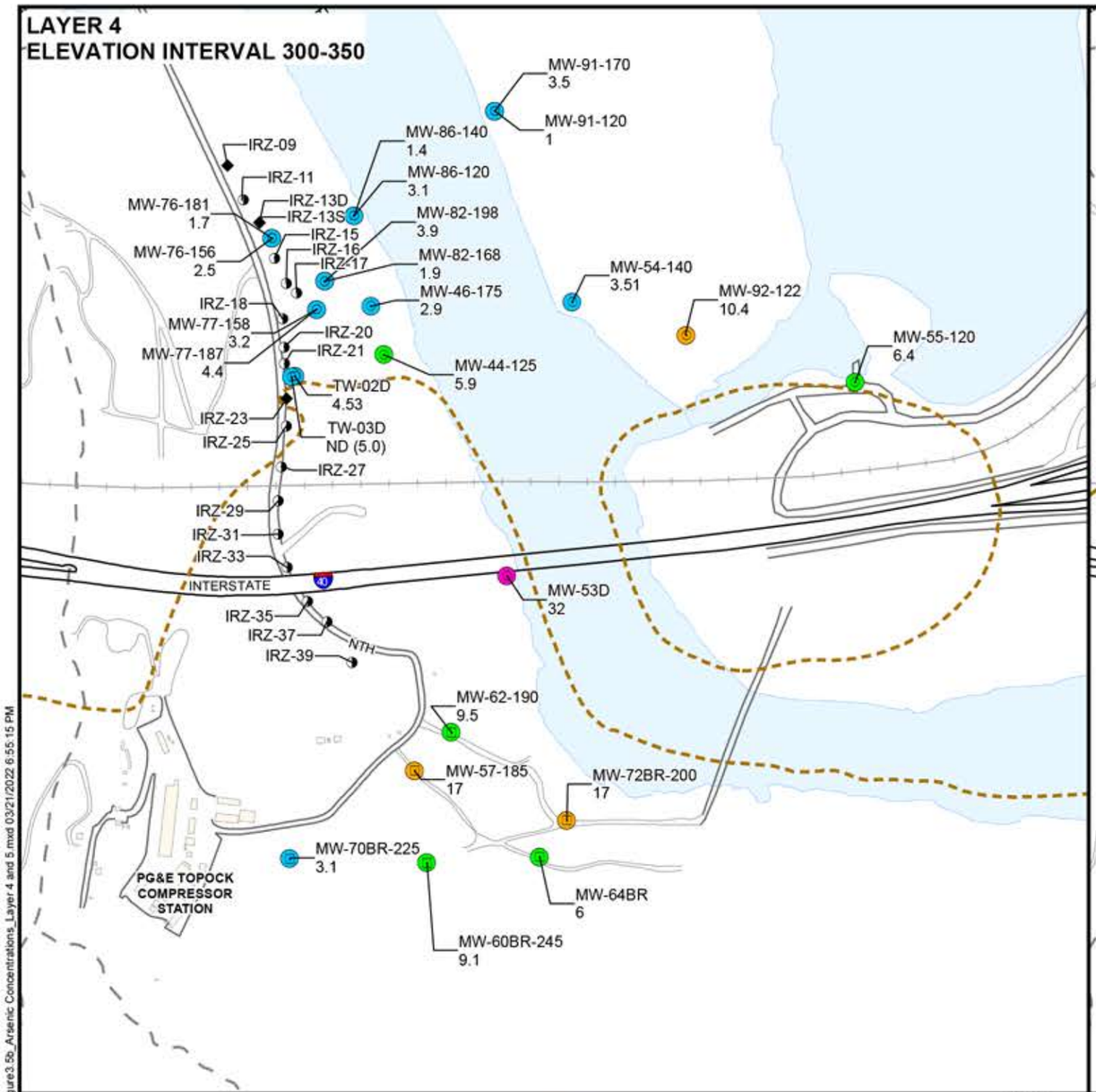
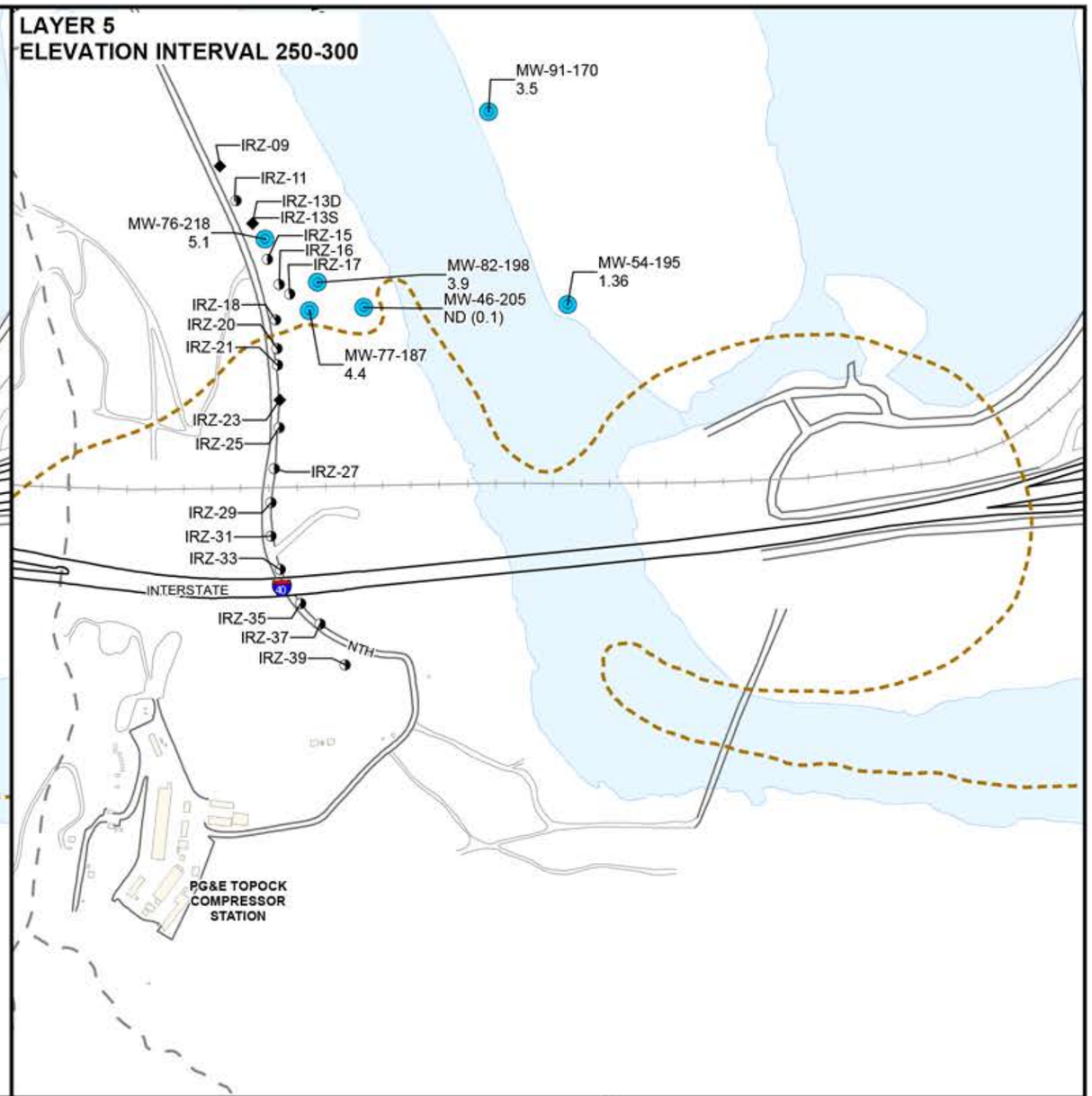




LEGEND

- Groundwater Monitoring Well
- Groundwater Well Completed in Bedrock
- Included in Mitigation Measure Hydro-6a Monitoring Program
- NTH IRZ Injection Well
- NTH IRZ Extraction Well
- Bat Cave Wash
- Approximate bedrock contact (per depth interval)

Dissolved Arsenic Concentrations

- 5 µg/L
- 10 µg/L (ARAR)
- 24.3 µg/L (Background UTL)

Notes:

1. µg/L = Micrograms Per Liter
2. NTH = National Trails Highway
3. IRZ = in-situ reactive zone
4. ND = non-detect at the reporting limit
5. Arsenic Background Study Upper Tolerance Limit (UTL) = 24.3 µg/L
6. Arsenic applicable or relevant and appropriate requirement (ARAR) = 10.0 µg/L
7. For wells installed before 2019, the maximum historical value through December 2021 is presented.
8. For wells installed after 2019, the maximum value between January 2020 and December 2021 is presented.

MW-77-187 — Well ID
3.2 — Dissolved arsenic concentration in µg/L

N

0 400 800 Feet

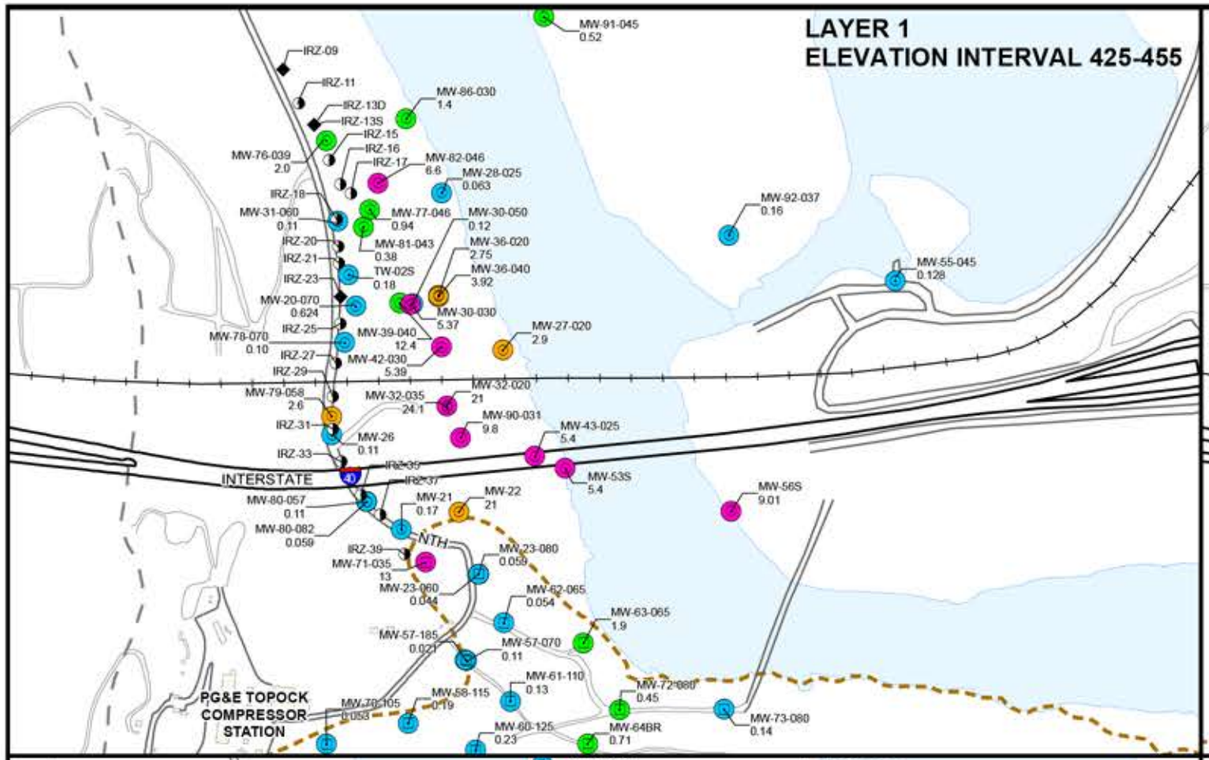
FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

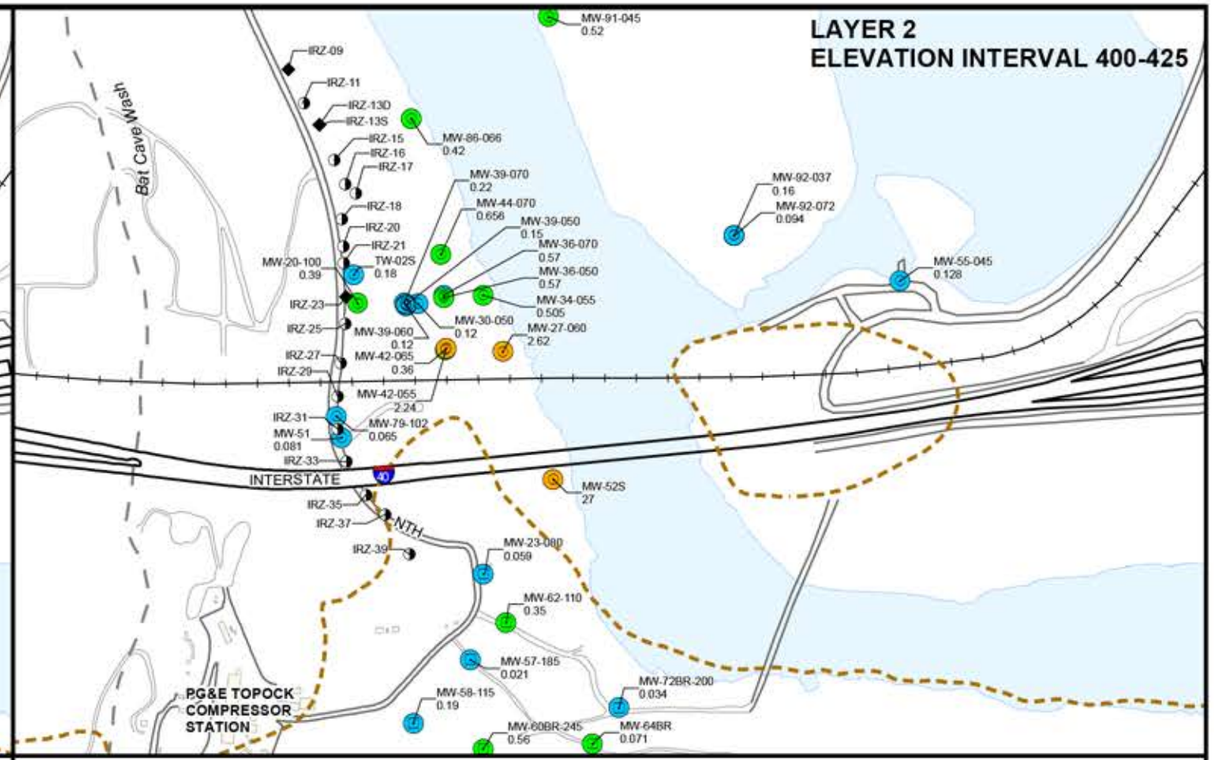
DISSOLVED ARSENIC CONCENTRATIONS IN GROUNDWATER BY ELEVATION INTERVAL

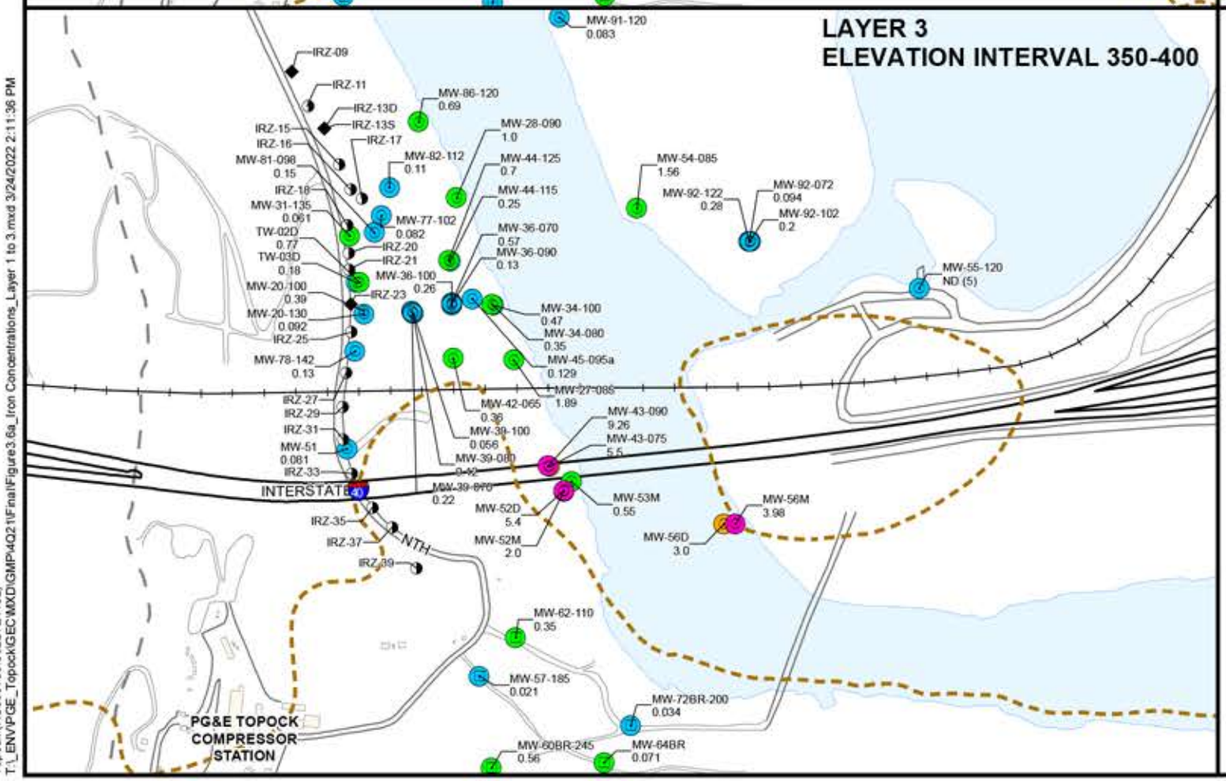
ARCADIS

FIGURE
3.5b

City: Citrix DivGroup: IM Created By: K. SINSABAUGH Last Saved By: PSI01045
Topock (RC000763.802D.04182)
T:_ENV\PGE_Topock\GEC\MXD\GMP4Q21\Final\Figure3.5b_Arsenic Concentrations_Layer 4 and 5.mxd 03/21/2022 6:55:15 PM







LEGEND

- Groundwater Monitoring Well
- Groundwater Well Completed in Bedrock
- NTH IRZ Injection Well
- NTH IRZ Extraction Well
- Bat Cave Wash
- Approximate bedrock contact (per depth interval)

Dissolved Iron Concentrations

- 0.3 mg/L (ARAR)
- 2 mg/L
- 3.93 mg/L (Background UTL)

N

0 400 800 Feet

Notes:

1. mg/L = Milligrams Per Liter
2. NTH = National Trails Highway
3. IRZ = in-situ reactive zone
4. ND = non-detect at the reporting limit
5. Iron Background Study Upper Tolerance Limit (UTL) = 3.93 mg/L.
6. Iron applicable or relevant and appropriate requirement (ARAR) = 0.3 mg/L
7. For wells installed before 2019, the maximum historical value through December 2021 is presented.
8. For wells installed after 2019, the maximum value between January 2020 and December 2021 is presented.

MW-54-085 —— Well ID
1.19 —— Dissolved Iron concentration in mg/L

FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

DISSOLVED IRON CONCENTRATIONS IN GROUNDWATER BY ELEVATION INTERVAL

ARCADIS

FIGURE 3.6a

City: Citrix DivGroup: IM Created By: K. SINSABAUGH Last Saved By: PSI01045
Topock (RC000753.802D Q4182)
T:_ENV\PGE_Topock\GEC\MXD\GMP\4Q21\Final\Figure3.6a_Iron Concentrations_Layer 1 to 3.mxd 3/24/2022 2:11:36 PM

LAYER 4
ELEVATION INTERVAL 300-350

LAYER 5
ELEVATION INTERVAL 250-300

Colorado River

MW-91-170 0.24
MW-91-120 0.083
IRZ-09
IRZ-11
IRZ-13D
IRZ-13S
MW-86-120 0.69
MW-86-140 0.53
MW-76-181 0.08
MW-76-156 0.17
IRZ-15
IRZ-16
IRZ-17
MW-82-168 0.094
MW-82-198 0.27
MW-77-158 0.048
MW-77-187 0.05
MW-46-175 0.2
IRZ-18
IRZ-20
IRZ-21
MW-44-125 0.70
TW-02D 0.77
TW-03D 0.18
MW-54-140 ND (5)
MW-92-122 0.28
MW-55-120 ND (5)
IRZ-23
IRZ-25
IRZ-27
IRZ-29
IRZ-31
IRZ-33
INTERSTATE
IRZ-35
IRZ-37
IRZ-39
NTH
MW-53D 0.54
MW-62-190 1.4
MW-57-185 0.021
MW-72BR-200 0.034
MW-70BR-225 0.11
MW-60BR-245 0.56
MW-64BR 0.071

MW-76-218 0.18
MW-46-205 0.068
MW-77-187 0.05
MW-54-195 0.149

LEGEND

- Groundwater Monitoring Well
- Groundwater Well Completed in Bedrock
- NTH IRZ Injection Well
- NTH IRZ Extraction Well
- Bat Cave Wash
- Approximate bedrock contact (per depth interval)

Dissolved Iron Concentrations

- 0.3 mg/L (ARAR)
- 2 mg/L
- 3.93 mg/L (Background UTL)

MW-57-185
0.021
Well ID
Dissolved Iron concentration in mg/L

Notes:
1. mg/L = Milligrams Per Liter
2. NTH = National Trails Highway
3. IRZ = in-situ reactive zone
4. ND = non-detect at the reporting limit
5. Iron Background Study Upper Tolerance Limit (UTL) = 3.93 mg/L.
6. Iron applicable or relevant and appropriate requirement (ARAR) = 0.3 mg/L
7. For wells installed before 2019, the maximum historical value through December 2021 is presented.
8. For wells installed after 2019, the maximum value between January 2020 and December 2021 is presented.

N

0 400 800 Feet

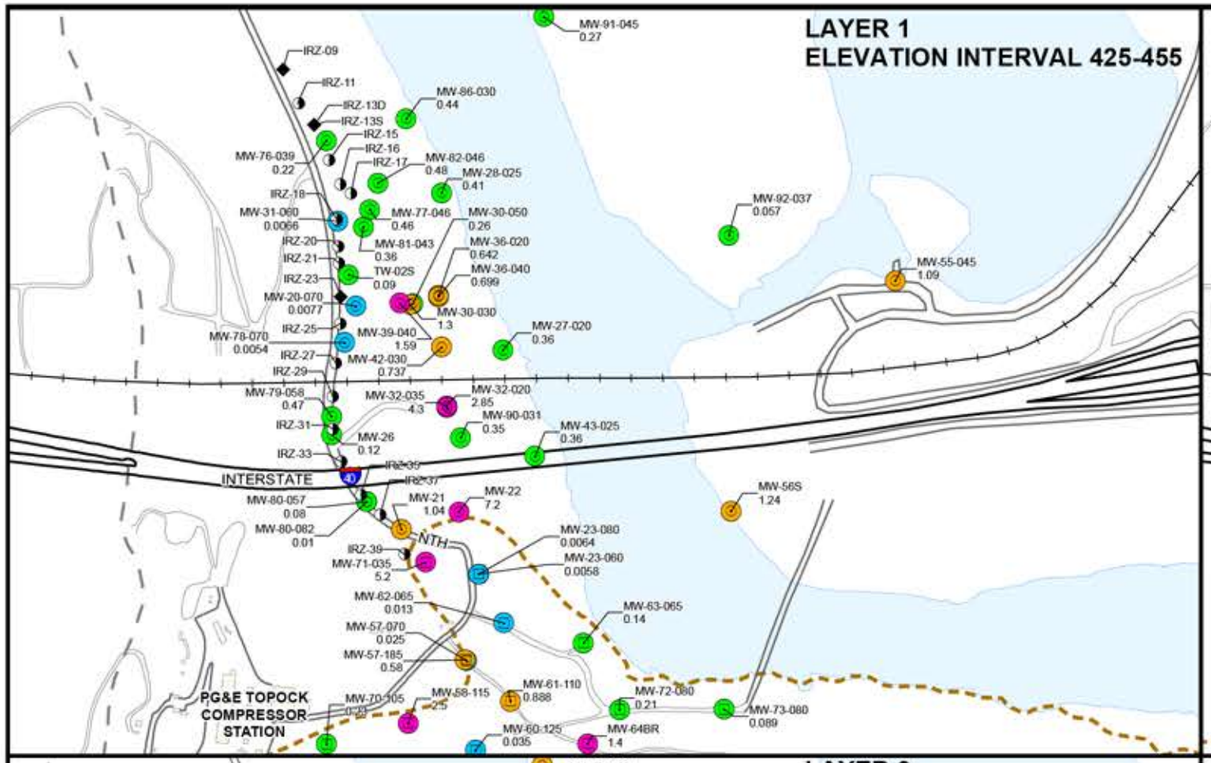
FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

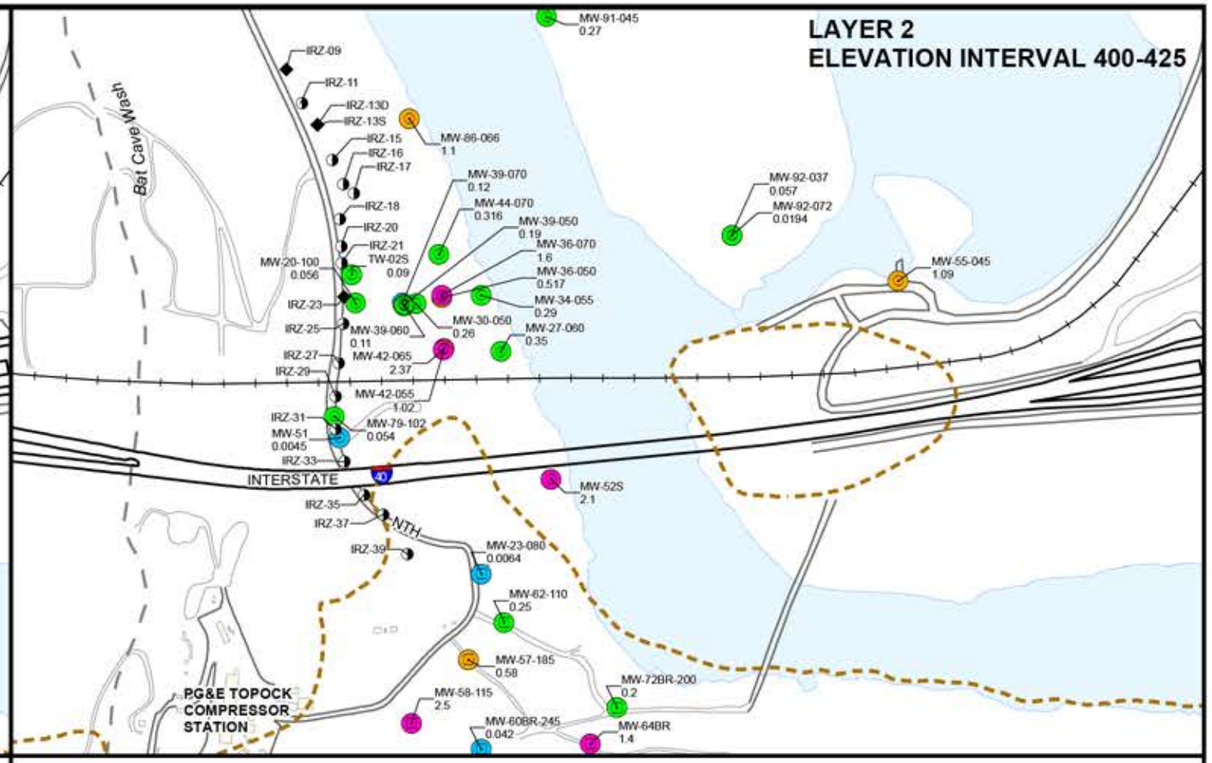
DISSOLVED IRON CONCENTRATIONS IN GROUNDWATER BY ELEVATION INTERVAL

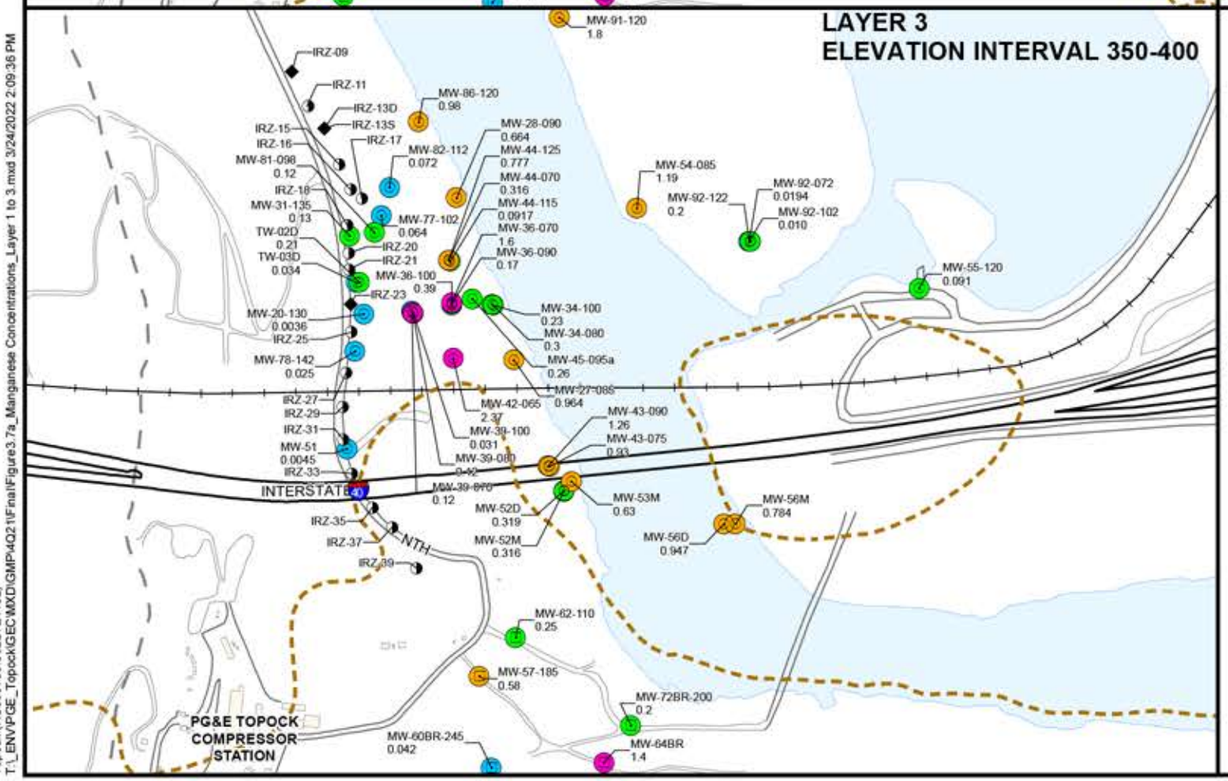
ARCADIS

FIGURE 3.6b

City: Citrix Div/Group: IM Created By: K. SINSABAUGH Last Saved By: PSI01045
Topock (RC000753.802D.04182)
T:_ENV\PGE_Topock\GEC\MXD\GMP4Q21\Final\Figure3.6b_Iron Concentrations_Layer 4 to 5.mxd 3/21/2022 12:06:32 PM







LEGEND

- Groundwater Monitoring Well
- Groundwater Well Completed in Bedrock
- NTH IRZ Injection Well
- NTH IRZ Extraction Well
- Bat Cave Wash
- Approximate bedrock contact (per depth interval)

Dissolved Manganese Concentrations

- 0.05 mg/L (ARAR)
- 0.5 mg/L
- 1.320 mg/L (Background UTL)

N

0 400 800 Feet

Notes:

1. mg/L = Milligrams Per Liter
2. NTH = National Trails Highway
3. IRZ = in-situ reactive zone
4. ND = not detected at reporting limit
5. Manganese Background Study Upper Tolerance Limit (UTL) = 1.320 mg/L
6. Manganese applicable or relevant and appropriate requirement (ARAR) = 0.05 mg/L
7. For wells installed before 2019, the maximum historical value through December 2021 is presented.
8. For wells installed after 2019, the maximum value between January 2020 and December 2021 is presented.

MW-54-085 —— Well ID
1.19 —— Dissolved manganese concentration in mg/L

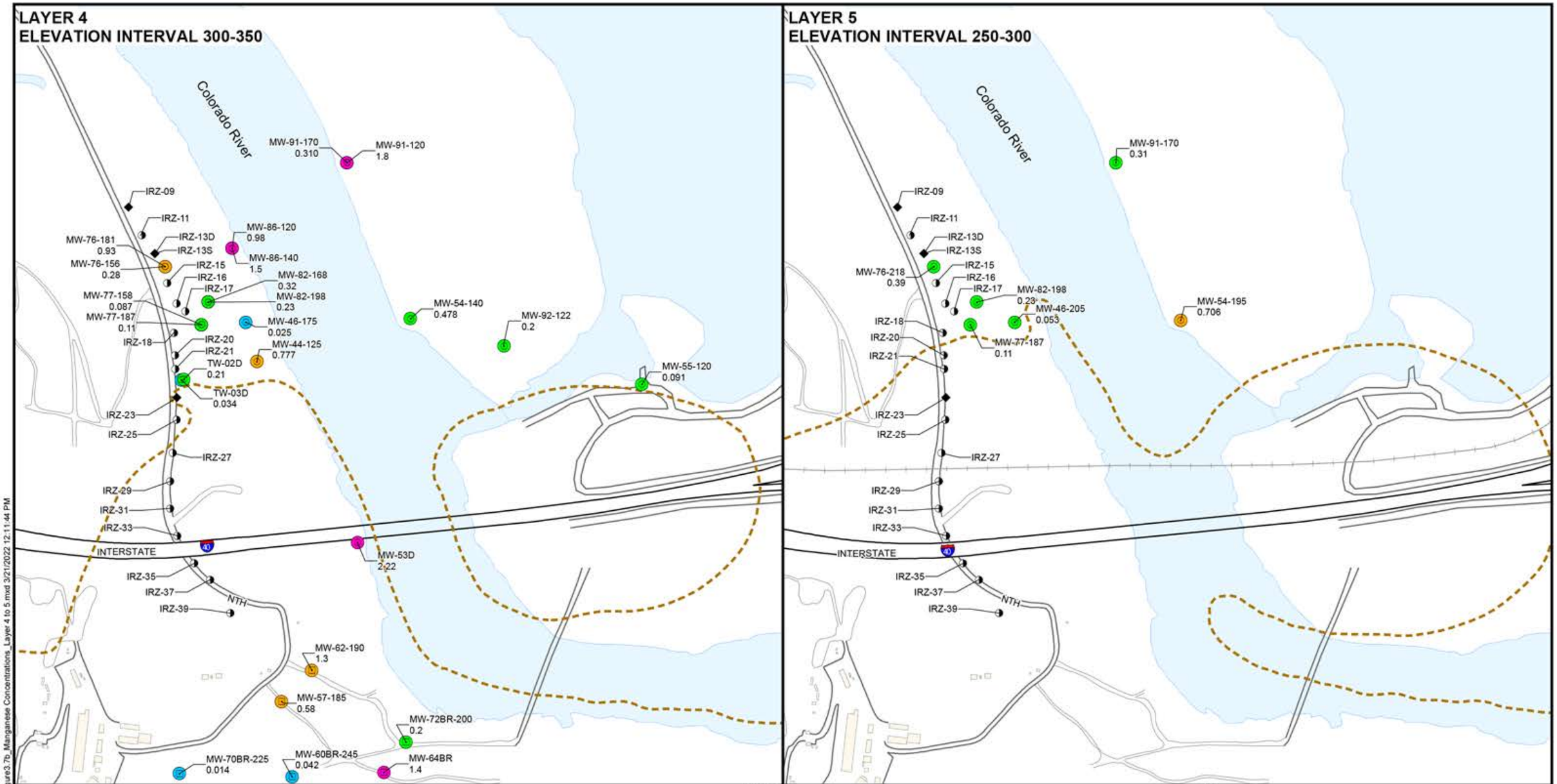
FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

DISSOLVED MANGANESE CONCENTRATIONS IN GROUNDWATER BY ELEVATION INTERVAL

ARCADIS

FIGURE 3.7a

City: Citrix Div/Group: IM Created By: K. SINSABAUGH Last Saved By: PSI01045
Topock (RC000753.802D.Q4182)
T:_ENV\PGE_Topock\GEC\MXD\GMP4Q21\Final\Figure3.7a_Manganese Concentrations_Layer 1 to 3.mxd 3/24/2022 2:09:36 PM



LEGEND

- Groundwater Monitoring Well
- Groundwater Well Completed in Bedrock
- Included in Mitigation Measure Hydro-6a Monitoring Program
- NTH IRZ Injection Well
- NTH IRZ Extraction Well
- Bat Cave Wash
- Approximate bedrock contact (per depth interval)

Dissolved Manganese Concentrations

- 0.05 mg/L (ARAR)
- 0.5 mg/L
- 1.320 mg/L (Background UTL)

Notes:

1. mg/L = Milligrams Per Liter
2. NTH = National Trails Highway
3. IRZ = in-situ reactive zone
4. ND = not detected at reporting limit
5. Manganese Background Study Upper Tolerance Limit (UTL) = 1.320 mg/L
6. Manganese applicable or relevant and appropriate requirement (ARAR) = 0.05 mg/L
7. For wells installed before 2019, the maximum historical value through December 2021 is presented.
8. For wells installed after 2019, the maximum value between January 2020 and December 2021 is presented.

MW-54-140 — Well ID
1.41 — Dissolved manganese concentration in mg/L

N

0 400 800 Feet

FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

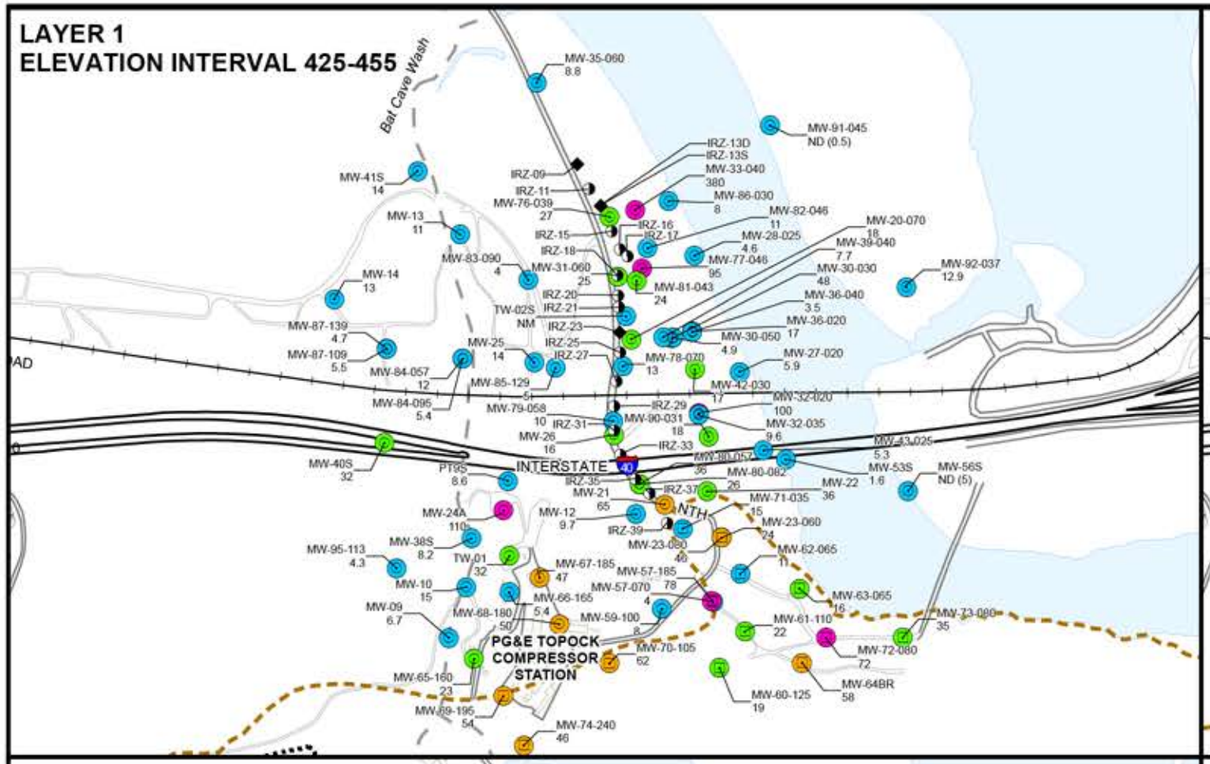
DISSOLVED MANGANESE CONCENTRATIONS IN GROUNDWATER BY ELEVATION INTERVAL

ARCADIS

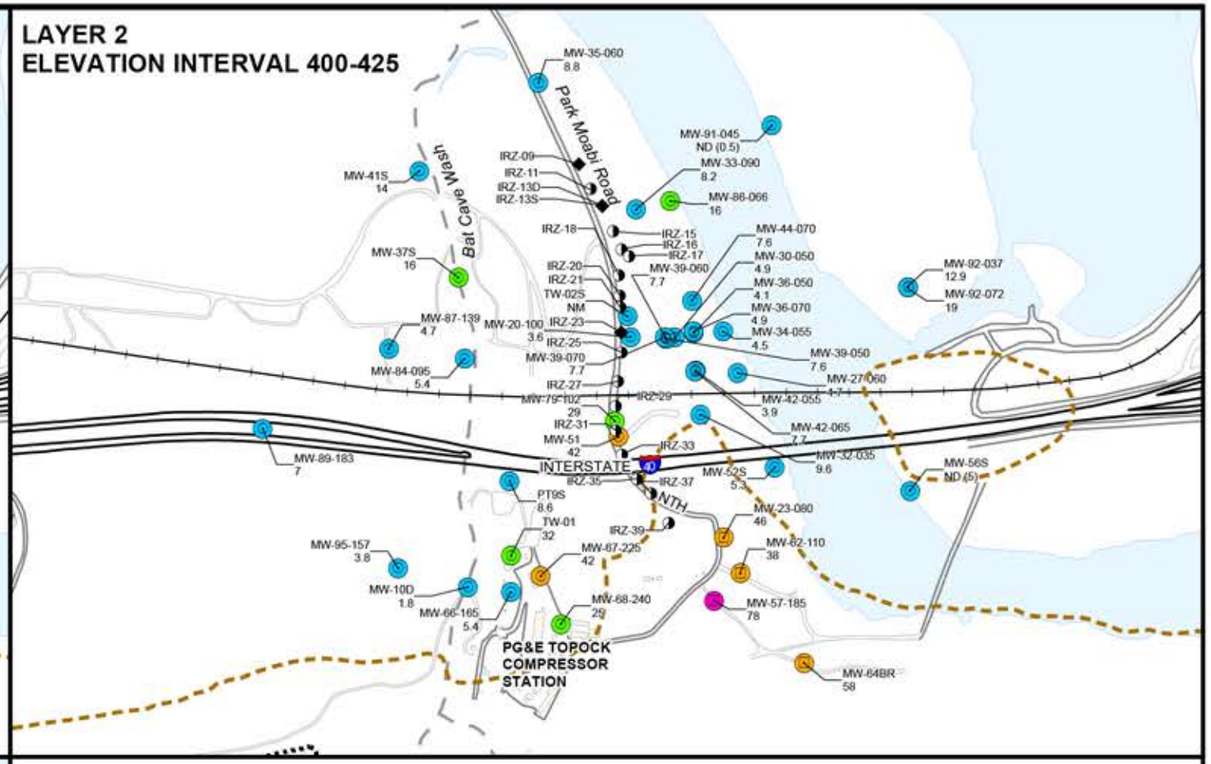
FIGURE
3.7b

City: Citrix Div/Group: IM Created By: K. SINSABAUGH Last Saved By: PSI01045
Topock (RC000753.8020.C04182)
T:_ENV\PGE_Topock\GEC\MXD\GMP4Q21\Final\Figure3.7b_Manganese Concentrations_Layer 4 to 5.mxd 3/21/2022 12:11:44 PM

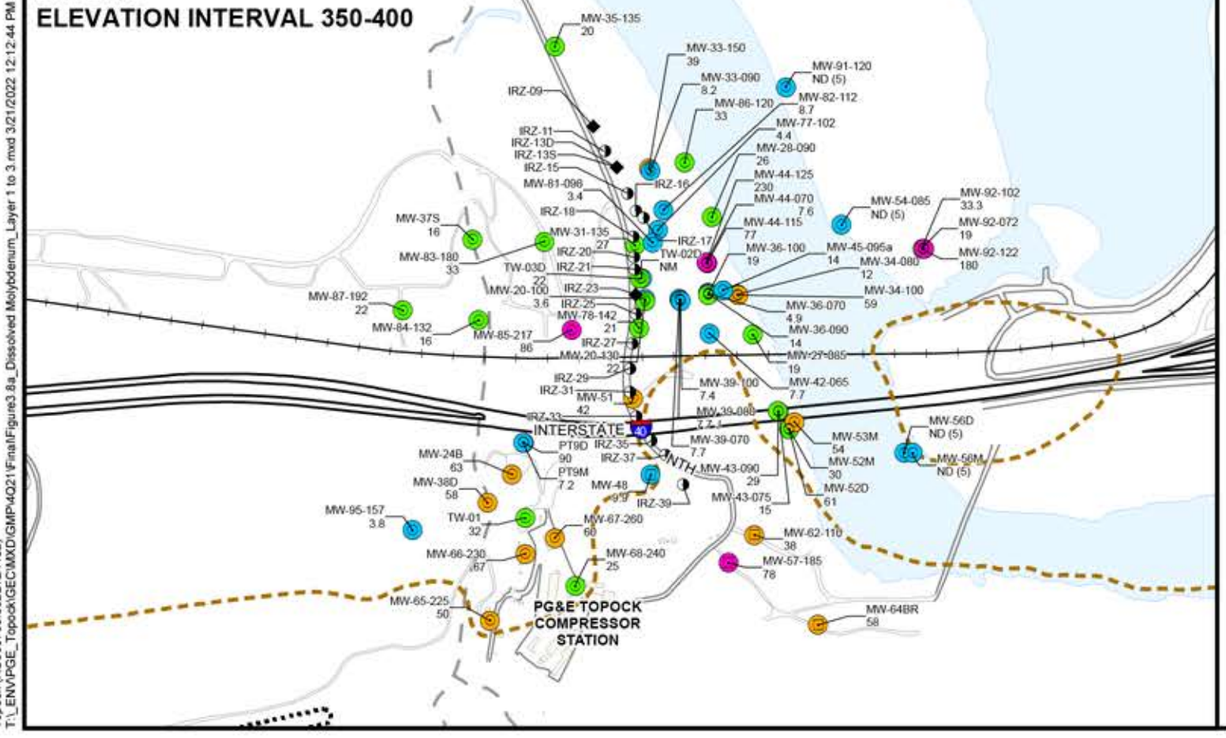
LAYER 1
ELEVATION INTERVAL 425-455



LAYER 2
ELEVATION INTERVAL 400-425



LAYER 3
ELEVATION INTERVAL 350-400



LEGEND

- Groundwater Monitoring Well
- Groundwater Well Completed in Bedrock
- NTH IRZ Injection Well
- NTH IRZ Extraction Well
- Bat Cave Wash
- Approximate bedrock contact (per depth interval)

Dissolved Molybdenum Concentrations

- 15 µg/L
- 36.3 µg/L (Background UTL)
- 70 µg/L

MW-63-065 — Well ID
16 — Dissolved Molybdenum concentration in µg/L

Notes:

1. IRZ = In-situ reactive zone
2. µg/L = Micrograms Per Liter
3. NTH = National Trails Highway
4. Fourth Quarter 2021 results are presented (November - December 2021)
5. Molybdenum background study upper tolerance limit (UTL) = 36.3 µg/L
6. ND = not detected at reporting limit

N

0 400 800 Feet

FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

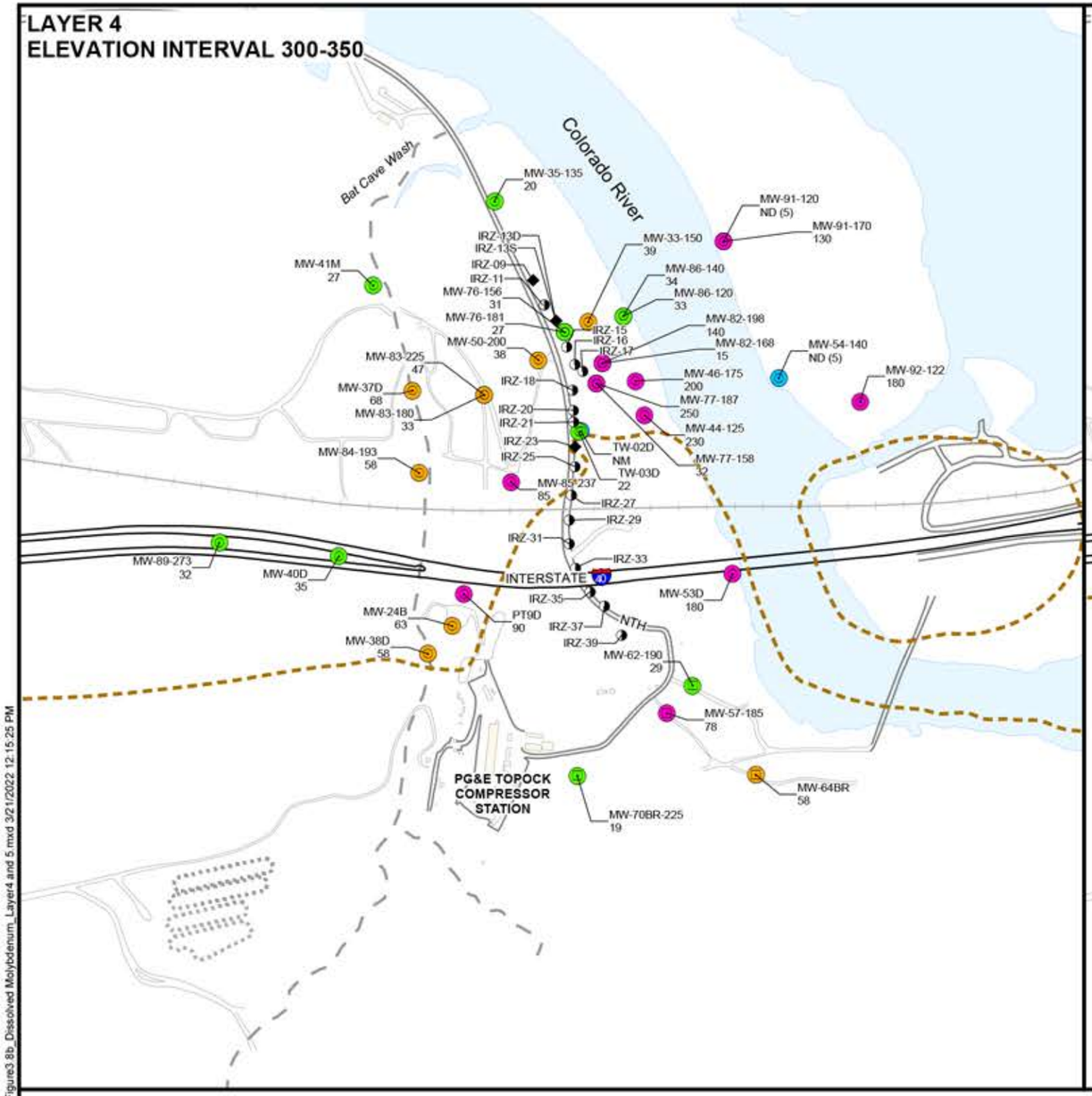
DISSOLVED MOLYBDENUM CONCENTRATIONS IN GROUNDWATER BY ELEVATION INTERVAL

ARCADIS

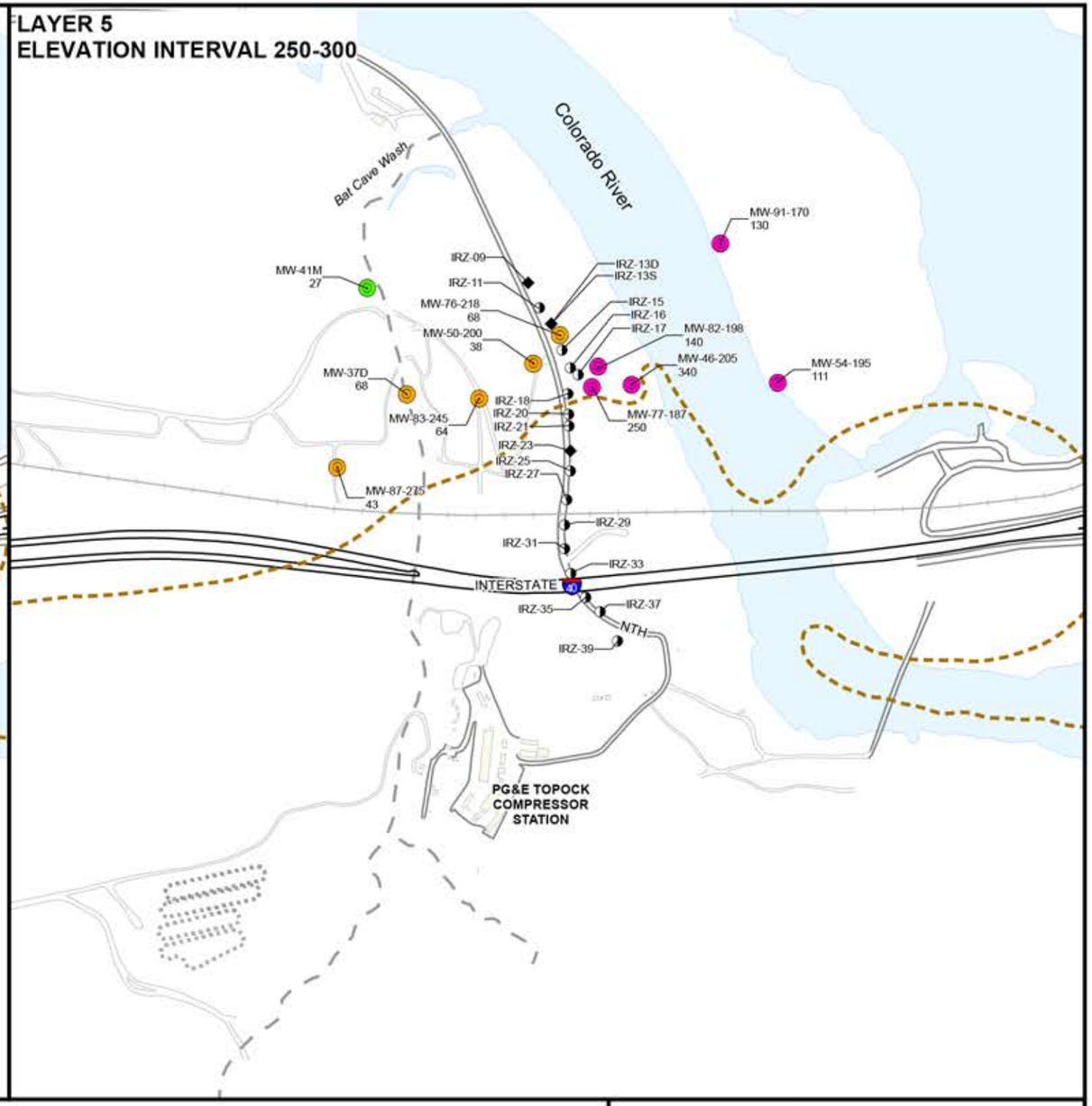
FIGURE 3.8a

City: Citrix Div/Group: IM Created By: K. SINSABAUGH Last Saved By: idrum
Topock (RC000753.8020.04182)
T:_ENV\PGE_Topock\GEC\MXD\GMP\4Q21\Final\Figure3.8a_Dissolved Molybdenum_Layer 1 to 3.mxd 3/21/2022 12:12:44 PM

LAYER 4
ELEVATION INTERVAL 300-350



LAYER 5
ELEVATION INTERVAL 250-300



LEGEND

- Groundwater Monitoring Well
- Groundwater Well Completed in Bedrock
- NTH IRZ Injection Well
- NTH IRZ Extraction Well
- Bat Cave Wash
- Approximate bedrock contact (per depth interval)

Dissolved Molybdenum Concentrations

- 15 µg/L
- 36.3 µg/L (Background UTL)
- 70 µg/L

Notes:

1. IRZ = In-situ reactive zone
2. µg/L = Micrograms Per Liter
3. NTH = National Trails Highway
4. Fourth Quarter 2021 results are presented (November - December 2021)
5. Molybdenum background study upper tolerance limit (UTL) = 36.3 µg/L
6. ND = not detected at reporting limit

MW-62-190 — Well ID
29 — Dissolved Molybdenum Concentration in µg/L

N

0 400 800 Feet

FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

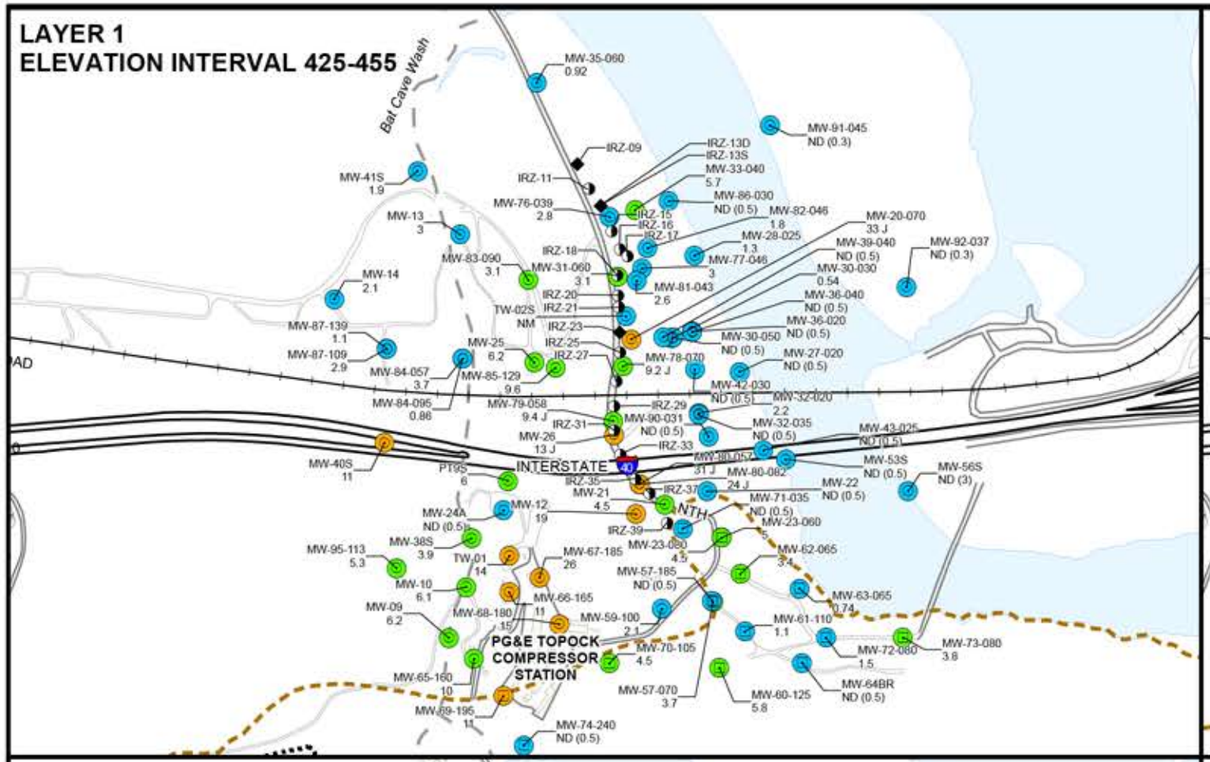
DISSOLVED MOLYBDENUM CONCENTRATIONS IN GROUNDWATER BY ELEVATION INTERVAL

ARCADIS

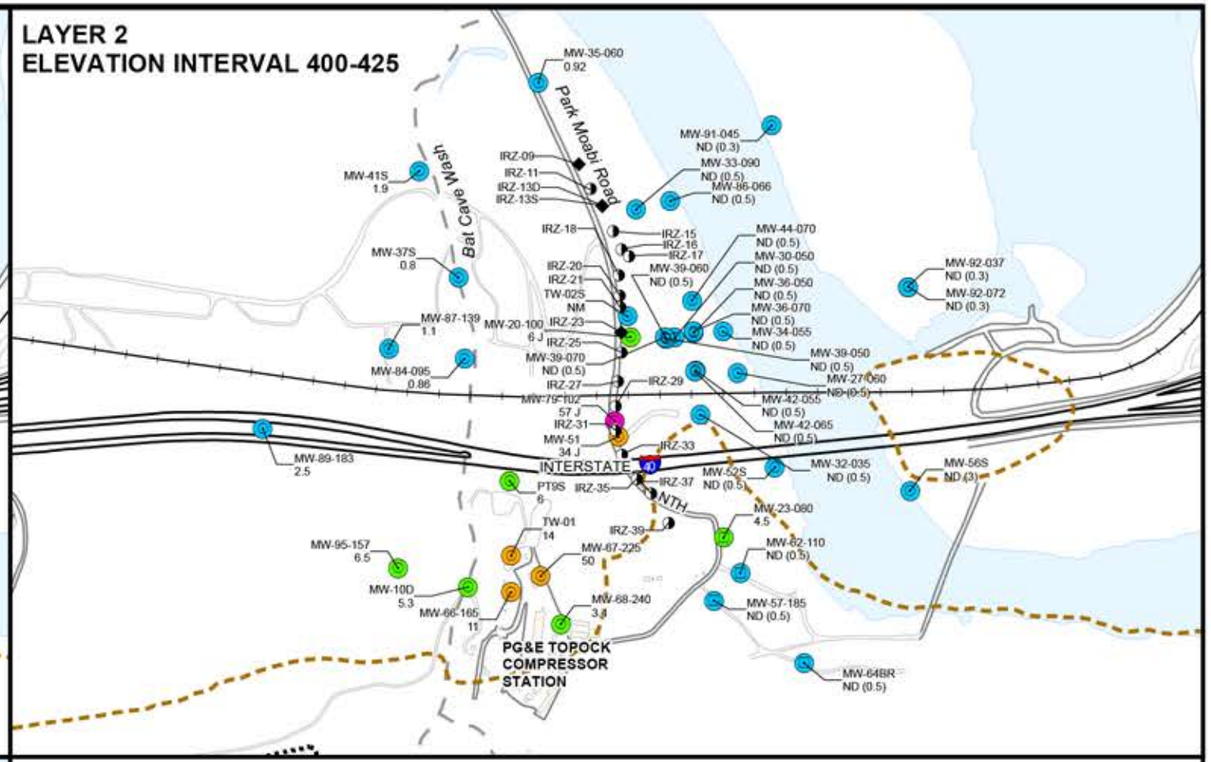
FIGURE 3.8b

City: Citrix DivGroup: IM Created By: K. SIMSABAUGH Last Saved By: kdrum
Topock \RC00753.802\D Q4182\
T:_ENV\PGE_Topock\GEC\MXD\GMP\4Q21\Final\Figure3.8b_Dissolved Molybdenum_Layer4 and 5.mxd 3/21/2022 12:15:25 PM

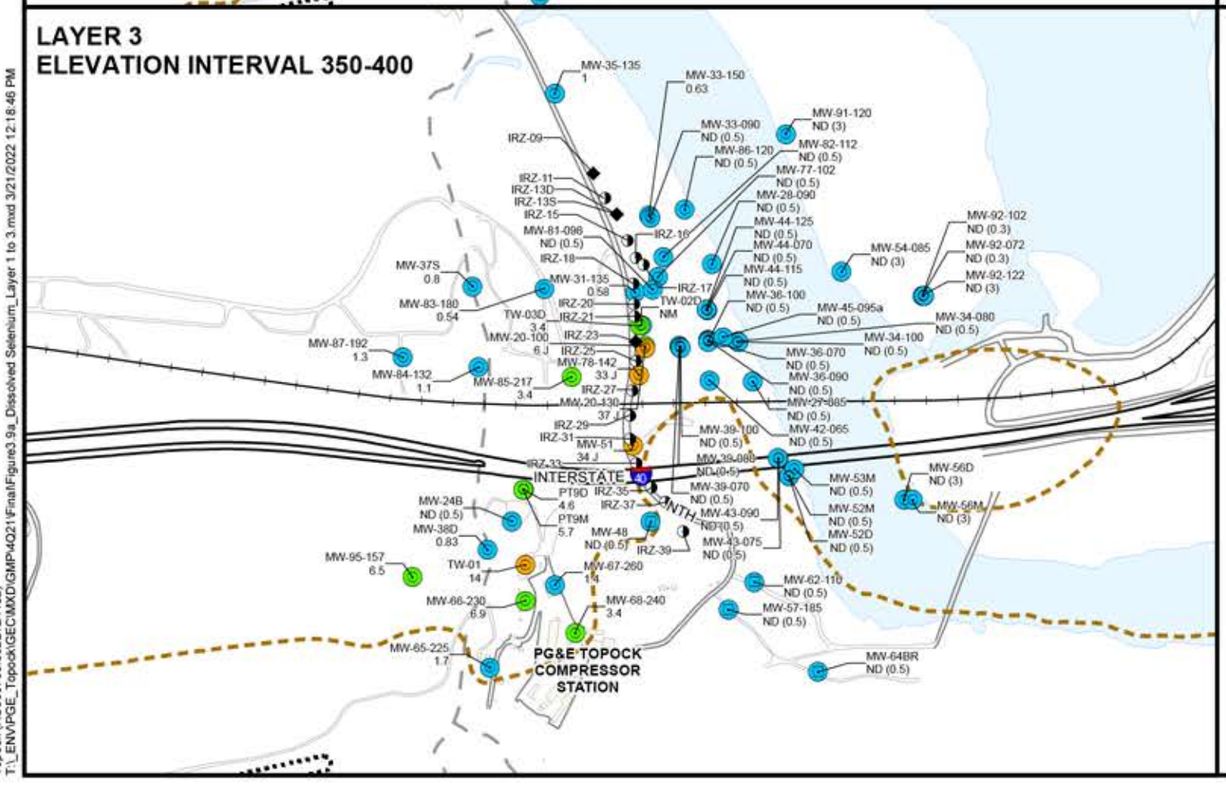
LAYER 1
ELEVATION INTERVAL 425-455



LAYER 2
ELEVATION INTERVAL 400-425



LAYER 3
ELEVATION INTERVAL 350-400



LEGEND

- Groundwater Monitoring Well
- Groundwater Well Completed in Bedrock
- NTH IRZ Injection Well
- NTH IRZ Extraction Well
- Bat Cave Wash
- Approximate bedrock contact (per depth interval)

Dissolved Selenium Concentrations

- 3 µg/L
- 10.3 µg/L (Background UTL)
- 50.0 µg/L (ARAR)

MW-20-070 — Well ID
33 J — Dissolved Selenium concentration in µg/L

N

0 400 800 Feet

Notes:

1. IRZ = In-situ reactive zone
2. µg/L = Micrograms Per Liter
3. NTH = National Trails Highway
4. Fourth Quarter 2021 results are presented (November - December 2021)
5. Selenium background study upper tolerance limit (UTL) = 10.3 µg/L
6. Selenium applicable or relevant and appropriate requirement (ARAR) = 50.0 µg/L
7. ND = not detected at reporting limit
8. J = concentration estimated by laboratory or data validation

FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

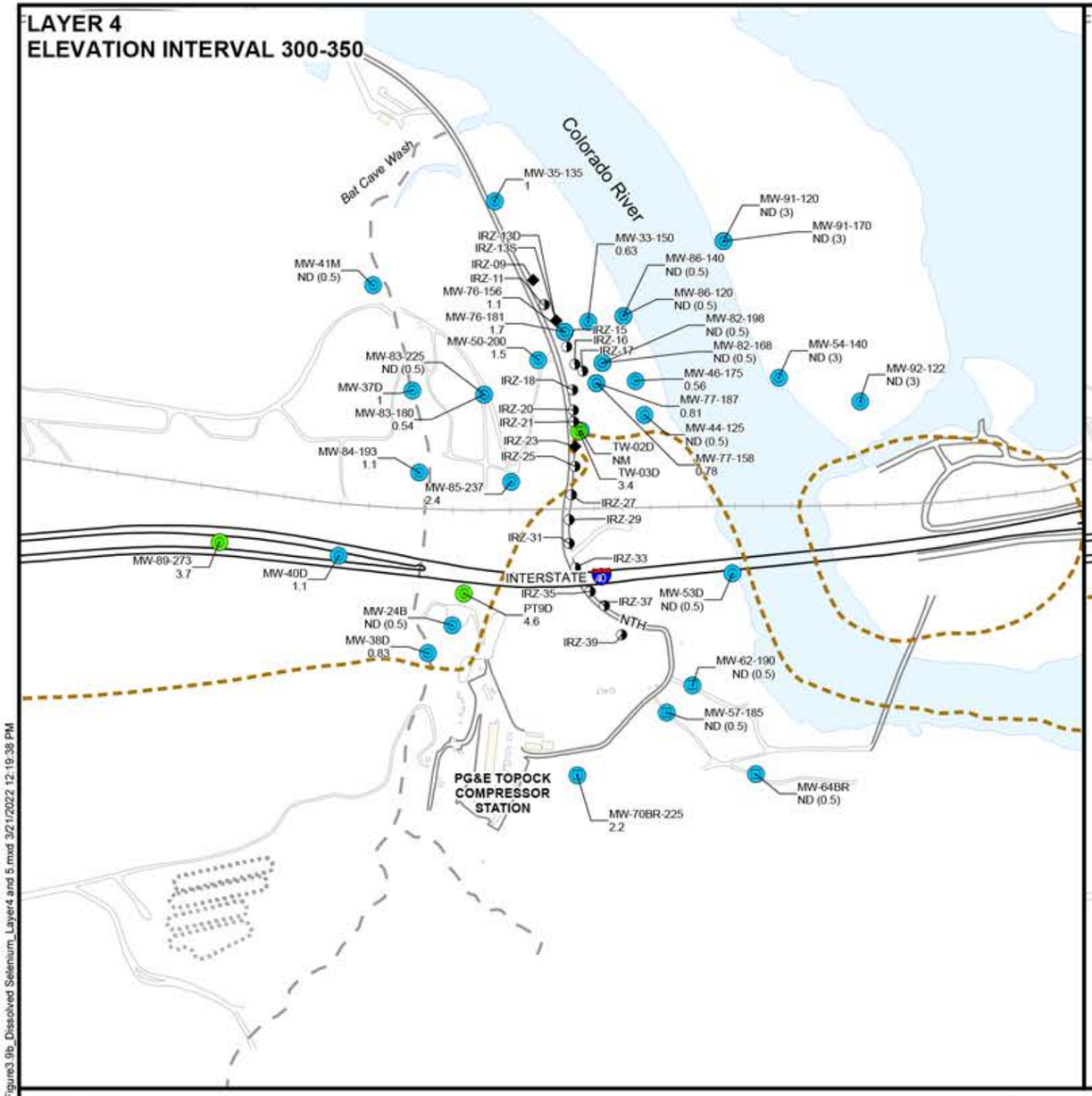
DISSOLVED SELENIUM CONCENTRATIONS IN GROUNDWATER BY ELEVATION INTERVAL

ARCADIS

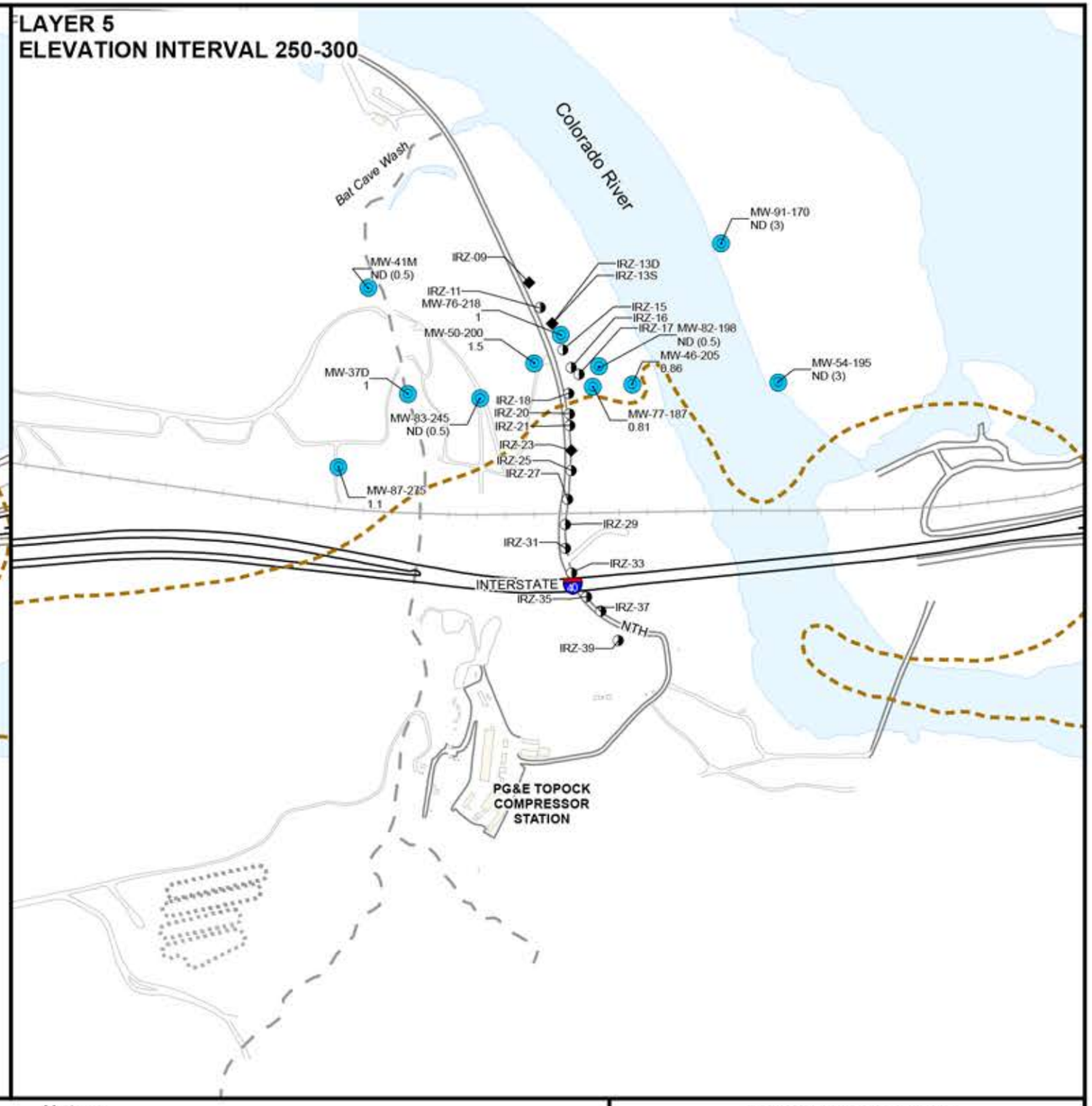
FIGURE 3.9a

City: Citrix Div/Group: IM Created By: K. SINSABAUGH Last Saved By: Idrum
Topock (RC000753.802D.C4182)
T:_ENV\PGE_Topock\IGEC\MXD\GMP4Q21\Final\Figure3.9a_Dissolved Selenium_Layer 1 to 3.mxd 3/21/2022 12:18:46 PM

LAYER 4
ELEVATION INTERVAL 300-350



LAYER 5
ELEVATION INTERVAL 250-300



LEGEND

- Groundwater Monitoring Well
- Groundwater Well Completed in Bedrock
- NTH IRZ Injection Well
- NTH IRZ Extraction Well
- Bat Cave Wash
- Approximate bedrock contact (per depth interval)

Dissolved Selenium Concentrations

- 3 µg/L
- 10.3 µg/L (Background UTL)
- 50.0 µg/L (ARAR)

MW-76-181 — Well ID
1.7 — Dissolved Selenium Concentration in µg/L

N

0 400 800 Feet

Notes:

1. IRZ = In-situ reactive zone
2. µg/L = Micrograms Per Liter
3. NTH = National Trails Highway
4. Fourth Quarter 2021 results are presented (November - December 2021)
5. Selenium background study upper tolerance limit (UTL) = 10.3 µg/L
6. Selenium applicable or relevant and appropriate requirement (ARAR) = 50.0 µg/L
7. ND = not detected at reporting limit
8. J = concentration estimated by laboratory or data validation

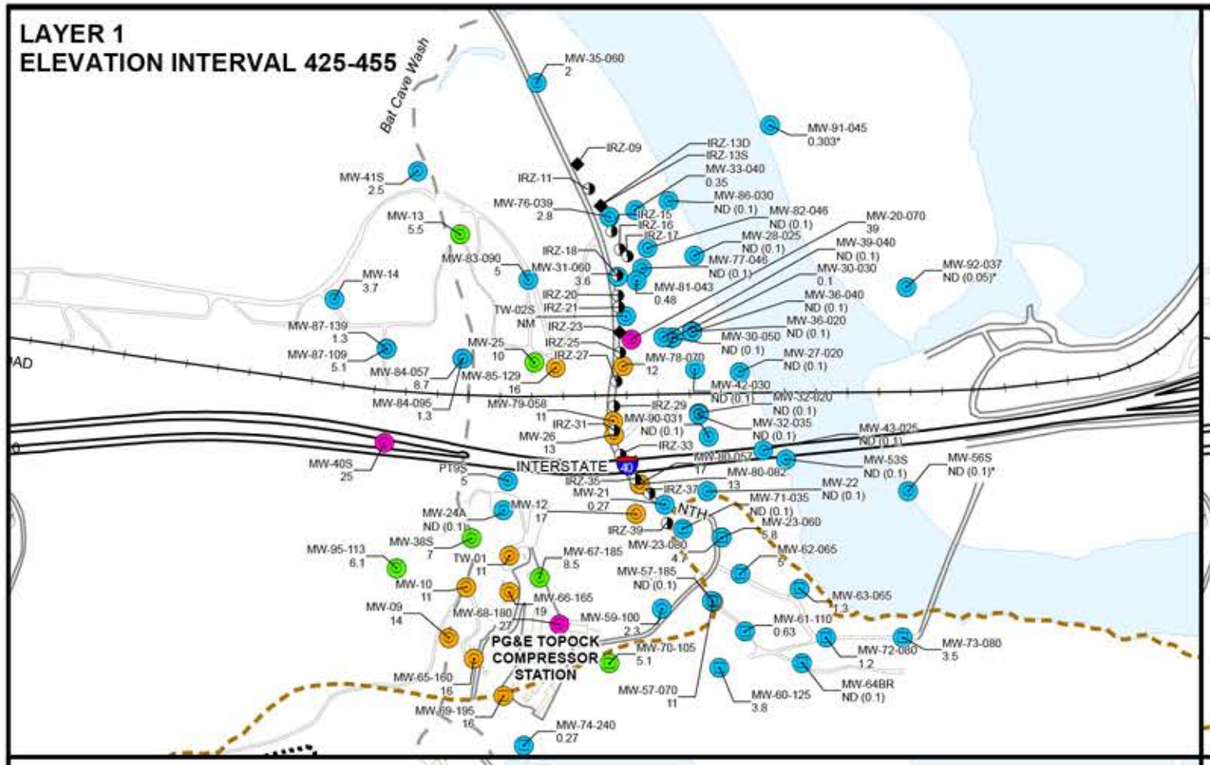
FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

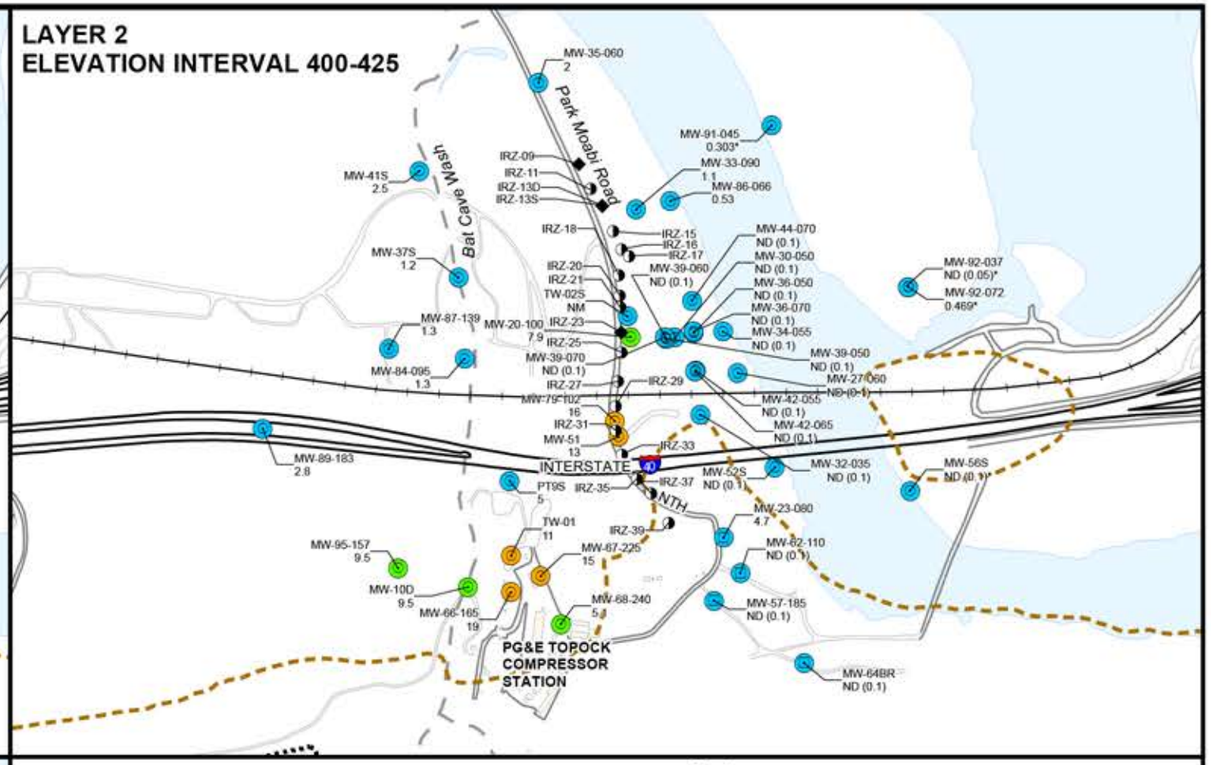
DISSOLVED SELENIUM CONCENTRATIONS IN GROUNDWATER BY ELEVATION INTERVAL

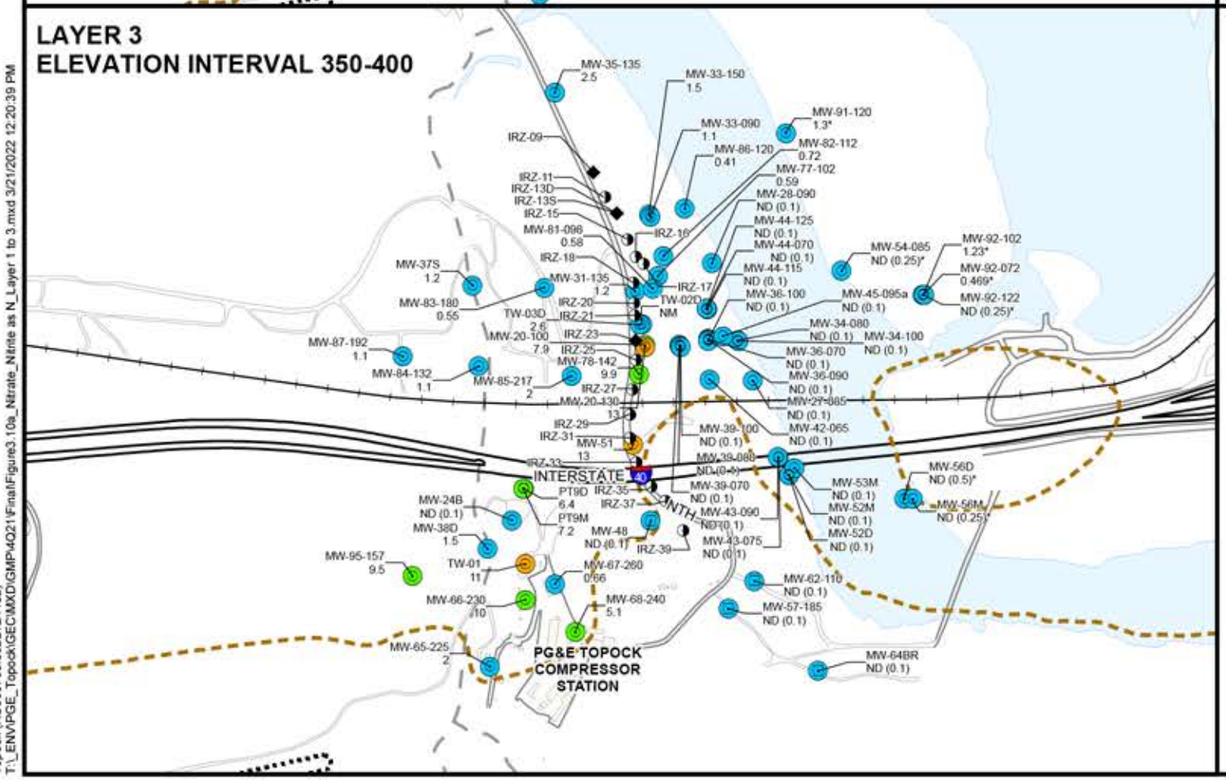
ARCADIS

FIGURE
3.9b

City: Citrix Div/Group: IM Created By: K. SINSABAUGH Last Saved By: ldrum
T:\Topock (RC000753.8002\D 04182)
T:_ENV\PGE_Topock\GEC\MXD\GMP\4Q21\Final\Figure3 9b_Dissolved Selenium_Layer4 and 5.mxd 3/21/2022 12:19:38 PM







LEGEND

- Groundwater Monitoring Well
- Groundwater Well Completed in Bedrock
- NTH IRZ Injection Well
- NTH IRZ Extraction Well
- Bat Cave Wash
- Approximate bedrock contact (per depth interval)

Nitrate/Nitrite as N Concentrations

- 5.03 mg/L (Background UTL)
- 10 mg/L (ARAR)
- 20 mg/L

Notes:

1. IRZ = In-situ reactive zone
2. mg/L = Milligrams Per Liter
3. NTH = National Trails Highway
4. * = nitrate result
5. Fourth Quarter 2021 nitrate/nitrite as nitrogen (N) results are presented (November - December 2021)
6. Nitrate background study upper tolerance limit (UTL) = 5.03 mg/L
7. Nitrate applicable or relevant and appropriate requirement (ARAR) = 10.0 mg/L
8. ND = not detected at reporting limit

MW-20-070 —— Well ID
39 —— Nitrate/Nitrite as N concentration in mg/L

N

0 400 800 Feet

FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

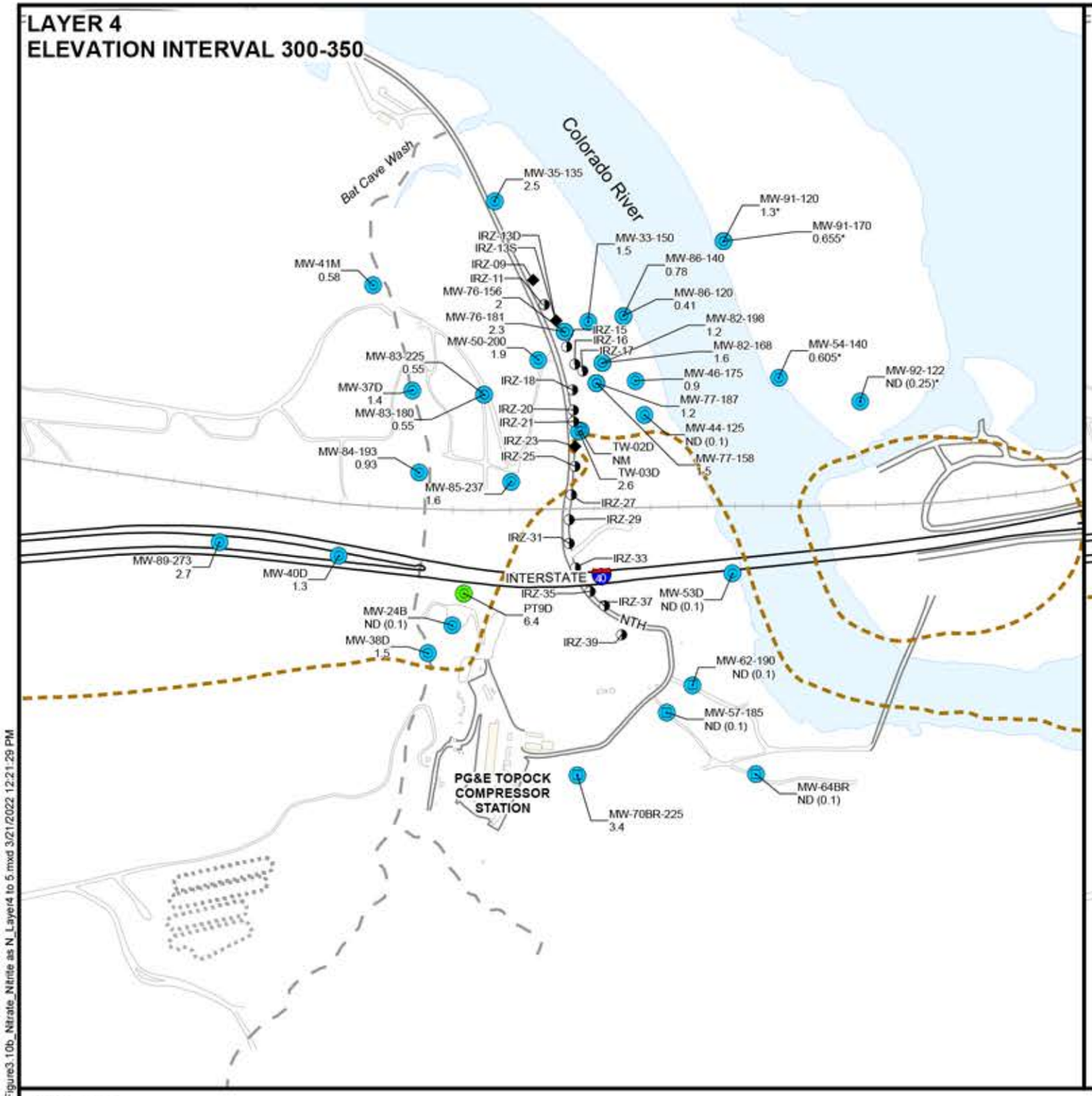
NITRATE/NITRITE AS N CONCENTRATIONS IN GROUNDWATER BY ELEVATION INTERVAL

ARCADIS

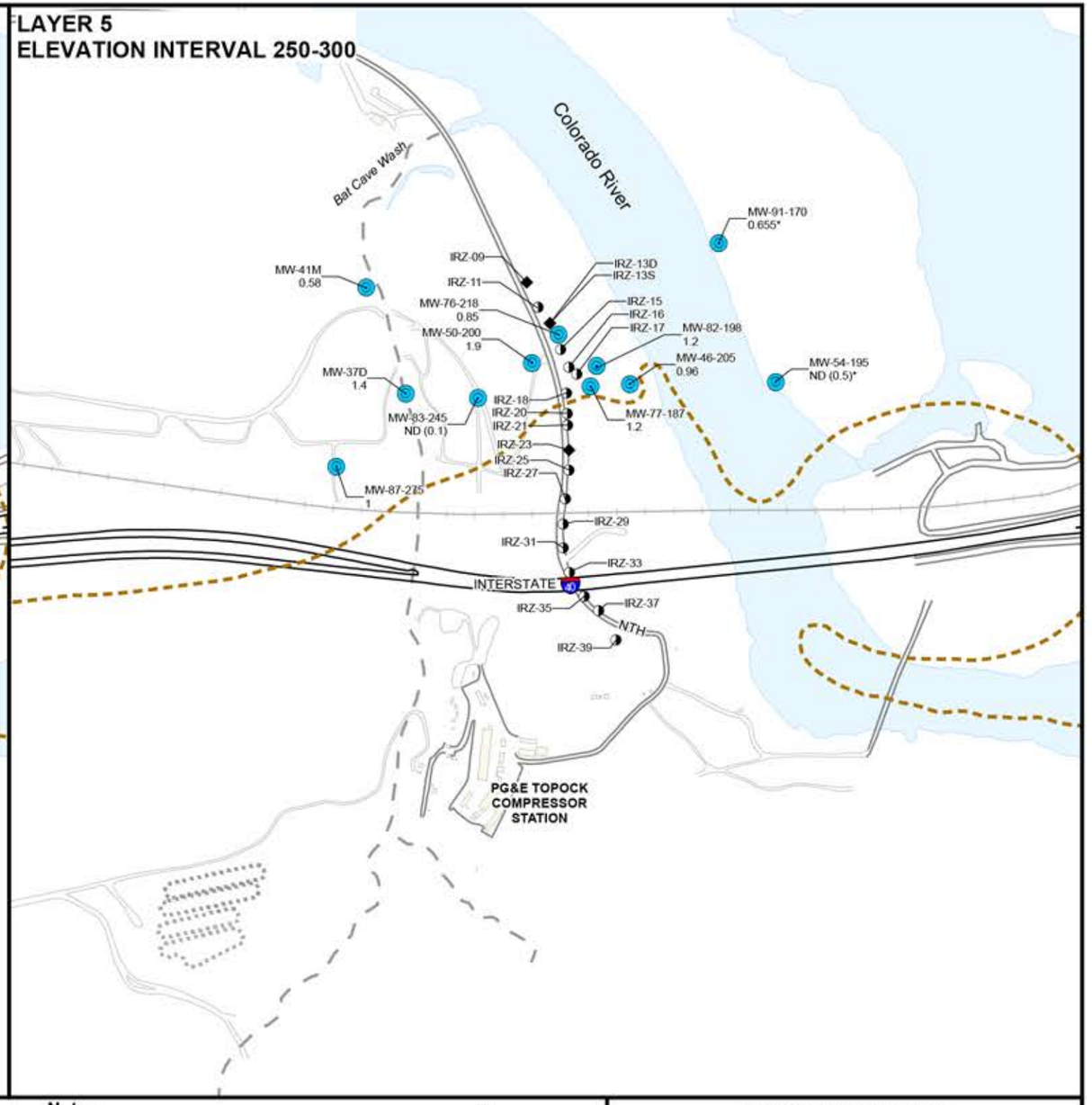
FIGURE 3.10a

City: Citrix Div/Group: IM Created By: K. SINSABAUGH Last Saved By: Idrum
Topock (RC000753.802D Q4182)
T:_ENV\PGE_Topock\GEC\MXD\GMP4Q21\FinalFigure3.10a_Nitrate_Nitrite as N_Layer 1 to 3.mxd 3/21/2022 12:20:39 PM

LAYER 4
ELEVATION INTERVAL 300-350



LAYER 5
ELEVATION INTERVAL 250-300



LEGEND

- Groundwater Monitoring Well
- Groundwater Well Completed in Bedrock
- NTH IRZ Injection Well
- NTH IRZ Extraction Well
- Bat Cave Wash
- Approximate bedrock contact (per depth interval)

Nitrate/Nitrite as N Concentrations

- 5.03 mg/L (Background UTL)
- 10 mg/L (ARAR)
- 20 mg/L

MW-76-181 — Well ID
2.3 — Nitrate/Nitrite as N concentration in mg/L

Notes:

1. IRZ = In-situ reactive zone
2. mg/L = Milligrams Per Liter
3. NTH = National Trails Highway
4. * = nitrate result
4. Fourth Quarter 2021 nitrate/nitrite as nitrogen (N) results are presented (November - December 2021)
5. Nitrate background study upper tolerance limit (UTL) = 5.03 mg/L
6. Nitrate applicable or relevant and appropriate requirement (ARAR) = 10.0 mg/L
7. ND = not detected at reporting limit

N

0 400 800
Feet

FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

NITRATE/NITRITE AS N CONCENTRATIONS IN GROUNDWATER BY ELEVATION INTERVAL

ARCADIS

FIGURE
3.10b

City: Citrix Dw/Group: IM Created By: K. SINSABAUGH Last Saved By: ldrum
Topock (R0090753.802\D 04182)
TI_ENV\PGE_Topock\GECMXD\GMP\4Q21\Final\Figure3.10b_Nitrate_Nitrite as N_Layer4 to 5.mxd 3/21/2022 12:21:29 PM

Appendix A

Fourth Quarter 2021 Field Parameters

Appendix A
Fourth Quarter 2021 Field Parameters
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Well ID	Sample Date	pH	Specific Conductance (µS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (deg C)	Salinity (ppt)	Total Dissolved Solids (mg/L)	ORP (mV)
C-BNS	11/17/2021	8.2	970	2.0	9.61	17.10	0.48	630	142.9
C-CON-D	11/18/2021	8.3	976	2.0	9.27	16.50	0.48	630	137.9
C-CON-S	11/18/2021	8.2	971	2.0	9.02	16.50	0.48	630	138.4
C-I-3-D	11/17/2021	8.1	962	2.0	9.33	17.00	0.48	620	143.9
C-I-3-S	11/17/2021	8.2	963	2.0	9.19	17.00	0.48	620	144.5
C-MAR-D	11/18/2021	8.2	986	5.0	9.96	16.10	0.49	640	121.9
C-MAR-S	11/18/2021	8.2	989	4.0	9.16	16.10	0.49	640	125.8
C-NR1-D	11/18/2021	8.3	970	2.0	9.20	16.60	0.48	630	139.7
C-NR1-S	11/18/2021	8.2	971	2.0	9.45	16.60	0.48	630	140.9
C-NR3-D	11/18/2021	8.2	972	2.0	8.75	16.70	0.48	630	141.2
C-NR3-S	11/18/2021	8.2	972	2.0	8.97	16.70	0.48	630	141.4
C-NR4-D	11/18/2021	8.2	971	2.0	9.04	16.70	0.48	630	142.5
C-NR4-S	11/18/2021	8.2	971	2.0	9.07	16.80	0.48	630	142.7
C-R22A-D	11/17/2021	8.2	968	2.0	8.89	17.10	0.48	630	140.9
C-R22A-S	11/17/2021	8.2	970	2.0	8.95	17.10	0.48	630	141.7
C-R27-D	11/17/2021	8.2	971	2.0	8.98	17.10	0.48	630	143.3
C-R27-S	11/17/2021	8.2	969	2.0	9.18	17.10	0.48	630	143.8
C-TAZ-D	11/17/2021	8.0	938	2.0	9.56	17.00	0.47	610	141.9
C-TAZ-S	11/17/2021	8.1	954	2.0	9.49	17.00	0.47	610	144.9
CW-01D	12/01/2021	7.7	6,800	2.0	16.30	28.50	7.31	4,430	101.5
CW-01M	12/01/2021	7.6	7,345	2.0	15.45	29.90	4.00	4,300	92.3
CW-02D	12/06/2021	7.5	7,252	7.0	2.08	27.90	3.97	4,710	31.0
CW-02M	12/06/2021	7.8	7,253	8.0	0.95	28.40	3.97	4,100	34.0
CW-03D	12/06/2021	7.7	7,329	9.0	0.85	27.70	4.04	4,810	3.0
CW-03M	12/06/2021	7.7	7,388	9.0	0.90	27.90	4.05	4,100	23.0
CW-04D	12/01/2021	7.7	7,306	9.0	14.90	29.10	4.00	7,750	101.8
CW-04M	12/01/2021	7.7	7,253	3.0	12.65	29.80	3.94	4,200	96.8
IRZ-23	12/21/2021	7.7	4,614	7.5	6.11	23.60	nm	2,200	85.7
Marina-1	11/16/2021	7.3	28,811	12.0	2.12	26.00	0.18	18720	19.5
MTS-1	11/15/2021	8.8	1,849	15.0	2.35	29.90	0.93	1,200	-29.8
MTS-2	11/15/2021	7.8	2,329	8.0	2.20	31.60	1.18	1,350	22.3
MW-09	12/08/2021	7.5	3,835	8.0	3.27	26.00	2.02	2,500	69.0
MW-10	12/08/2021	7.4	2,889	10.0	4.25	28.60	1.49	1,870	61.0
MW-10D	12/08/2021	7.6	4,359	5.0	4.55	27.70	2.31	2,840	69.0
MW-11	12/09/2021	7.5	2,884	8.0	6.37	31.00	1.48	1,860	-2.0
MW-11D	12/09/2021	7.4	4,960	5.0	4.13	28.50	2.69	3,260	-53.0
MW-12	12/13/2021	7.9	7,002	2.0	3.29	28.60	3.79	4,550	55.5
MW-13	12/07/2021	7.6	3,017	10.0	4.66	28.40	1.56	1,960	93.4
MW-14	12/07/2021	7.5	2,857	9.0	2.75	28.30	1.47	1,840	76.0
MW-15	12/02/2021	7.3	2,391	2.0	5.84	27.20	1.22	1,560	133.6

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MW-19	12/13/2021	7.3	2,339	6.0	5.02	27.30	1.19	1,520	115.9
MW-20-070	12/15/2021	7.5	3,752	3.0	5.15	23.10	1.98	2,430	28.6
MW-20-100	12/15/2021	7.2	2,247	3.0	4.95	20.30	1.16	1,460	49.9
MW-20-130	12/15/2021	7.3	10,289	2.0	1.45	23.40	5.83	6,700	35.2
MW-21	12/16/2021	7.2	11,547	21.0	2.18	26.20	6.56	7,500	-78.0
MW-22	11/30/2021	7.0	11,220	17.0	0.21	27.40	6.35	7,290	-108.6
MW-23-060	12/09/2021	9.5	16,212	7.0	0.70	25.90	9.50	10,560	-23.0
MW-23-080	12/09/2021	10.3	16,350	8.0	0.84	26.20	9.59	10,660	4.0
MW-24A	12/09/2021	7.6	1,440	5.0	0.42	30.80	0.71	930	-172.0
MW-24B	12/09/2021	7.9	19,434	5.0	0.39	29.80	0.11	12,640	-205.0
MW-24BR	12/10/2021	8.1	13,402	5.0	0.29	27.90	7.79	8,810	-198.0
MW-25	12/07/2021	7.5	1,884	9.0	5.41	30.20	0.95	1,220	97.3
MW-26	12/15/2021	7.3	3,522	4.0	4.83	23.80	1.85	2,280	56.1
MW-27-020	12/01/2021	7.7	1,064	7.0	1.01	19.90	0.53	690	7.9
MW-27-060	12/01/2021	7.6	1,130	3.0	0.73	18.40	0.56	730	-94.9
MW-27-085	12/01/2021	7.4	12,447	2.0	0.52	18.90	7.17	8,090	-63.5
MW-28-025	12/08/2021	7.2	1,144	1.0	0.12	22.50	0.57	740	45.1
MW-28-090	12/08/2021	7.1	7,073	14.0	0.00	20.20	3.90	4,600	-84.3
MW-29	12/02/2021	7.3	2,962	3.0	0.28	23.60	1.54	1,930	-140.5
MW-30-030	12/03/2021	7.9	6,039	9.0	1.55	23.30	3.28	3,910	-19.8
MW-30-050	12/03/2021	7.7	1,082	10.0	0.83	22.10	0.54	700	0.3
MW-31-060	12/16/2021	7.5	2,721	4.0	3.10	28.60	1.40	1,760	-63.4
MW-31-135	12/16/2021	7.5	11,220	1.0	0.68	28.10	6.35	7,280	-67.0
MW-32-020	11/30/2021	7.2	19,848	1.0	0.01	26.80	0.12	12,880	-130.2
MW-32-035	11/30/2021	7.2	7,943	4.0	0.00	25.30	4.39	5,160	-148.3
MW-33-040	11/30/2021	7.8	21,578	13.0	0.75	25.60	0.13	14,070	-14.1
MW-33-090	11/30/2021	7.3	9,053	43.0	0.00	26.20	5.05	5,880	45.1
MW-33-150	11/30/2021	7.4	18,256	17.0	1.41	25.50	0.11	11,880	3.7
MW-33-210	11/30/2021	7.5	17,743	2.0	0.04	26.70	0.10	11,530	47.3
MW-34-055	11/02/2021	7.6	973	9.0	0.28	21.80	0.48	630	-102.5
MW-34-055	11/19/2021	7.8	1,041	2.0	0.40	18.30	0.52	680	-106.9
MW-34-055	12/01/2021	7.8	1,049	2.0	0.16	18.60	0.52	680	-90.6
MW-34-080	11/02/2021	7.1	8,532	4.0	0.42	21.50	4.76	5,540	-57.4
MW-34-080	11/19/2021	7.3	9,536	3.0	0.75	18.60	5.38	6,200	-69.5
MW-34-080	12/01/2021	7.3	9,629	2.0	0.42	19.10	5.43	6,260	-89.4
MW-34-100	11/02/2021	7.2	12,267	21.0	0.90	20.40	7.04	7,960	-46.6
MW-34-100	11/19/2021	7.7	13,539	3.0	0.74	18.50	7.86	8,810	-68.5
MW-34-100	12/01/2021	7.7	13,769	3.0	0.14	18.90	7.98	8,920	-85.8
MW-35-060	12/06/2021	7.6	6,739	37.0	0.56	27.40	3.67	4,370	123.5
MW-35-135	12/06/2021	7.7	10,451	39.0	0.08	27.10	5.88	6,790	45.6

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MW-36-020	11/01/2021	7.1	4,988	7.0	0.92	24.10	2.68	3,240	-126.5
MW-36-020	11/18/2021	7.3	4,971	9.0	0.77	22.50	2.67	3,230	-122.3
MW-36-020	12/03/2021	7.3	4,738	8.0	0.83	21.90	2.55	3,090	-116.5
MW-36-040	11/01/2021	7.7	1,071	2.0	0.36	22.90	0.53	690	-115.0
MW-36-040	11/18/2021	7.8	1,126	8.0	0.61	20.50	0.56	730	-167.4
MW-36-040	12/03/2021	8.0	1,086	8.0	0.66	21.20	0.54	700	-167.4
MW-36-050	11/01/2021	7.4	991	11.0	0.37	23.10	0.49	640	-96.7
MW-36-050	11/18/2021	7.5	1,047	3.0	0.66	20.10	0.52	680	-81.2
MW-36-050	12/03/2021	7.6	1,040	3.0	0.18	19.50	0.52	670	-116.6
MW-36-070	11/01/2021	7.5	1,006	3.0	0.56	24.30	0.50	650	-24.9
MW-36-070	11/18/2021	7.7	1,067	4.0	1.01	19.90	0.63	690	-22.8
MW-36-070	12/03/2021	7.6	1,051	4.0	0.80	19.60	0.52	680	-83.5
MW-36-090	11/01/2021	7.2	5,502	6.0	0.64	23.00	2.98	3,570	-7.1
MW-36-090	11/18/2021	7.3	5,604	3.0	0.51	20.30	3.03	3,630	-7.7
MW-36-090	12/03/2021	7.4	5,108	3.0	0.49	20.50	2.75	3,320	-2.8
MW-36-100	11/01/2021	7.1	11,128	6.0	0.74	23.50	6.30	7,200	-20.2
MW-36-100	11/18/2021	7.2	8,035	6.0	0.42	20.40	4.40	5,240	-44.2
MW-36-100	12/03/2021	7.3	8,532	4.0	0.25	19.70	4.72	5,490	-41.8
MW-37D	12/07/2021	7.7	11,500	8.0	2.04	27.80	6.50	7,460	-49.0
MW-37S	12/07/2021	7.7	7,310	8.0	1.43	27.50	4.00	4,750	23.0
MW-38D	12/08/2021	7.7	17,886	42.0	0.72	29.50	0.11	11,650	67.0
MW-38S	12/08/2021	8.0	1,329	8.0	4.58	29.50	0.68	940	46.0
MW-39-040	12/07/2021	8.1	1,028	29.0	0.00	22.10	0.51	660	-171.0
MW-39-050	12/07/2021	7.7	913	2.0	0.00	21.80	0.45	590	69.4
MW-39-060	12/07/2021	7.8	948	50.0	0.00	21.30	0.47	610	62.4
MW-39-070	12/07/2021	7.7	1,800	1.0	0.00	21.80	0.91	1,170	48.4
MW-39-080	12/07/2021	7.5	4,328	1.0	0.00	21.90	2.31	2,810	57.5
MW-39-100	12/07/2021	7.2	11,024	15.0	0.00	21.80	6.27	7,160	60.9
MW-40D	12/06/2021	7.5	15,577	1.0	0.76	31.20	9.00	10,100	-92.1
MW-40S	12/06/2021	7.9	1,898	5.0	6.94	32.30	0.95	1,230	26.3
MW-41D	12/07/2021	7.6	17,158	3.0	0.68	27.80	0.10	11,160	-95.0
MW-41M	12/07/2021	7.6	13,702	3.0	0.81	28.10	7.88	8,910	-49.0
MW-41S	12/07/2021	7.8	6,833	14.0	1.94	27.70	3.73	4,450	4.0
MW-42-030	11/30/2021	7.8	2,605	2.0	0.19	24.10	1.34	1,690	-147.5
MW-42-055	11/30/2021	7.8	946	1.0	0.10	22.60	0.46	610	-116.3
MW-42-065	11/30/2021	7.5	4,042	13.0	0.00	22.00	2.14	2,610	-36.5
MW-43-025	11/30/2021	7.3	2,035	7.0	0.46	22.50	1.02	1,350	-117.5
MW-43-075	11/30/2021	7.4	12,194	9.0	0.52	21.10	7.03	7,967	-118.9
MW-43-090	11/30/2021	7.3	19,646	6.0	0.83	21.50	0.12	12,760	-100.5
MW-44-070	11/02/2021	7.3	1,866	7.0	0.63	22.50	0.95	1,200	-83.8

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MW-44-070	11/19/2021	7.4	1,347	5.0	0.26	20.50	0.68	870	-47.8
MW-44-070	12/08/2021	7.4	1,212	3.0	0.00	21.30	0.60	780	-48.6
MW-44-115	11/02/2021	7.6	11,132	11.0	5.75	21.10	6.34	7,240	25.6
MW-44-115	11/19/2021	7.6	10,814	6.0	0.77	20.40	6.14	7,020	26.7
MW-44-115	12/08/2021	7.6	10,846	1.0	0.06	21.60	6.16	7,050	-16.2
MW-44-125	11/02/2021	7.8	12,733	7.0	0.20	22.00	7.31	8,260	-108.3
MW-44-125	11/19/2021	7.3	2,578	2.0	0.43	20.50	1.34	1,680	-75.8
MW-44-125	12/08/2021	7.9	12,703	1.0	0.02	21.50	7.31	8,260	-175.9
MW-45-095a	12/01/2021	7.2	7,395	3.0	0.16	19.70	4.10	4,820	-67.1
MW-46-175	11/02/2021	7.6	18,233	19.0	1.33	24.70	0.11	11,910	6.8
MW-46-175	11/19/2021	8.3	18,352	11.0	0.82	22.80	0.11	11,920	7.2
MW-46-175	12/08/2021	8.1	18,205	30.0	0.01	20.60	0.11	11,830	163.4
MW-46-205	12/08/2021	8.1	21,108	1.0	0.02	20.60	0.13	13,720	164.3
MW-47-055	12/06/2021	7.6	5,120	17.0	0.85	27.70	2.74	3,320	119.5
MW-47-115	12/06/2021	7.6	13,001	13.0	0.00	28.00	7.44	8,450	52.4
MW-48	12/15/2021	6.9	16,286	8.0	6.77	24.60	9.54	10,580	237.9
MW-49-135	12/02/2021	7.7	15,296	2.0	0.46	23.30	8.91	9,930	-43.9
MW-49-275	12/02/2021	8.2	27,322	3.0	0.75	24.20	0.17	17,730	-67.1
MW-49-365	12/02/2021	7.8	40,934	2.0	0.28	23.90	0.26	26,680	-135.7
MW-50-095	12/13/2021	7.8	7,242	3.0	1.15	25.90	3.98	4,690	70.5
MW-50-200	12/13/2021	7.7	22,751	4.0	0.56	27.20	0.14	14,770	16.3
MW-51	12/15/2021	7.4	12,262	3.0	3.84	25.30	7.01	7,960	77.5
MW-52D	11/30/2021	7.4	23,689	3.0	0.84	17.90	0.14	15,390	-74.9
MW-52M	11/30/2021	7.0	18,112	3.0	0.24	19.00	0.11	11,770	-145.1
MW-52S	11/30/2021	6.9	12,745	9.0	0.36	19.10	7.29	8,230	-136.2
MW-53D	11/30/2021	7.2	28,980	3.0	0.72	19.20	0.18	18,810	-119.9
MW-53M	11/30/2021	7.6	21,415	3.0	0.30	19.10	0.13	13,950	-159.8
MW-53S	11/30/2021	7.3	1,618	2.0	0.52	18.90	0.82	1,050	-164.3
MW-54-085	12/14/2021	7.5	8,653	6.0	0.23	27.70	4.79	5,610	-117.8
MW-54-140	12/14/2021	7.8	14,270	2.0	0.30	25.30	9.28	9,270	-108.2
MW-54-195	12/14/2021	8.0	21,095	2.0	0.32	24.30	0.13	13,720	-115.3
MW-55-045	12/14/2021	7.9	1,237	2.0	0.00	26.40	0.61	800	-25.4
MW-55-120	12/14/2021	8.1	6,695	1.0	0.84	25.50	3.67	4,340	111.8
MW-56D	12/14/2021	7.5	20,330	1.0	0.15	22.00	0.12	13,210	-70.7
MW-56M	12/14/2021	7.3	13,514	1.0	0.00	21.60	7.82	8,800	-126.4
MW-56S	12/14/2021	7.2	5,684	1.0	0.00	21.90	3.08	3,690	-135.5
MW-57-070	12/10/2021	7.0	2,666	25.0	4.46	28.50	1.37	1,730	-31.8
MW-57-185	12/10/2021	8.7	17,959	9.0	0.41	27.20	0.11	11,640	-17.2
MW-58BR	12/09/2021	7.6	8,327	26.0	0.55	25.70	4.63	5,420	-110.0
MW-59-100	12/15/2021	7.1	12,550	23.0	4.58	31.20	7.14	8,150	161.3

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Well ID	Sample Date	pH	Specific Conductance (µS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (deg C)	Salinity (ppt)	Total Dissolved Solids (mg/L)	ORP (mV)
MW-60-125	12/16/2021	7.2	7,946	18.0	1.40	31.80	4.36	5,150	-70.9
MW-60BR-245	12/16/2021	8.4	18,032	1.0	1.21	26.50	0.11	11,670	-73.0
MW-61-110	12/10/2021	7.4	16,619	3.0	0.47	30.50	9.72	10,860	23.6
MW-62-065	12/15/2021	7.4	7,093	6.0	3.85	24.90	3.90	4,610	88.1
MW-62-110	12/01/2021	7.5	14,809	2.0	0.22	26.70	8.46	9,490	-155.8
MW-62-190	12/01/2021	7.5	20,912	2.0	0.29	26.80	0.12	13,540	-169.7
MW-63-065	12/16/2021	7.2	7,219	6.0	4.41	19.60	3.99	4,690	85.1
MW-64BR	12/16/2021	7.5	13,902	1.0	0.41	22.10	8.03	9,010	-160.1
MW-65-160	12/08/2021	7.2	4,564	25.0	3.54	26.40	2.43	2,960	-67.1
MW-65-225	12/08/2021	7.3	17,383	31.0	0.36	29.30	0.10	11,300	-72.7
MW-66-165	12/07/2021	7.5	3,407	46.0	5.03	32.50	1.77	2,220	-76.3
MW-66-230	12/07/2021	7.9	20,943	46.0	0.52	30.00	0.12	13,620	-88.4
MW-66BR-270	12/16/2021	9.0	17,543	17.0	0.38	29.80	0.10	11,410	-144.8
MW-67-185	12/07/2021	7.3	4,880	856.0	1.15	26.80	2.61	3,170	-65.4
MW-67-225	12/07/2021	7.4	8,157	49.0	2.47	28.90	4.51	5,320	-71.2
MW-67-260	12/07/2021	11.3	17,273	43.0	0.50	27.80	0.10	11,210	-106.8
MW-68-180	11/02/2021	7.2	5,417	17.0	1.55	31.20	2.91	3,530	50.3
MW-68-180	12/07/2021	7.2	4,909	23.0	0.60	26.70	2.62	3,190	-56.5
MW-68-240	12/07/2021	7.0	16,950	18.0	0.63	31.50	9.88	11,010	-61.0
MW-68BR-280	12/02/2021	8.9	24,180	2.0	0.34	32.20	0.15	15,720	-146.5
MW-69-195	12/08/2021	7.4	3,255	21.0	1.36	25.40	1.68	2,090	-70.4
MW-70-105	12/09/2021	7.8	3,394	29.0	1.54	31.70	1.76	2,200	-107.1
MW-70BR-225	12/09/2021	7.5	13,398	19.0	0.32	29.10	7.66	8,710	-105.4
MW-70BR-287	12/09/2021	8.5	16,373	19.0	0.44	28.90	9.53	10,630	-112.4
MW-71-035	12/16/2021	6.9	17,041	25.0	0.93	24.30	8.31	9,440	-67.9
MW-72-080	12/09/2021	7.6	16,192	9.0	0.74	28.20	9.47	10,520	-113.0
MW-72BR-200	12/09/2021	8.0	16,461	42.0	0.37	26.90	9.62	10,710	-128.1
MW-73-080	12/09/2021	7.3	10,102	19.0	0.40	26.80	5.67	6,540	-110.1
MW-74-240	12/08/2021	8.3	911	50.0	1.34	30.10	0.44	590	-54.4
MW-75-033	11/29/2021	7.6	4,245	8.0	2.63	24.90	2.25	2,760	117.7
MW-75-117	11/29/2021	7.7	12,096	45.0	0.15	22.80	6.94	7,884	83.7
MW-75-202	11/29/2021	7.7	16,790	18.0	0.11	26.40	9.83	10,900	-16.9
MW-75-267	11/29/2021	7.9	22,259	11.0	0.13	28.50	0.13	11,470	-104.8
MW-75-337	11/29/2021	8.0	27,398	32.0	0.31	27.20	0.17	17,780	-143.2
MW-76-039	12/02/2021	7.6	3,101	2.0	7.79	28.10	1.61	2,010	110.2
MW-76-156	12/02/2021	7.6	14,930	2.0	2.58	27.90	8.66	9,690	138.2
MW-76-181	12/02/2021	7.5	18,178	2.0	1.63	28.10	0.11	11,800	115.5
MW-76-218	12/02/2021	8.4	17,488	2.0	1.56	28.70	0.11	12,680	109.5
MW-77-046	12/02/2021	7.3	12,886	10.0	1.90	27.00	7.41	8,410	39.0
MW-77-102	12/02/2021	7.4	7,522	2.0	2.50	26.00	4.13	4,940	95.9

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MW-77-158	12/02/2021	7.6	18,374	3.0	1.84	26.50	0.11	11,900	103.9
MW-77-187	12/02/2021	8.2	20,479	2.0	1.72	26.60	0.12	13,400	104.3
MW-78-070	12/15/2021	7.2	2,252	13.0	5.12	29.50	1.14	1,460	-54.1
MW-78-142	12/15/2021	7.3	10,904	24.0	3.34	29.10	6.17	7,070	-70.8
MW-79-058	12/15/2021	7.3	2,870	17.0	3.86	30.60	1.47	1,860	-68.4
MW-79-102	12/15/2021	7.0	7,237	14.0	0.47	29.90	3.92	4,640	-55.6
MW-80-057	12/15/2021	7.4	4,716	3.0	2.56	30.00	2.50	3,060	-63.1
MW-80-082	12/15/2021	7.1	7,071	4.0	1.16	29.10	3.86	4,580	-57.7
MW-81-043	12/13/2021	8.0	6,525	4.0	0.42	26.70	3.54	4,220	-167.1
MW-81-098	12/13/2021	7.4	7,574	5.0	0.30	26.20	4.17	4,910	-149.0
MW-82-046	12/16/2021	7.3	10,343	8.0	0.23	24.30	5.89	6,780	-129.6
MW-82-112	12/16/2021	7.5	9,609	3.0	0.43	24.20	5.40	6,250	-48.9
MW-82-168	12/16/2021	7.3	21,058	6.0	0.25	23.50	0.13	13,690	-91.6
MW-82-198	12/16/2021	8.3	23,496	9.0	0.42	24.30	0.14	15,280	-145.9
MW-83-090	12/16/2021	7.5	1,902	96.0	4.42	29.70	0.96	1,230	127.2
MW-83-180	12/16/2021	7.4	10,353	18.0	0.56	27.50	5.83	6,770	68.1
MW-83-225	12/16/2021	8.1	14,331	123.0	0.57	25.80	8.24	9,290	114.1
MW-83-245	12/16/2021	9.4	18,172	8.0	0.00	29.50	0.11	11,860	36.4
MW-84-057	11/29/2021	7.7	2,116	8.0	16.10	30.20	1.07	1,370	101.9
MW-84-095	11/29/2021	7.4	5,650	9.0	13.18	30.30	3.03	3,650	100.5
MW-84-132	11/29/2021	7.0	7,255	10.0	4.33	29.20	3.98	4,770	109.7
MW-84-193	11/29/2021	7.7	11,525	10.0	6.69	29.90	6.54	7,550	120.8
MW-85-129	11/30/2021	7.4	2,061	9.0	12.00	30.90	1.04	1,330	114.4
MW-85-217	11/30/2021	7.7	12,530	5.0	1.19	29.60	7.12	8,130	156.7
MW-85-237	11/30/2021	7.3	13,426	5.0	0.98	27.40	7.70	8,710	187.0
MW-86-030	12/14/2021	7.5	1,171	2.0	0.06	22.00	0.58	760	-7.5
MW-86-066	12/14/2021	7.5	7,037	1.0	0.00	20.80	3.88	4,560	-5.4
MW-86-120	12/14/2021	7.7	11,331	4.0	0.11	21.00	6.46	7,360	-58.8
MW-86-140	12/14/2021	7.6	15,595	5.0	0.28	21.20	9.13	10,140	-79.2
MW-87-109	11/30/2021	7.6	3,615	2.0	8.14	28.30	1.89	2,350	98.1
MW-87-139	11/30/2021	7.4	7,054	4.0	9.13	27.20	3.86	4,580	99.1
MW-87-192	11/30/2021	7.6	8,654	4.0	6.71	30.30	4.79	5,630	100.9
MW-87-275	11/30/2021	7.7	10,480	4.0	7.97	29.93	5.88	6,810	108.9
MW-88-107	12/08/2021	7.6	2,435	9.0	5.47	29.00	1.25	1,590	67.0
MW-89-183	12/06/2021	7.4	7,115	25.0	6.10	31.60	3.93	4,680	38.4
MW-89-273	12/06/2021	7.4	7,373	23.0	6.80	30.40	4.01	4,790	31.3
MW-90-031	12/08/2021	7.0	11,087	13.0	0.00	25.30	6.29	7,200	-147.6
MW-91-045	12/14/2021	7.7	1,623	6.0	0.40	25.00	0.82	1,050	-48.9
MW-91-120	12/14/2021	7.4	9,009	3.0	0.30	24.70	5.03	5,850	-47.8
MW-91-170	12/14/2021	8.0	10,950	5.0	0.31	24.20	6.20	7,110	-132.3

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MW-91-320	12/14/2021	7.5	27,443	2.0	0.22	24.30	0.17	17,840	-238.6
MW-92-037	12/14/2021	8.4	1,801	2.0	0.21	25.80	0.91	1,170	-174.1
MW-92-072	12/14/2021	8.3	2,599	1.0	0.23	26.40	1.34	1,690	-136.9
MW-92-102	12/14/2021	8.4	3,945	1.0	0.25	24.60	2.08	2,560	-158.3
MW-92-122	12/14/2021	7.9	16,090	2.0	0.18	24.80	9.40	10,440	-193.1
MW-93-050	12/13/2021	7.5	4,728	26.0	0.72	28.00	2.52	3,100	47.0
MW-93-213	12/13/2021	7.3	14,120	20.0	0.38	26.40	8.11	9,120	-53.1
MW-95-113	12/8/2021	7.43	1,509	15	3.15	27.8	nm	nm	69.8
MW-95-157	12/08/2021	7.3	5,890	3.0	4.14	27.50	3.18	3,830	74.0
MW-96-045	12/15/2021	7.5	17,189	8.0	0.25	25.30	9.93	10,950	-68.1
MW-96-217	12/15/2021	7.1	20,932	5.0	0.32	24.10	0.13	13,620	-93.1
MW-97-042	12/13/2021	7.7	3,079	9.0	0.17	27.70	1.60	2,000	-107.2
MW-97-202	12/13/2021	7.4	17,473	2.0	0.05	27.10	0.10	11,370	-150.3
MW-98-055	12/16/2021	7.9	3,981	1.0	1.31	30.00	2.09	2,580	-93.1
MW-98-077	12/16/2021	7.7	6,180	6.0	3.38	28.90	3.39	4,030	-86.9
OW-01D	12/15/2021	7.7	6,542	2.0	5.48	25.90	3.56	4,250	171.8
OW-01M	12/15/2021	7.6	6,548	15.0	6.47	27.90	3.57	4,100	184.4
OW-01S	12/15/2021	6.6	5,778	39.0	5.20	28.30	3.10	3,730	164.6
OW-02D	12/15/2021	7.7	6,522	87.0	7.33	28.00	3.55	4,100	198.2
OW-02M	12/15/2021	7.7	6,510	7.0	6.04	25.00	3.55	4,230	190.4
OW-02S	12/15/2021	7.6	3,557	7.0	5.91	28.80	1.86	2,200	193.0
OW-05D	12/01/2021	7.6	6,807	2.0	13.61	28.80	3.70	4,380	105.5
OW-05M	12/01/2021	7.7	6,703	4.0	14.05	29.10	3.64	4,000	107.9
OW-05S	12/01/2021	7.3	5,614	4.0	6.60	29.10	2.99	3,630	126.4
PGE-08	12/08/2021	8.3	21,422	1.0	0.25	31.80	0.11	13,300	-200.2
PT5D	12/16/2021	7.8	11,569	3.0	0.83	19.80	6.63	7,530	-53.9
PT5M	12/16/2021	7.5	1,954	3.0	1.22	19.80	1.00	1,260	-23.9
PT5S	12/16/2021	7.8	1,403	8.0	0.75	20.60	0.70	910	-112.8
PT8D	12/10/2021	6.9	21,026	5.0	0.48	29.70	0.13	13,660	-86.4
PT9D	12/10/2021	7.7	18,209	17.0	0.82	27.50	0.11	11,830	62.0
PT9M	12/10/2021	6.8	8,290	8.0	0.85	27.50	4.59	5,400	79.0
PT9S	12/10/2021	7.4	4,011	10.0	2.97	28.50	2.26	2,780	60.0
R-19	11/18/2021	8.2	969	2.0	9.01	16.40	0.48	630	131.9
R-28	11/17/2021	8.2	972	2.0	8.78	17.00	0.48	630	143.4
R63	11/17/2021	8.1	967	3.0	9.30	16.70	0.48	620	143.8
RRB	11/18/2021	8.0	1,296	3.0	6.69	14.20	0.65	840	140.8
SW1	11/17/2021	8.0	1,038	7.0	6.67	17.50	0.52	670	141.9
SW2	11/17/2021	7.7	1,021	8.0	5.41	16.20	0.51	660	148.7
TW-01	11/02/2021	7.3	6,727	2.9	2.90	29.50	3.66	4,370	48.0
TW-01	11/11/2021	7.5	3,661	1.0	6.68	25.80	1.88	2,340	120.8

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TW-01	11/15/2021	7.4	6,708	17.0	2.41	30.10	3.63	4,340	27.8
TW-01	11/22/2021	7.5	6,130	3.0	1.54	28.50	3.33	4,004	293.5
TW-01	12/02/2021	7.6	6,066	18.0	1.21	27.70	3.28	3,940	169.0
TW-01	12/08/2021	8.2	6,590	25.0	3.87	30.20	3.57	4,290	-128.6
TW-03D	11/02/2021	7.1	7,635	10.0	2.66	23.70	4.23	4,970	27.9
TW-03D	12/16/2021	7.8	7,189	10.0	1.56	20.30	3.97	4,680	233.3
TW-04	12/06/2021	7.4	17,719	6.0	0.64	26.30	0.10	11,510	148.5
TW-05	12/13/2021	7.6	16,662	3.0	2.09	27.20	9.75	10,820	106.8

Notes:
deg C = degrees Celsius
mg/L = milligrams per liter
mV = millivolts
nm = parameter was not measured
NTU = nephelometric turbidity units
ORP = oxidation-reduction potential
ppt = parts per thousand
µS/cm = microsiemens per centimeter

Appendix B

January 2020 to December 2021 Analytical Results

For additional help with the information provided in Appendix B, please contact Alison Schaffer, Arcadis Report Lead, at 303.471.3575

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Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
C-BNS	01/29/20	N	<0.2	<1	2.2	120	--	--	0.093	<0.02	--	0.0016	4.7	--	1.6	--	--
C-BNS	02/19/20	N	<0.2	<1	2.2	120 J	--	--	0.13 J	0.08 J	--	0.0013	4.6	--	1.6	--	--
C-BNS	04/29/20	N	<0.2	<1	2.2	120	--	--	0.058 J	0.039 J	--	0.00071	4.6	--	1.7	--	--
C-BNS	08/19/20	N	<0.2	<1	2.6	120 J	--	--	0.051 J	0.023 J	--	0.00054	4.7	--	1.5	--	--
C-BNS	11/18/20	N	<0.2	<1	2.4	110	--	--	0.05	<0.02	--	0.00079	4.4	--	1.5	--	--
C-BNS	11/18/20	FD	<0.2	<1	2.4	110	--	--	0.036	<0.02	--	0.001	4.4	--	1.5	--	--
C-BNS	01/27/21	N	<0.2	<1	2.3	120	--	--	0.033	<0.02	--	0.0012	4.7	--	1.7	--	--
C-BNS	02/17/21	N	<0.2	<1	2.5	110	--	--	0.046 J	<0.02 J	--	0.0014	4.7	--	1.6	--	--
C-BNS	05/19/21	N	<0.2	<1	2.2	110	--	--	<0.02	<0.02 J	--	<0.0005	4.4	--	1.4	--	--
C-BNS	08/18/21	N	<0.2	<1	2.3	100	--	--	0.026 J	<0.02	--	<0.0005	4.1	--	1.4	--	--
C-BNS	11/17/21	N	<0.2	<1	3	--	--	--	--	--	--	<0.0005	4.4 J	--	1.9	--	--
C-CON-D	01/30/20	N	<0.2	<1	2.2	120	--	--	0.084	0.027 J	--	0.002 J	4.6	--	1.6	--	--
C-CON-D	02/20/20	N	<0.2	<1	2.1	110	--	--	0.078	0.029	--	0.0014	4.5 J	--	1.4	--	--
C-CON-D	04/30/20	N	<0.2	<1	2.2	110	--	--	0.079	0.031 J	--	0.00082	4.6	--	1.6	--	--
C-CON-D	04/30/20	FD	<0.2	<1	2.1	100	--	--	0.099	0.029 J	--	0.00083	4.4	--	1.7	--	--
C-CON-D	08/20/20	N	<0.2	<1	2.6	110 J	--	--	0.032 J	<0.02 J	--	0.0021	4.8	--	1.6	--	--
C-CON-D	11/19/20	N	<0.2	<1	2.3	110	--	--	0.026	<0.02	--	0.00096	4.7	--	1.7	--	--
C-CON-D	01/28/21	N	<0.2	<1	2.3	120	--	--	0.035	0.024	--	0.00069	4.6	--	1.6	--	--
C-CON-D	02/18/21	N	<0.2	<1	2.2	110	--	--	0.15 J	<0.02 J	--	0.0012	4.6	--	1.4	--	--
C-CON-D	05/20/21	N	<0.2	<1	1.9	110	--	--	<0.02	<0.02	--	<0.0005	4.3	--	1.3	--	--
C-CON-D	08/19/21	N	<0.2	<1	2	98	--	--	0.025	<0.02 J	--	<0.0005	4.1	--	1.4	--	--
C-CON-D	11/18/21	N	<0.2	<1	2.5 J	--	--	--	--	--	--	<0.0005	4.5	--	1.5	--	--
C-CON-S	01/30/20	N	<0.2	<1	2.2	110	--	--	0.053	0.032 J	--	0.0022 J	4.6	--	1.6	--	--
C-CON-S	02/20/20	N	<0.2	<1	2.1	110	--	--	0.067 J	0.028	--	0.0012	4.6 J	--	1.4	--	--
C-CON-S	02/20/20	FD	<0.2	<1	2.3	120 J	--	--	0.088	0.038	--	0.00099	4.7	--	1.6	--	--
C-CON-S	04/30/20	N	<0.2	<1	2.2	110	--	--	0.073	<0.02	--	0.00052	4.5	--	1.5	--	--
C-CON-S	08/20/20	N	<0.2	<1	2.5	110 J	--	--	0.025 J	<0.02 J	--	0.00062	4.5	--	1.4	--	--
C-CON-S	11/19/20	N	<0.2	<1	2.2	110	--	--	0.034	<0.02	--	0.0011	4.5	--	1.6	--	--
C-CON-S	01/28/21	N	<0.2	<1	2.2	120	--	--	0.029	<0.02	--	0.00074	4.6	--	1.5	--	--
C-CON-S	02/18/21	N	<0.2	<1	2.3	120	--	--	0.1 J	<0.02 J	--	0.0011	4.8	--	1.6	--	--
C-CON-S	02/18/21	FD	<0.2	<1	2.5	120	--	--	0.035 J	<0.02 J	--	0.0011	4.8	--	1.7	--	--
C-CON-S	05/20/21	N	<0.2	<1	2.1	110	--	--	<0.02	<0.02	--	<0.0005	4.4	--	1.3	--	--
C-CON-S	08/19/21	N	<0.2	<1	2.2	100	--	--	0.021	<0.02 J	--	<0.0005	4.4	--	1.4	--	--
C-CON-S	11/18/21	N	<0.2	<1	3 J	--	--	--	--	--	--	<0.0005	4.4	--	1.5	--	--
C-CON-S	11/18/21	FD	<0.2	<1	3.2 J	--	--	--	--	--	--	<0.0005	4.5	--	2	--	--
C-I-3-D	01/29/20	N	<0.2	<1	2.1	110	--	--	0.075	<0.02	--	0.0012	4.4	--	1.6	--	--
C-I-3-D	02/19/20	N	<0.2	<1	2.1	120 J	--	--	0.091 J	0.086 J	--	0.00084	4.6	--	1.6	--	--
C-I-3-D	04/29/20	N	<0.2	<1	2.2	120	--	--	0.53 J	0.049 J	--	0.00068	4.5	--	1.6	--	--
C-I-3-D	08/19/20	N	<0.2	<1	2.6	120 J	--	--	0.056 J	0.051 J	--	0.00062	4.8	--	1.6	--	--
C-I-3-D	11/18/20	N	<0.2	<1	2.4	110	--	--	0.09	<0.02	--	0.0013	4.6	--	1.6	--	--
C-I-3-D	01/27/21	N	<0.2	<1	2.3	120	--	--	0.023	<0.02	--	<0.0005	4.6	--	1.6	--	--
C-I-3-D	02/17/21	N	<0.2	<1	2.5	120	--	--	0.07 J	<0.02 J	--	0.0014	4.8	--	1.9	--	--
C-I-3-D	05/19/21	N	<0.2	<1	2.3	110	--	--	<0.02	<0.02 J	--	<0.0005	4.5	--	1.4	--	--
C-I-3-D	08/18/21	N	<0.2	<1	2.1	100	--	--	<0.02	<0.02	--	<0.0005	4.3	--	1.6	--	--
C-I-3-D	11/17/21	N	<0.2	<1	2.5	--	--	--	--	--	--	<0.0005	4.5 J	--	1.5	--	--
C-I-3-S	01/29/20	N	<0.2	<1	2.2	110	--	--	0.12	<0.02	--	0.0011	4.4	--	1.5	--	--
C-I-3-S	02/19/20	N	<0.2	<1	2.2	120 J	--	--	0.075	0.044 J	--	0.0011	4.6	--	1.6	--	--
C-I-3-S	04/29/20	N	<0.2	<1	2.2	120	--	--	0.075 J	0.029 J	--	<0.0005	4.5	--	1.7	--	--
C-I-3-S	08/19/20	N	<0.2 J	<1	2.5	120 J	--	--	0.04 J	0.038 J	--	<0.0005	4.7	--	1.6	--	--
C-I-3-S	11/18/20	N	<0.2	<1	2.5	110	--	--	0.044	<0.02	--	0.001	4.6	--	1.7	--	--
C-I-3-S	01/27/21	N	<0.2	<1	2.3	120	--	--	0.029	0.026 J	--	0.00051	4.9	--	1.7	--	--
C-I-3-S	02/17/21	N	<0.2	<1	2.3	110	--	--	0.069 J	<0.02 J	--	0.0017	4.6	--	1.7	--	--
C-I-3-S	05/19/21	N	<0.2	<1	2	110	--	--	<0.02	<0.02 J	--	<0.0005	4.4	--	1.5	--	--
C-I-3-S	08/18/21	N	<0.2	<1	2.1	100	--	--	0.025 J	<0.02	--	<0.0005	4.2	--	1.4	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
C-BNS	01/29/20	N	--	--	--	--	--	--	0.35	--	--	--
C-BNS	02/19/20	N	--	--	--	--	--	--	0.32	--	--	--
C-BNS	04/29/20	N	--	--	--	--	--	--	0.43	--	--	--
C-BNS	08/19/20	N	--	--	--	--	--	--	0.39	--	--	--
C-BNS	11/18/20	N	--	--	--	--	--	--	0.27	--	--	--
C-BNS	11/18/20	FD	--	--	--	--	--	--	0.28	--	--	--
C-BNS	01/27/21	N	--	--	--	--	--	--	0.27	--	--	--
C-BNS	02/17/21	N	--	--	--	--	--	--	0.42	--	--	--
C-BNS	05/19/21	N	--	--	--	--	--	--	0.36	--	--	--
C-BNS	08/18/21	N	--	--	--	--	--	--	0.36	--	--	--
C-BNS	11/17/21	N	--	--	--	--	--	--	0.29	--	--	--
C-CON-D	01/30/20	N	--	--	--	--	--	--	0.3	--	--	--
C-CON-D	02/20/20	N	--	--	--	--	--	--	0.28	--	--	--
C-CON-D	04/30/20	N	--	--	--	--	--	--	0.34	--	--	--
C-CON-D	04/30/20	FD	--	--	--	--	--	--	0.4	--	--	--
C-CON-D	08/20/20	N	--	--	--	--	--	--	0.43	--	--	--
C-CON-D	11/19/20	N	--	--	--	--	--	--	--	--	--	--
C-CON-D	01/28/21	N	--	--	--	--	--	--	0.44	--	--	--
C-CON-D	02/18/21	N	--	--	--	--	--	--	0.43	--	--	--
C-CON-D	05/20/21	N	--	--	--	--	--	--	0.46	--	--	--
C-CON-D	08/19/21	N	--	--	--	--	--	--	0.37	--	--	--
C-CON-D	11/18/21	N	--	--	--	--	--	--	0.28	--	--	--
C-CON-S	01/30/20	N	--	--	--	--	--	--	0.36	--	--	--
C-CON-S	02/20/20	N	--	--	--	--	--	--	0.33	--	--	--
C-CON-S	02/20/20	FD	--	--	--	--	--	--	0.29	--	--	--
C-CON-S	04/30/20	N	--	--	--	--	--	--	0.43	--	--	--
C-CON-S	08/20/20	N	--	--	--	--	--	--	0.39	--	--	--
C-CON-S	11/19/20	N	--	--	--	--	--	--	--	--	--	--
C-CON-S	01/28/21	N	--	--	--	--	--	--	0.38	--	--	--
C-CON-S	02/18/21	N	--	--	--	--	--	--	0.4	--	--	--
C-CON-S	02/18/21	FD	--	--	--	--	--	--	0.39	--	--	--
C-CON-S	05/20/21	N	--	--	--	--	--	--	0.39	--	--	--
C-CON-S	08/19/21	N	--	--	--	--	--	--	0.38	--	--	--
C-CON-S	11/18/21	N	--	--	--	--	--	--	0.3	--	--	--
C-CON-S	11/18/21	FD	--	--	--	--	--	--	0.28	--	--	--
C-I-3-D	01/29/20	N	--	--	--	--	--	--	0.35	--	--	--
C-I-3-D	02/19/20	N	--	--	--	--	--	--	0.36	--	--	--
C-I-3-D	04/29/20	N	--	--	--	--	--	--	0.43	--	--	--
C-I-3-D	08/19/20	N	--	--	--	--	--	--	0.38	--	--	--
C-I-3-D	11/18/20	N	--	--	--	--	--	--	0.33	--	--	--
C-I-3-D	01/27/21	N	--	--	--	--	--	--	0.28	--	--	--
C-I-3-D	02/17/21	N	--	--	--	--	--	--	0.45	--	--	--
C-I-3-D	05/19/21	N	--	--	--	--	--	--	0.37	--	--	--
C-I-3-D	08/18/21	N	--	--	--	--	--	--	0.36	--	--	--
C-I-3-D	11/17/21	N	--	--	--	--	--	--	0.3	--	--	--
C-I-3-S	01/29/20	N	--	--	--	--	--	--	0.29	--	--	--
C-I-3-S	02/19/20	N	--	--	--	--	--	--	0.35	--	--	--
C-I-3-S	04/29/20	N	--	--	--	--	--	--	0.44	--	--	--
C-I-3-S	08/19/20	N	--	--	--	--	--	--	0.46	--	--	--
C-I-3-S	11/18/20	N	--	--	--	--	--	--	0.44	--	--	--
C-I-3-S	01/27/21	N	--	--	--	--	--	--	0.29	--	--	--
C-I-3-S	02/17/21	N	--	--	--	--	--	--	0.45	--	--	--
C-I-3-S	05/19/21	N	--	--	--	--	--	--	0.41	--	--	--
C-I-3-S	08/18/21	N	--	--	--	--	--	--	0.37	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
C-I-3-S	11/17/21	N	<0.2	<1	2.8	--	--	--	--	--	--	<0.0005	4.5 J	--	1.6	--	--
C-MAR-D	01/30/20	N	<0.2	<1	2.6	130	--	--	1.10	0.38 J	--	0.092 J	5.1	--	1.6	--	--
C-MAR-D	02/20/20	N	<0.2	<1	2.1	110	--	--	0.4 J	0.069	--	0.014	4.7 J	--	1.5	--	--
C-MAR-D	04/30/20	N	<0.2	<1	2.3	110	--	--	0.26	0.048 J	--	0.0021	4.6	--	1.7	--	--
C-MAR-D	08/20/20	N	<0.2	<1	2.5	110 J	--	--	0.15 J	<0.02 J	--	0.0038	4.7	--	1.5	--	--
C-MAR-D	08/20/20	FD	<0.2	<1	2.4	110 J	--	--	0.2 J	<0.02 J	--	0.0025	4.8	--	1.6	--	--
C-MAR-D	11/19/20	N	<0.2	<1	2.3	110	--	--	0.35	<0.02	--	0.0099	4.8	--	1.5	--	--
C-MAR-D	01/28/21	N	<0.2	<1	2.4	130	--	--	0.38	0.028	--	0.021	4.8	--	1.4	--	--
C-MAR-D	02/18/21	N	<0.2	<1	2.4	110	--	--	0.24 J	<0.02 J	--	0.0036	4.8	--	1.6	--	--
C-MAR-D	05/20/21	N	<0.2	<1	1.9	100	--	--	0.042 J	<0.02	--	0.0014	4.4	--	1.3	--	--
C-MAR-D	08/19/21	N	<0.2	<1	2.1	100	--	--	0.19	<0.02 J	--	0.0032	4.3	--	1.5	--	--
C-MAR-D	11/18/21	N	<0.2	<1	3.2 J	--	--	--	--	--	--	0.0047	4.5	--	1.8	--	--
C-MAR-S	01/30/20	N	<0.2	<1	2.7	130	--	--	1.40	0.88 J	--	0.11 J	5	--	1.4	--	--
C-MAR-S	02/20/20	N	<0.2	<1	2.3	120	--	--	0.43 J	0.25	--	0.021	4.7 J	--	1.5	--	--
C-MAR-S	04/30/20	N	<0.2	<1	2.2	110	--	--	0.072	0.022 J	--	0.0019	4.5	--	1.6	--	--
C-MAR-S	08/20/20	N	<0.2	<1	2.6	110 J	--	--	0.2 J	<0.02 J	--	0.0055	4.9	--	1.5	--	--
C-MAR-S	11/19/20	N	<0.2	<1	2.3	110	--	--	0.11	0.021 J	--	0.0034	4.5	--	1.4	--	--
C-MAR-S	01/28/21	N	<0.2	<1	2.4	130	--	--	0.56	0.028	--	0.024	5.1	--	1.5	--	--
C-MAR-S	02/18/21	N	<0.2	<1	2.3	120	--	--	0.14 J	<0.02 J	--	0.003	4.8	--	1.9	--	--
C-MAR-S	02/18/21	FD	<0.2	<1	2.3	120	--	--	0.16 J	<0.02 J	--	0.003	4.8	--	1.5	--	--
C-MAR-S	05/20/21	N	<0.2	<1	1.9	100	--	--	0.029 J	<0.02	--	0.0034	4.4	--	1.4	--	--
C-MAR-S	08/19/21	N	<0.2	<1	2.6	100	--	--	0.15	<0.02 J	--	0.0048	4.3	--	1.5	--	--
C-MAR-S	11/18/21	N	<0.2	<1	3.2 J	--	--	--	--	--	--	0.005	4.6	--	1.6	--	--
C-NR1-D	01/30/20	N	<0.2	<1	2.2	110	--	--	0.057	<0.02 J	--	0.002 J	4.5	--	1.7	--	--
C-NR1-D	02/20/20	N	<0.2	<1	2.1	120	--	--	0.08 J	0.038 J	--	0.00084	4.6 J	--	1.5	--	--
C-NR1-D	04/30/20	N	<0.2	<1	2.2	110	--	--	0.065	0.051 J	--	0.00082	4.6	--	1.6	--	--
C-NR1-D	08/20/20	N	<0.2	<1	2.4	110	--	--	0.15 J	0.2 J	--	0.00051	4.6	--	1.5	--	--
C-NR1-D	11/19/20	N	<0.2	<1	2.4	110	--	--	0.034	<0.02	--	0.00096	4.6	--	1.5	--	--
C-NR1-D	01/28/21	N	<0.2	<1	2.2	120	--	--	0.02	<0.02	--	0.00064	4.7	--	1.6	--	--
C-NR1-D	02/18/21	N	<0.2	<1	2.4	120	--	--	0.071 J	<0.02 J	--	0.0012	4.8	--	1.3	--	--
C-NR1-D	05/20/21	N	<0.2	<1	2	100	--	--	<0.02	<0.02	--	<0.0005	4.3	--	1.1	--	--
C-NR1-D	08/19/21	N	<0.2	<1	1.8	100	--	--	<0.02	<0.02 J	--	<0.0005	4.1	--	1.5	--	--
C-NR1-D	11/18/21	N	<0.2	<1	3.3 J	--	--	--	--	--	--	<0.0005	4.5	--	1.6	--	--
C-NR1-S	01/30/20	N	<0.2	<1	2.1	110	--	--	0.026	0.028 J	--	0.0026 J	4.4	--	1.6	--	--
C-NR1-S	02/20/20	N	<0.2	<1	2.2	120	--	--	0.083 J	<0.02 J	--	0.0011	4.6 J	--	1.5	--	--
C-NR1-S	04/30/20	N	<0.2	<1	2.1	110	--	--	0.061 J	<0.02	--	<0.0005	4.4	--	1.6	--	--
C-NR1-S	04/30/20	FD	<0.2	<1	2.1	100	--	--	0.18 J	<0.02	--	<0.0005	4.6	--	1.7	--	--
C-NR1-S	08/20/20	N	<0.2	<1	2.4	110 J	--	--	0.022 J	<0.02 J	--	0.00059	4.5	--	1.5	--	--
C-NR1-S	11/19/20	N	<0.2	<1	2.3	110	--	--	<0.02	<0.02	--	0.00098	4.5	--	1.5	--	--
C-NR1-S	01/28/21	N	<0.2	<1	2.2	120	--	--	0.023	<0.02	--	0.00062	4.6	--	1.7	--	--
C-NR1-S	02/18/21	N	<0.2	<1	2.4	120	--	--	0.024 J	<0.02 J	--	0.0013	4.8	--	1.7	--	--
C-NR1-S	05/20/21	N	<0.2	<1	1.9	110	--	--	0.02 J	<0.02	--	<0.0005	4.4	--	1.4	--	--
C-NR1-S	08/19/21	N	<0.2	<1	1.7	99	--	--	<0.02	<0.02 J	--	<0.0005	4.2	--	1.4	--	--
C-NR1-S	11/18/21	N	<0.2	<1	3.1 J	--	--	--	--	--	--	<0.0005	4.4	--	2	--	--
C-NR3-D	01/30/20	N	<0.2	<1	2.1	110	--	--	0.054	0.044 J	--	0.0023 J	4.5	--	1.5	--	--
C-NR3-D	01/30/20	FD	<0.2	<1	2.1	110	--	--	0.037	0.031 J	--	0.0021 J	4.4	--	1.6	--	--
C-NR3-D	02/20/20	N	<0.2	<1	2.1	120	--	--	0.12 J	0.066 J	--	0.0017	4.6 J	--	1.6	--	--
C-NR3-D	04/30/20	N	<0.2	<1	2.2	110	--	--	0.049	<0.02	--	<0.0005	4.5	--	1.6	--	--
C-NR3-D	08/20/20	N	<0.2	<1	2.4	110 J	--	--	0.025 J	<0.02 J	--	0.0006	4.6	--	1.4	--	--
C-NR3-D	11/19/20	N	<0.2	<1	2.3	100	--	--	0.022	<0.02	--	0.0007	4.5	--	1.4	--	--
C-NR3-D	01/28/21	N	<0.2	<1	2.2	120	--	--	0.04	<0.02	--	0.0007	4.5	--	1.6	--	--
C-NR3-D	02/18/21	N	<0.2	<1	2.4	120	--	--	0.07 J	<0.02 J	--	0.0011	4.8	--	1.3	--	--
C-NR3-D	05/20/21	N	<0.2	<1	2.1	100	--	--	<0.02	<0.02	--	<0.0005	4.4	--	1.4	--	--
C-NR3-D	08/19/21	N	<0.2	<1	2	99	--	--	<0.02	<0.02 J	--	<0.0005	4.2	--	1.4	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
C-I-3-S	11/17/21	N	--	--	--	--	--	--	0.3	--	--	--
C-MAR-D	01/30/20	N	--	--	--	--	--	--	0.31	--	--	--
C-MAR-D	02/20/20	N	--	--	--	--	--	--	0.35	--	--	--
C-MAR-D	04/30/20	N	--	--	--	--	--	--	0.41	--	--	--
C-MAR-D	08/20/20	N	--	--	--	--	--	--	0.35	--	--	--
C-MAR-D	08/20/20	FD	--	--	--	--	--	--	0.36	--	--	--
C-MAR-D	11/19/20	N	--	--	--	--	--	--	--	--	--	--
C-MAR-D	01/28/21	N	--	--	--	--	--	--	0.42	--	--	--
C-MAR-D	02/18/21	N	--	--	--	--	--	--	0.4	--	--	--
C-MAR-D	05/20/21	N	--	--	--	--	--	--	0.42	--	--	--
C-MAR-D	08/19/21	N	--	--	--	--	--	--	0.36	--	--	--
C-MAR-D	11/18/21	N	--	--	--	--	--	--	0.28	--	--	--
C-MAR-S	01/30/20	N	--	--	--	--	--	--	0.27	--	--	--
C-MAR-S	02/20/20	N	--	--	--	--	--	--	0.28	--	--	--
C-MAR-S	04/30/20	N	--	--	--	--	--	--	0.4	--	--	--
C-MAR-S	08/20/20	N	--	--	--	--	--	--	0.39	--	--	--
C-MAR-S	11/19/20	N	--	--	--	--	--	--	--	--	--	--
C-MAR-S	01/28/21	N	--	--	--	--	--	--	0.41	--	--	--
C-MAR-S	02/18/21	N	--	--	--	--	--	--	0.37	--	--	--
C-MAR-S	02/18/21	FD	--	--	--	--	--	--	0.35	--	--	--
C-MAR-S	05/20/21	N	--	--	--	--	--	--	0.38	--	--	--
C-MAR-S	08/19/21	N	--	--	--	--	--	--	0.35	--	--	--
C-MAR-S	11/18/21	N	--	--	--	--	--	--	0.27	--	--	--
C-NR1-D	01/30/20	N	--	--	--	--	--	--	0.27	--	--	--
C-NR1-D	02/20/20	N	--	--	--	--	--	--	0.35	--	--	--
C-NR1-D	04/30/20	N	--	--	--	--	--	--	0.42	--	--	--
C-NR1-D	08/20/20	N	--	--	--	--	--	--	0.35	--	--	--
C-NR1-D	11/19/20	N	--	--	--	--	--	--	--	--	--	--
C-NR1-D	01/28/21	N	--	--	--	--	--	--	0.4	--	--	--
C-NR1-D	02/18/21	N	--	--	--	--	--	--	0.42	--	--	--
C-NR1-D	05/20/21	N	--	--	--	--	--	--	0.39	--	--	--
C-NR1-D	08/19/21	N	--	--	--	--	--	--	0.37	--	--	--
C-NR1-D	11/18/21	N	--	--	--	--	--	--	0.29	--	--	--
C-NR1-S	01/30/20	N	--	--	--	--	--	--	0.27	--	--	--
C-NR1-S	02/20/20	N	--	--	--	--	--	--	0.35	--	--	--
C-NR1-S	04/30/20	N	--	--	--	--	--	--	0.43	--	--	--
C-NR1-S	04/30/20	FD	--	--	--	--	--	--	0.43	--	--	--
C-NR1-S	08/20/20	N	--	--	--	--	--	--	0.37	--	--	--
C-NR1-S	11/19/20	N	--	--	--	--	--	--	--	--	--	--
C-NR1-S	01/28/21	N	--	--	--	--	--	--	0.35	--	--	--
C-NR1-S	02/18/21	N	--	--	--	--	--	--	0.43	--	--	--
C-NR1-S	05/20/21	N	--	--	--	--	--	--	0.41	--	--	--
C-NR1-S	08/19/21	N	--	--	--	--	--	--	0.36	--	--	--
C-NR1-S	11/18/21	N	--	--	--	--	--	--	0.29	--	--	--
C-NR3-D	01/30/20	N	--	--	--	--	--	--	0.33	--	--	--
C-NR3-D	01/30/20	FD	--	--	--	--	--	--	0.39	--	--	--
C-NR3-D	02/20/20	N	--	--	--	--	--	--	0.27	--	--	--
C-NR3-D	04/30/20	N	--	--	--	--	--	--	0.43	--	--	--
C-NR3-D	08/20/20	N	--	--	--	--	--	--	0.39	--	--	--
C-NR3-D	11/19/20	N	--	--	--	--	--	--	--	--	--	--
C-NR3-D	01/28/21	N	--	--	--	--	--	--	0.4	--	--	--
C-NR3-D	02/18/21	N	--	--	--	--	--	--	0.41	--	--	--
C-NR3-D	05/20/21	N	--	--	--	--	--	--	0.57	--	--	--
C-NR3-D	08/19/21	N	--	--	--	--	--	--	0.38	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
C-NR3-D	11/18/21	N	<0.2	<1	3.2 J	--	--	--	--	--	--	<0.0005	4.6	--	1.7	--	--
C-NR3-D	11/18/21	FD	<0.2	<1	3.1 J	--	--	--	--	--	--	<0.0005	4.4	--	1.7	--	--
C-NR3-S	01/30/20	N	<0.2	<1	2	110	--	--	0.097	0.051 J	--	0.0017 J	4.3	--	1.6	--	--
C-NR3-S	02/20/20	N	<0.2	<1	2.2	120	--	--	0.091 J	0.02 J	--	0.0013	4.7 J	--	1.5	--	--
C-NR3-S	04/30/20	N	<0.2	<1	2	110	--	--	0.03	<0.02	--	<0.0005	4.4	--	1.6	--	--
C-NR3-S	08/20/20	N	<0.2	<1	2.4	110 J	--	--	0.022 J	<0.02 J	--	0.00057	4.6	--	1.5	--	--
C-NR3-S	11/19/20	N	<0.2	<1	2.3	110	--	--	<0.02	<0.02	--	0.00068	4.6	--	1.5	--	--
C-NR3-S	11/19/20	FD	<0.2	<1	2.2	100	--	--	0.022	<0.02	--	0.00067	4.5	--	1.5	--	--
C-NR3-S	01/28/21	N	<0.2	<1	2.4	120	--	--	0.084	0.025	--	0.00084	4.6	--	1.5	--	--
C-NR3-S	01/28/21	FD	<0.2	<1	2.3	120	--	--	0.026	<0.02	--	0.00061	4.4	--	1.6	--	--
C-NR3-S	02/18/21	N	<0.2	<1	2.5	120	--	--	0.032 J	<0.02 J	--	0.0013	4.8	--	1.5	--	--
C-NR3-S	05/20/21	N	<0.2	<1	2.1	110	--	--	<0.02	<0.02	--	<0.0005	4.5	--	1.3	--	--
C-NR3-S	08/19/21	N	<0.2	<1	2.4	100	--	--	<0.02	<0.02 J	--	<0.0005	4.2	--	1.5	--	--
C-NR3-S	11/18/21	N	<0.2	<1	3.2 J	--	--	--	--	--	--	<0.0005	4.5	--	1.8	--	--
C-NR4-D	01/30/20	N	<0.2	<1	2.1	110	--	--	0.065	<0.02 J	--	0.0015 J	4.3	--	1.5	--	--
C-NR4-D	02/20/20	N	<0.2	<1	2.1	120	--	--	0.072 J	0.022 J	--	0.001	4.7 J	--	1.5	--	--
C-NR4-D	04/30/20	N	<0.2	<1	2.1	110	--	--	0.049	0.035 J	--	<0.0005	4.5	--	1.6	--	--
C-NR4-D	08/20/20	N	<0.2 J	<1	2.4	110 J	--	--	0.021 J	<0.02 J	--	0.00071	4.7	--	1.5	--	--
C-NR4-D	08/20/20	FD	<0.2	<1	2.4	110 J	--	--	0.027 J	<0.02 J	--	0.001	4.7	--	1.6	--	--
C-NR4-D	11/19/20	N	<0.2	<1	2.3	110	--	--	<0.02	<0.02	--	0.00057	4.7	--	1.5	--	--
C-NR4-D	01/28/21	N	<0.2	<1	2.3	120	--	--	0.058	<0.02	--	0.00073	4.7	--	1.6	--	--
C-NR4-D	01/28/21	FD	<0.2	<1	2.3	120	--	--	<0.02	<0.02	--	0.00085	4.6	--	1.5	--	--
C-NR4-D	02/18/21	N	<0.2	<1	2.4	110	--	--	0.031 J	<0.02 J	--	0.00099	4.7	--	1.6	--	--
C-NR4-D	05/20/21	N	<0.2	<1	1.9	100	--	--	0.027 J	<0.02	--	<0.0005	4.4	--	1.3	--	--
C-NR4-D	05/20/21	FD	<0.2	<1	2.1	100	--	--	<0.02	<0.02	--	<0.0005	4.3	--	1.2	--	--
C-NR4-D	08/19/21	N	<0.2	<1	2.4	100	--	--	0.024	<0.02 J	--	<0.0005	4.2	--	1.3	--	--
C-NR4-D	08/19/21	FD	<0.2	<1	2	110	--	--	<0.02	<0.02 J	--	<0.0005	4.2	--	1.4	--	--
C-NR4-D	11/18/21	N	<0.2	<1	3.2 J	--	--	--	--	--	--	<0.0005	4.7	--	1.8	--	--
C-NR4-S	01/30/20	N	<0.2	<1	2.1	110	--	--	0.038	0.022 J	--	0.0015 J	4.4	--	1.5	--	--
C-NR4-S	02/20/20	N	<0.2	<1	2.1	110	--	--	0.12 J	0.03	--	0.0011	4.5 J	--	1.5	--	--
C-NR4-S	04/30/20	N	<0.2	<1	2.2	110	--	--	0.042	<0.02	--	0.00053	4.5	--	1.6	--	--
C-NR4-S	08/20/20	N	<0.2	<1	2.5	110 J	--	--	0.031 J	<0.02 J	--	0.00065	4.7	--	1.5	--	--
C-NR4-S	11/19/20	N	<0.2	<1	2.4	120	--	--	<0.02	<0.02	--	0.00062	4.7	--	1.7	--	--
C-NR4-S	01/28/21	N	<0.2	<1	2.3	120	--	--	0.032	0.032	--	0.00073	4.7	--	1.6	--	--
C-NR4-S	02/18/21	N	<0.2	<1	2.2	120	--	--	0.071 J	<0.02 J	--	0.0011	4.9	--	1.6	--	--
C-NR4-S	05/20/21	N	<0.2	<1	2.1	110	--	--	<0.02	<0.02	--	<0.0005	4.5	--	1.3	--	--
C-NR4-S	08/19/21	N	<0.2	<1	1.9	99	--	--	<0.02	<0.02 J	--	<0.0005	4.2	--	1.6	--	--
C-NR4-S	11/18/21	N	<0.2	<1	3.1 J	--	--	--	--	--	--	<0.0005	4.4	--	2	--	--
C-R22A-D	01/29/20	N	<0.2	<1	2.2	120	--	--	0.13	<0.02	--	0.0026	4.8	--	1.6	--	--
C-R22A-D	02/19/20	N	<0.2	<1	2.2	120 J	--	--	0.13 J	0.11 J	--	0.0012	4.5	--	1.6	--	--
C-R22A-D	04/29/20	N	<0.2	<1	2.2	110	--	--	0.43 J	0.035 J	--	0.00088	4.4	--	1.6	--	--
C-R22A-D	08/19/20	N	<0.2	<1	2.4	110 J	--	--	0.047 J	0.037 J	--	0.00065	4.6	--	1.4	--	--
C-R22A-D	11/18/20	N	<0.2	<1	2.2	110	--	--	0.025	<0.02	--	0.0018	4.3	--	1.6	--	--
C-R22A-D	01/27/21	N	<0.2	<1	2.2	110	--	--	0.029	0.024 J	--	0.0023	4.7	--	1.6	--	--
C-R22A-D	02/17/21	N	<0.2	<1	2.3	110	--	--	0.048 J	0.034 J	--	0.0024	4.8	--	1.9	--	--
C-R22A-D	05/19/21	N	<0.2	<1	2	110	--	--	<0.02	<0.02 J	--	0.00088	4.7	--	1.5	--	--
C-R22A-D	08/18/21	N	<0.2	<1	2	100	--	--	0.021 J	<0.02	--	<0.0005	4.1	--	1.2	--	--
C-R22A-D	11/17/21	N	<0.2	<1	2.6	--	--	--	--	--	--	0.00058	4.5 J	--	1.5	--	--
C-R22A-S	01/29/20	N	<0.2	<1	2.3	120	--	--	0.12	<0.02	--	0.0027	4.6	--	1.6	--	--
C-R22A-S	01/29/20	FD	<0.2	<1	2.3	130	--	--	0.16	0.027	--	0.0029	4.9	--	1.6	--	--
C-R22A-S	02/19/20	N	<0.2	<1	2.2	120 J	--	--	0.09	0.032 J	--	0.0014	4.7	--	1.6	--	--
C-R22A-S	04/29/20	N	<0.2	<1	2.2	110	--	--	0.088 J	<0.02 J	--	0.00058	4.5	--	1.5	--	--
C-R22A-S	08/19/20	N	<0.2	<1	2.6	110 J	--	--	0.058 J	<0.02 J	--	0.00074	4.8	--	1.4	--	--
C-R22A-S	11/18/20	N	<0.2	<1	2.3	110	--	--	0.06	0.027	--	0.0016	4.4	--	1.5	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
C-NR3-D	11/18/21	N	--	--	--	--	--	--	0.29	--	--	--
C-NR3-D	11/18/21	FD	--	--	--	--	--	--	0.29	--	--	--
C-NR3-S	01/30/20	N	--	--	--	--	--	--	0.33	--	--	--
C-NR3-S	02/20/20	N	--	--	--	--	--	--	0.29	--	--	--
C-NR3-S	04/30/20	N	--	--	--	--	--	--	0.37	--	--	--
C-NR3-S	08/20/20	N	--	--	--	--	--	--	0.38	--	--	--
C-NR3-S	11/19/20	N	--	--	--	--	--	--	--	--	--	--
C-NR3-S	11/19/20	FD	--	--	--	--	--	--	--	--	--	--
C-NR3-S	01/28/21	N	--	--	--	--	--	--	0.4	--	--	--
C-NR3-S	01/28/21	FD	--	--	--	--	--	--	0.4	--	--	--
C-NR3-S	02/18/21	N	--	--	--	--	--	--	0.41	--	--	--
C-NR3-S	05/20/21	N	--	--	--	--	--	--	0.42	--	--	--
C-NR3-S	08/19/21	N	--	--	--	--	--	--	0.38	--	--	--
C-NR3-S	11/18/21	N	--	--	--	--	--	--	0.28	--	--	--
C-NR4-D	01/30/20	N	--	--	--	--	--	--	0.36	--	--	--
C-NR4-D	02/20/20	N	--	--	--	--	--	--	0.38	--	--	--
C-NR4-D	04/30/20	N	--	--	--	--	--	--	0.89	--	--	--
C-NR4-D	08/20/20	N	--	--	--	--	--	--	0.44	--	--	--
C-NR4-D	08/20/20	FD	--	--	--	--	--	--	0.54	--	--	--
C-NR4-D	11/19/20	N	--	--	--	--	--	--	--	--	--	--
C-NR4-D	01/28/21	N	--	--	--	--	--	--	0.39	--	--	--
C-NR4-D	01/28/21	FD	--	--	--	--	--	--	0.39	--	--	--
C-NR4-D	02/18/21	N	--	--	--	--	--	--	0.38	--	--	--
C-NR4-D	05/20/21	N	--	--	--	--	--	--	0.42	--	--	--
C-NR4-D	02/18/21	N	--	--	--	--	--	--	0.38	--	--	--
C-NR4-D	05/20/21	N	--	--	--	--	--	--	0.42	--	--	--
C-NR4-D	05/20/21	FD	--	--	--	--	--	--	0.38	--	--	--
C-NR4-D	08/19/21	N	--	--	--	--	--	--	0.39	--	--	--
C-NR4-D	08/19/21	FD	--	--	--	--	--	--	0.36	--	--	--
C-NR4-D	11/18/21	N	--	--	--	--	--	--	0.28	--	--	--
C-NR4-S	01/30/20	N	--	--	--	--	--	--	0.36	--	--	--
C-NR4-S	02/20/20	N	--	--	--	--	--	--	0.37	--	--	--
C-NR4-S	04/30/20	N	--	--	--	--	--	--	0.38	--	--	--
C-NR4-S	08/20/20	N	--	--	--	--	--	--	0.43	--	--	--
C-NR4-S	11/19/20	N	--	--	--	--	--	--	--	--	--	--
C-NR4-S	01/28/21	N	--	--	--	--	--	--	0.37	--	--	--
C-NR4-S	02/18/21	N	--	--	--	--	--	--	0.44	--	--	--
C-NR4-S	05/20/21	N	--	--	--	--	--	--	0.39	--	--	--
C-NR4-S	08/19/21	N	--	--	--	--	--	--	0.36	--	--	--
C-NR4-S	11/18/21	N	--	--	--	--	--	--	0.28	--	--	--
C-R22A-D	01/29/20	N	--	--	--	--	--	--	0.36	--	--	--
C-R22A-D	02/19/20	N	--	--	--	--	--	--	0.33	--	--	--
C-R22A-D	04/29/20	N	--	--	--	--	--	--	0.43	--	--	--
C-R22A-D	08/19/20	N	--	--	--	--	--	--	0.32	--	--	--
C-R22A-D	11/18/20	N	--	--	--	--	--	--	0.25	--	--	--
C-R22A-D	01/27/21	N	--	--	--	--	--	--	0.3	--	--	--
C-R22A-D	02/17/21	N	--	--	--	--	--	--	0.46	--	--	--
C-R22A-D	05/19/21	N	--	--	--	--	--	--	0.39	--	--	--
C-R22A-D	08/18/21	N	--	--	--	--	--	--	0.35	--	--	--
C-R22A-D	11/17/21	N	--	--	--	--	--	--	0.35	--	--	--
C-R22A-S	01/29/20	N	--	--	--	--	--	--	0.35	--	--	--
C-R22A-S	01/29/20	FD	--	--	--	--	--	--	0.36	--	--	--
C-R22A-S	02/19/20	N	--	--	--	--	--	--	0.33	--	--	--
C-R22A-S	04/29/20	N	--	--	--	--	--	--	0.38	--	--	--
C-R22A-S	08/19/20	N	--	--	--	--	--	--	0.3	--	--	--
C-R22A-S	11/18/20	N	--	--	--	--	--	--	0.26	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
C-R22A-S	01/27/21	N	<0.2	<1	2.3	120	--	--	0.032	<0.02	--	0.0022	4.9	--	1.5	--	--
C-R22A-S	02/17/21	N	<0.2	<1	2.3	110	--	--	0.1 J	<0.02 J	--	0.0026	4.6	--	1.8	--	--
C-R22A-S	02/17/21	FD	<0.2	<1	2.2	110	--	--	0.043 J	<0.02 J	--	0.0025	4.5	--	1.7	--	--
C-R22A-S	05/19/21	N	<0.2	<1	2	100	--	--	<0.02	<0.02 J	--	0.0017	4.5	--	1.5	--	--
C-R22A-S	08/18/21	N	<0.2	<1	2.2	100	--	--	<0.02	<0.02	--	<0.0005	4.3	--	1.3	--	--
C-R22A-S	11/17/21	N	<0.2	<1	2.7	--	--	--	--	--	--	<0.0005	4.3 J	--	1.5	--	--
C-R27-D	01/29/20	N	<0.2	<1	2.1	120	--	--	0.18	0.11	--	0.004	4.6	--	1.6	--	--
C-R27-D	02/19/20	N	<0.2	<1	2.1	120 J	--	--	0.26 J	0.039 J	--	0.0021	4.6	--	1.6	--	--
C-R27-D	02/19/20	FD	<0.2	<1	2.2	120 J	--	--	0.19 J	0.061 J	--	0.0011	4.6	--	1.6	--	--
C-R27-D	04/29/20	N	<0.2	<1	2.2	110	--	--	0.071 J	0.047 J	--	0.0011	4.5	--	1.6	--	--
C-R27-D	08/19/20	N	<0.2	<1	2.4	110 J	--	--	0.054 J	0.023 J	--	0.00067	4.6	--	1.5	--	--
C-R27-D	11/18/20	N	<0.2	<1	2.4	110	--	--	0.032	<0.02	--	0.001	4.4	--	1.5	--	--
C-R27-D	01/27/21	N	<0.2	<1	2.3	120	--	--	0.028	<0.02	--	0.0014	4.8	--	1.6	--	--
C-R27-D	02/17/21	N	<0.2	<1	2.2	110	--	--	0.11 J	<0.02 J	--	0.0016	4.7	--	1.7	--	--
C-R27-D	05/19/21	N	<0.2	<1	2.1	110	--	--	<0.02	<0.02 J	--	<0.0005	4.4	--	1.3	--	--
C-R27-D	08/18/21	N	<0.2	<1	1.9	100	--	--	0.023 J	0.021	--	<0.0005	4.3	--	1.5	--	--
C-R27-D	11/17/21	N	<0.2	<1	3	--	--	--	--	--	--	0.00059	4.4 J	--	1.8	--	--
C-R27-S	01/29/20	N	<0.2	<1	2.2	120	--	--	0.17	<0.02	--	0.002	4.6	--	1.5	--	--
C-R27-S	02/19/20	N	<0.2	<1	2.3	120 J	--	--	0.27 J	0.058 J	--	0.0011	4.7	--	1.7	--	--
C-R27-S	04/29/20	N	<0.2	<1	2.2	110	--	--	0.07 J	0.037 J	--	<0.0005 J	4.4	--	1.6	--	--
C-R27-S	04/29/20	FD	<0.2	<1	2.2	120	--	--	0.11 J	0.088 J	--	0.0014 J	4.4	--	1.6	--	--
C-R27-S	08/19/20	N	<0.2 J	<1	2.4	110 J	--	--	0.058 J	0.022 J	--	0.0006	4.6	--	1.4	--	--
C-R27-S	08/19/20	FD	<0.2 J	<1	2.6	120 J	--	--	0.19 J	0.026 J	--	0.00069	4.9	--	1.5	--	--
C-R27-S	11/18/20	N	<0.2	<1	2.5	110	--	--	0.038	<0.02	--	0.00093	4.4	--	1.6	--	--
C-R27-S	01/27/21	N	<0.2	<1	2.1	120	--	--	0.031	<0.02	--	0.0015	4.6	--	1.6	--	--
C-R27-S	02/17/21	N	<0.2	<1	2.4	120	--	--	0.098 J	<0.02 J	--	0.0022	4.7	--	1.6	--	--
C-R27-S	05/19/21	N	<0.2	<1	2.1	100	--	--	<0.02	<0.02 J	--	<0.0005	4.4	--	1.4	--	--
C-R27-S	08/18/21	N	<0.2	<1	2	100	--	--	0.043 J	<0.02	--	<0.0005	4.3	--	1.2	--	--
C-R27-S	11/17/21	N	<0.2	<1	2.9	--	--	--	--	--	--	<0.0005	4.4 J	--	1.9	--	--
C-TAZ-D	01/29/20	N	<0.2	<1	2.2	110	--	--	0.15	0.026	--	0.0022	4.5	--	1.6	--	--
C-TAZ-D	02/19/20	N	<0.2	<1	2.2	120 J	--	--	0.12 J	0.033 J	--	0.0014	4.5	--	1.5	--	--
C-TAZ-D	04/29/20	N	<0.2	<1	2.2	110	--	--	0.065 J	<0.02 J	--	<0.0005	4.4	--	1.6	--	--
C-TAZ-D	08/19/20	N	<0.2	<1	2.5	120 J	--	--	0.053 J	<0.02 J	--	<0.0005	4.6	--	1.5	--	--
C-TAZ-D	11/18/20	N	<0.2	<1	2.4	110	--	--	0.042	<0.02	--	0.0013	4.5	--	1.5	--	--
C-TAZ-D	01/27/21	N	<0.2	<1	2.2	120	--	--	0.034	0.025 J	--	0.00069	4.6	--	1.5	--	--
C-TAZ-D	02/17/21	N	<0.2	<1	2.3	110	--	--	0.15 J	<0.02 J	--	0.0014	4.6	--	1.6	--	--
C-TAZ-D	05/19/21	N	<0.2	<1	2	100	--	--	<0.02	<0.02 J	--	<0.0005	4.4	--	1.4	--	--
C-TAZ-D	08/18/21	N	<0.2	<1	2	100	--	--	0.036 J	<0.02	--	<0.0005	4.2	--	1.4	--	--
C-TAZ-D	08/18/21	FD	<0.2	<1	2.2	98	--	--	0.023 J	<0.02	--	<0.0005	4.2	--	1.4	--	--
C-TAZ-D	11/17/21	N	<0.2	<1	2.9	--	--	--	--	--	--	<0.0005	4.5 J	--	1.8	--	--
C-TAZ-S	01/29/20	N	<0.2	<1	2.2	110	--	--	0.1	<0.02	--	0.0016	4.6	--	1.7	--	--
C-TAZ-S	02/19/20	N	<0.2	<1	2.2	120 J	--	--	0.084 J	0.03 J	--	0.001	4.4	--	1.6	--	--
C-TAZ-S	04/29/20	N	<0.2	<1	2.2	110	--	--	0.28 J	0.031 J	--	0.00055	4.5	--	1.6	--	--
C-TAZ-S	08/19/20	N	<0.2	<1	2.5	110 J	--	--	0.039 J	<0.02 J	--	0.00052	4.6	--	1.5	--	--
C-TAZ-S	11/18/20	N	<0.2	<1	2.4	110	--	--	0.037	<0.02	--	0.0013	4.5	--	1.5	--	--
C-TAZ-S	01/27/21	N	<0.2	<1	2.2	120	--	--	0.061	0.022 J	--	0.00079	4.8	--	1.5	--	--
C-TAZ-S	02/17/21	N	<0.2	<1	2.3	110	--	--	0.34 J	<0.02 J	--	0.0018	4.7	--	1.8	--	--
C-TAZ-S	05/19/21	N	<0.2	<1	2	110	--	--	<0.02	<0.02 J	--	<0.0005	4.3	--	1.5	--	--
C-TAZ-S	08/18/21	N	<0.2	<1	2.2	100	--	--	<0.02	<0.02	--	<0.0005	4.2	--	1.3	--	--
C-TAZ-S	11/17/21	N	<0.2	<1	3.3	--	--	--	--	--	--	<0.0005	4.6 J	--	1.8	--	--
CW-01D	10/08/20	N	0.59	2	1.4	22	1.1	100	0.93 J	0.19 J	21	0.0075	20	10	4.8	1,400	2.4
CW-01D	12/01/21	N	0.51	1.6	<0.1 J	20	1.1	150	--	--	19	<0.0005	24	13 J	7.6	1,400	2.4
CW-01M	10/08/20	N	0.6	<1	1.3	82	1.2	110	0.17 J	0.099 J	14	<0.0005	17	9.7	4.6	1,500	2.5
CW-01M	10/08/20	FD	0.58	<1	1.3	81	1.2	120	0.19 J	0.12 J	14	<0.0005	17	8.9	4.7	1,700	2.5

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
C-R22A-S	01/27/21	N	--	--	--	--	--	--	0.39	--	--	--
C-R22A-S	02/17/21	N	--	--	--	--	--	--	0.46	--	--	--
C-R22A-S	02/17/21	FD	--	--	--	--	--	--	0.51	--	--	--
C-R22A-S	05/19/21	N	--	--	--	--	--	--	0.4	--	--	--
C-R22A-S	08/18/21	N	--	--	--	--	--	--	0.37	--	--	--
C-R22A-S	11/17/21	N	--	--	--	--	--	--	0.3	--	--	--
C-R27-D	01/29/20	N	--	--	--	--	--	--	0.25	--	--	--
C-R27-D	02/19/20	N	--	--	--	--	--	--	0.28	--	--	--
C-R27-D	02/19/20	FD	--	--	--	--	--	--	0.28	--	--	--
C-R27-D	04/29/20	N	--	--	--	--	--	--	0.42	--	--	--
C-R27-D	08/19/20	N	--	--	--	--	--	--	0.34	--	--	--
C-R27-D	11/18/20	N	--	--	--	--	--	--	0.24	--	--	--
C-R27-D	01/27/21	N	--	--	--	--	--	--	0.4	--	--	--
C-R27-D	02/17/21	N	--	--	--	--	--	--	0.46	--	--	--
C-R27-D	05/19/21	N	--	--	--	--	--	--	0.38	--	--	--
C-R27-D	08/18/21	N	--	--	--	--	--	--	0.37	--	--	--
C-R27-D	11/17/21	N	--	--	--	--	--	--	0.3	--	--	--
C-R27-S	01/29/20	N	--	--	--	--	--	--	0.31	--	--	--
C-R27-S	02/19/20	N	--	--	--	--	--	--	0.28	--	--	--
C-R27-S	04/29/20	N	--	--	--	--	--	--	0.39	--	--	--
C-R27-S	04/29/20	FD	--	--	--	--	--	--	0.42	--	--	--
C-R27-S	08/19/20	N	--	--	--	--	--	--	0.34	--	--	--
C-R27-S	08/19/20	FD	--	--	--	--	--	--	0.36	--	--	--
C-R27-S	11/18/20	N	--	--	--	--	--	--	0.3	--	--	--
C-R27-S	01/27/21	N	--	--	--	--	--	--	0.28	--	--	--
C-R27-S	02/17/21	N	--	--	--	--	--	--	0.43	--	--	--
C-R27-S	05/19/21	N	--	--	--	--	--	--	0.43	--	--	--
C-R27-S	08/18/21	N	--	--	--	--	--	--	0.36	--	--	--
C-R27-S	11/17/21	N	--	--	--	--	--	--	0.31	--	--	--
C-TAZ-D	01/29/20	N	--	--	--	--	--	--	0.29	--	--	--
C-TAZ-D	02/19/20	N	--	--	--	--	--	--	0.27	--	--	--
C-TAZ-D	04/29/20	N	--	--	--	--	--	--	0.37	--	--	--
C-TAZ-D	08/19/20	N	--	--	--	--	--	--	0.35	--	--	--
C-TAZ-D	11/18/20	N	--	--	--	--	--	--	0.27	--	--	--
C-TAZ-D	01/27/21	N	--	--	--	--	--	--	0.29	--	--	--
C-TAZ-D	02/17/21	N	--	--	--	--	--	--	0.45	--	--	--
C-TAZ-D	05/19/21	N	--	--	--	--	--	--	0.54	--	--	--
C-TAZ-D	08/18/21	N	--	--	--	--	--	--	0.37	--	--	--
C-TAZ-D	08/18/21	FD	--	--	--	--	--	--	0.35	--	--	--
C-TAZ-D	11/17/21	N	--	--	--	--	--	--	0.3	--	--	--
C-TAZ-S	01/29/20	N	--	--	--	--	--	--	0.35	--	--	--
C-TAZ-S	02/19/20	N	--	--	--	--	--	--	0.32	--	--	--
C-TAZ-S	04/29/20	N	--	--	--	--	--	--	2.5	--	--	--
C-TAZ-S	08/19/20	N	--	--	--	--	--	--	0.43	--	--	--
C-TAZ-S	11/18/20	N	--	--	--	--	--	--	0.28	--	--	--
C-TAZ-S	01/27/21	N	--	--	--	--	--	--	0.26	--	--	--
C-TAZ-S	02/17/21	N	--	--	--	--	--	--	0.42	--	--	--
C-TAZ-S	05/19/21	N	--	--	--	--	--	--	0.38	--	--	--
C-TAZ-S	08/18/21	N	--	--	--	--	--	--	0.37	--	--	--
C-TAZ-S	11/17/21	N	--	--	--	--	--	--	0.31	--	--	--
CW-01D	10/08/20	N	90	<0.2	2,200	2.5	--	--	2.6	500	4,600	--
CW-01D	12/01/21	N	73	--	1,900	2.7	--	--	8.3	510	4,000	--
CW-01M	10/08/20	N	89	<0.2	2,200	2.2	--	--	3 J	510	4,700	--
CW-01M	10/08/20	FD	90	<0.2	2,200	2.2	--	--	5.4 J	510	4,600	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
CW-01M	12/01/21	N	1.2	2.4	<0.1 J	74	0.98	180	--	--	13	0.00092	17	12 J	4.1	1,500	2.2
CW-02D	10/07/20	N	0.47	1.3	2.2 J	21	3.7 J	150	<0.02	<0.1	12 J	0.00074	14 J	8.2 J	4.3	1,500	3.2
CW-02D	12/06/21	N	0.45	1.4 J	<0.1	17	1 J	100	--	--	5.2 J	0.00089 J	14	14	4.1	1,500	3.7
CW-02D	12/06/21	FD	0.45	1.5 J	<0.1	17	0.97 J	95	--	--	4.9 J	0.001 J	14	10	4.3	1,600	3.7
CW-02M	10/07/20	N	1.1	2.1	2.1 J	63	1.7 J	130	1	<0.1	12 J	0.0019	15 J	6.1 J	4.2	1,500	3.7
CW-02M	12/06/21	N	1.1	2.3 J	<0.1	66	1.1 J	140	--	--	9.8 J	0.00075 J	14	15	3.4	1,500	3.5
CW-03D	10/07/20	N	1	2.5	1.8 J	19	2.6 J	79	3.40	0.13 J	7.3 J	0.014	16 J	8.7 J	4.4	1,600	2.7
CW-03D	12/06/21	N	1.2	2.2 J	<0.1	19	0.89 J	73	--	--	4.6 J	0.0055 J	13	11	3.9	1,500	2.3
CW-03M	10/07/20	N	2.8	6.7	1.5 J	40	3.4 J	170	0.59 J	<0.1	17 J	0.0025 J	33 J	8 J	3.1	1,500	2.9
CW-03M	10/07/20	FD	2.8	6	1.5 J	38	2.9 J	150	0.44 J	<0.1	15 J	0.0014 J	34 J	8.1 J	3.1	1,500	3
CW-03M	12/06/21	N	2.2	3.6 J	<0.1	34	1.2 J	150	--	--	11 J	0.002 J	37	13	2.5	1,500	2.6
CW-04D	10/02/20	N	0.53	3.9	<0.1	23	1.2	100 J	0.099	0.058 J	11 J	0.0016	21	11	3.6	1,500	3
CW-04D	12/01/21	N	0.3	17	<0.1 J	30	0.99	160	--	--	11	0.095	24	13 J	3.5	1,500	5.3
CW-04M	10/02/20	N	1	4.8	<0.1	100	1.2	150 J	0.29	0.06 J	16 J	0.0022	12	13	5.9	1,400	3.6
CW-04M	12/01/21	N	1.2	2.1	<0.1 J	98	0.91	210	--	--	14	<0.0005	10	13 J	3.2	1,400	3.2
IRZ-09	09/14/20	N	19	20	--	--	--	--	--	--	--	--	--	--	--	--	--
IRZ-09	09/24/20	N	19	19	<0.1 J	79	1.2	240	<0.02 J	<0.02 J	32	0.011	14	16	1	1,700	3.4
IRZ-13D	08/07/20	N	350	330	--	--	--	--	--	--	--	--	--	--	--	--	--
IRZ-13D	09/26/20	N	390	370	1.9 J	42	1.8 J	320 J	<0.1 J	<0.1 J	65 J	0.057	35	29 J	1.1	3,300 J	2.3
IRZ-13S	08/18/20	N	24	22	--	--	--	--	--	--	--	--	--	--	--	--	--
IRZ-13S	09/28/20	N	20	21	<0.1	76	0.79 J	220 J	0.053 J	<0.02 J	30 J	0.0031	17	13 J	1.1	1,400 J	4.9
IRZ-23	12/21/21	N	150	150	0.92 J	51	0.63 J	170	0.69	0.091 J	26 J	<0.0005	6.7	9.9 J	4.1	580	9.6
MARINA-1	09/20/21	N	1.28	<10	<10	80.7	2.87	338	--	<1	10.4	<0.1	61.4	51.3	<10	5,360	<10
MTS-1	09/22/21	N	2.02	3.32	15.3	82.6	0.996	87.8	--	<0.1	2.84	<0.01	19.5	7.94	<1	404	9.65
MTS-1	11/15/21	N	<0.2	<1	23.9	28.1	0.487	11.2	--	<0.1	0.358	<0.01	14.3	6.38	<1	352	<1
MTS-2	09/22/21	N	8.5	10.3	18.1	84.4	0.972	88	--	<0.1	2.82	<0.01	19.1	7.87	<1	400	11.8
MTS-2	11/15/21	N	5.43	7.3	17.3	82.6	0.756	85.6	--	<0.1	3.07	<0.01	17.9	7.68	<1	370	11.2
MW-09	04/24/20	N	130	130	1.1	--	--	--	--	--	--	0.0021	6.8	--	5.3	--	--
MW-09	12/01/20	N	120	120	1.8	--	1 J	100 J	--	<0.02	36 J	0.0017	4.4	--	5.3	450 J	--
MW-09	02/24/21	N	120	120	--	--	--	--	--	--	--	--	4.7	--	5.8	--	--
MW-09	05/19/21	N	120	110	0.86	--	--	--	--	--	--	<0.0005	3.9	--	5.2	--	--
MW-09	12/08/21	N	170	170	0.38	--	--	--	--	--	--	0.0016 J	6.2	--	6.2	--	--
MW-09	12/08/21	FD	170	180	0.52	--	--	--	--	--	--	0.002 J	6.7	--	6.4	--	--
MW-10	04/23/20	N	150	150	--	--	--	--	--	--	--	--	19	--	6.1	--	--
MW-10	11/30/20	N	120	120	2.2	51	1 J	120 J	--	0.029 J	26 J	0.0071	21	--	6	280 J	14
MW-10	11/30/20	FD	120	120	2.2	50	1 J	120 J	--	0.026 J	26 J	0.0067	20	--	5.3	300 J	14
MW-10	02/24/21	N	110	120	--	--	--	--	--	--	--	--	16	--	6.5	--	--
MW-10	05/05/21	N	130	130 J	1.5	--	--	160	--	--	--	0.00057	17	13 J	6.3	420	--
MW-10	09/22/21	N	120	140 J	1.6 J	--	--	150 J	--	--	23 J	<0.0005	17 J	11	7.3	500	--
MW-10	12/08/21	N	69	71	0.93	--	--	--	--	--	--	0.0013 J	15	--	6.1	--	--
MW-10	12/08/21	FD	67	72	0.92	--	--	--	--	--	--	0.0011 J	15	--	6.2	--	--
MW-10D	02/24/20	N	370	370	0.43	54	1.3	160	0.022 J	<0.02	31	<0.0005	1.8	14 J	7.6	620	9.1
MW-10D	05/28/20	N	380	390	0.52	53	1.3	150	0.24	0.022	37	0.0024	2.3	14 J	7.9	710	10
MW-10D	08/19/20	N	410	380	<0.1	40	1.3	130 J	0.089	0.065 J	35	0.018	1.9	14	8	640	11
MW-10D	12/10/20	N	420	390	0.21	46	1.1	140 J	0.18 J	0.046 J	39	<0.0005	1.4	15	7.7	580	11
MW-10D	02/24/21	N	380	380	<0.1	49 J	1.4	170	0.25 J	<0.02	41	<0.0005	1.4	16 J	7.1	800 J	11
MW-10D	05/05/21	N	400	370 J	<0.1	--	--	200	--	--	--	<0.0005	1.6	16 J	6.9	630	--
MW-10D	05/19/21	N	400	390	<0.1	45	1.1	160	<0.02 J	<0.02	32 J	<0.0005	1.4	16 J	7.3	590	12
MW-10D	08/24/21	N	240	270	<0.1	43	1.1	130	0.053 J	<0.02 J	28	<0.0005 J	1.4	18 J	6.6	630	14
MW-10D	09/22/21	N	94	120 J	<0.1 J	--	--	120 J	--	--	22 J	<0.0005	1.4 J	12	6.6	520	--
MW-10D	12/08/21	N	88	89	<0.1	--	--	--	--	--	--	<0.0005 J	1.8	--	5.3	--	--
MW-11	04/23/20	N	43	43	0.9	--	--	--	--	--	--	0.0013	5.8	--	4	--	--
MW-11	12/10/20	N	33	33	1.4	--	0.68	120	--	0.1 J	26	0.0006	5.1 J	--	4	270	--
MW-11	05/19/21	N	38	37	0.42	--	--	--	--	--	--	<0.0005	5.7	--	4.1	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
CW-01M	12/01/21	N	90	--	2,100	2.4	--	--	2.5	490	4,300	--
CW-02D	10/07/20	N	66	<0.2	2,300	2	--	--	2.8	510	4,300	--
CW-02D	12/06/21	N	64	--	2,200	2.1	--	--	2.8	510	4,000	--
CW-02D	12/06/21	FD	64	--	2,200	1.9	--	--	2.7	510	4,200	--
CW-02M	10/07/20	N	59	<0.2	2,200	3.1	--	--	2.6	500	4,300	--
CW-02M	12/06/21	N	63	--	2,200	3.2	--	--	2.8	500	4,100	--
CW-03D	10/07/20	N	68	<0.2	2,200	2.5	--	--	2.9	490	4,300	--
CW-03D	12/06/21	N	70	--	2,200	2.4	--	--	2.6	500	4,100	--
CW-03M	10/07/20	N	53	<0.2	2,300	3.7	--	--	2.6	510	4,500	--
CW-03M	10/07/20	FD	53	<0.2	2,300	3.8	--	--	2.6	510	4,400	--
CW-03M	12/06/21	N	52	--	2,200	4.2	--	--	2.6	520	4,100	--
CW-04D	10/02/20	N	59	0.21	2,100	4.2	--	--	2.9	470	4,400	--
CW-04D	12/01/21	N	72	--	2,100	2.9	--	--	2.7	480	4,300	--
CW-04M	10/02/20	N	60	<0.2	2,100	2.1	--	--	2.7	480	4,500	--
CW-04M	12/01/21	N	57	--	2,100	2.3	--	--	2.7	490	4,200	--
IRZ-09	09/14/20	N	--	--	--	--	--	--	--	--	--	--
IRZ-09	09/24/20	N	54	0.2	3,000	2.8	--	--	1.8	500	6,500	<1
IRZ-13D	08/07/20	N	--	--	--	--	--	--	--	--	--	--
IRZ-13D	09/26/20	N	58	0.22	6,100	3	--	--	2.1	930	13,000	<1
IRZ-13S	08/18/20	N	--	--	--	--	--	--	--	--	--	--
IRZ-13S	09/28/20	N	53	0.49	2,600	2.6	--	--	2.1	460	5,700	<1 J
IRZ-23	12/21/21	N	87	<0.2	990	2	5.5	<5	--	220	2,200	<10
MARINA-1	09/20/21	N	--	--	9,580	3.28	--	--	--	653	19,400	--
MTS-1	09/22/21	N	--	--	565	5.25	--	--	--	129	1,090	--
MTS-1	11/15/21	N	40.7	0.261	1,160	4.74	--	--	--	128	2,090	--
MTS-2	09/22/21	N	--	--	586	5.1	--	--	--	124	1,120	--
MTS-2	11/15/21	N	69.8	<0.1	724	5	--	--	--	144	1,350	--
MW-09	04/24/20	N	--	--	--	--	--	--	11	--	--	--
MW-09	12/01/20	N	120	--	740	--	--	--	--	250	1,700	--
MW-09	02/24/21	N	--	--	--	--	--	--	13	--	--	--
MW-09	05/19/21	N	--	--	--	--	--	--	11	--	--	--
MW-09	12/08/21	N	--	--	--	--	--	--	14	--	--	--
MW-09	12/08/21	FD	--	--	--	--	--	--	14	--	--	--
MW-10	04/23/20	N	--	--	--	--	--	--	12	--	--	--
MW-10	11/30/20	N	120	--	520	--	--	--	12	250	1,400	--
MW-10	11/30/20	FD	120	--	520	--	--	--	12	260	1,400	--
MW-10	02/24/21	N	--	--	--	--	--	--	9	--	--	--
MW-10	05/05/21	N	--	--	670	--	--	--	8.8	270	1,700	--
MW-10	09/22/21	N	--	--	710	--	--	--	11	280	1,800	--
MW-10	12/08/21	N	--	--	--	--	--	--	11	--	--	--
MW-10	12/08/21	FD	--	--	--	--	--	--	11	--	--	--
MW-10D	02/24/20	N	120	0.05 J	980	1.1	--	--	11	370	2,500	<1
MW-10D	05/28/20	N	120	<0.2	1,000	<1	--	--	13 J	380	2,400	<1
MW-10D	08/19/20	N	120	<0.2	980	1.1	--	--	13 J	370	2,500	<1
MW-10D	12/10/20	N	120	<0.2	1,000	1.2	--	--	13	390	2,400	<1
MW-10D	02/24/21	N	120	<0.22	1,000	1.3	--	--	9.9	380	2,300	<1
MW-10D	05/05/21	N	--	--	990	--	--	--	12	370	2,300	--
MW-10D	05/19/21	N	120	<0.2	980	1.1	--	--	12	380	2,300	<1
MW-10D	08/24/21	N	120	<0.2	920	1.2	--	--	11	370	2,200	<1
MW-10D	09/22/21	N	--	--	840	--	--	--	9.5	270	1,900	--
MW-10D	12/08/21	N	--	--	--	--	--	--	9.5	--	--	--
MW-11	04/23/20	N	--	--	--	--	--	--	5.2	--	--	--
MW-11	12/10/20	N	87	--	590	--	--	--	4.4	170	1,300	--
MW-11	05/19/21	N	--	--	--	--	--	--	5	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-11	12/09/21	N	170	180	0.48 J	--	--	--	--	--	--	0.00077	--	--	--	--	--
MW-11D	01/29/20	N	390	380	<0.1	59	1.7	400	0.16	0.036	73 J	0.049	6.6	18	5	800	3.8
MW-11D	02/24/20	N	390	370	<0.1	54	1.5	320	0.15 J	0.11 J	52	0.012	6.2	18 J	4.8	730	4.1
MW-11D	05/28/20	N	340	340	<0.1	54	1.5	340	0.26	0.037	62	0.0058	7.2	19 J	4.6	750	3.8
MW-11D	08/26/20	N	480	460	<0.1	53	1.4 J	260	0.15 J	<0.02	64 J	0.0021	6.1	19 J	5.2	830 J	4.9
MW-11D	12/10/20	N	530	520	<0.1	49	1.3	300 J	0.23 J	<0.02 J	62	<0.0005	4.6	20	5	680	5.8
MW-11D	02/24/21	N	490	510	<0.1	55 J	1.6	400	0.055 J	<0.02	66	<0.0005	4.9	21 J	4.7	770 J	6.3
MW-11D	05/19/21	N	510	490	<0.1	50	1.3	330	0.042 J	0.024	53 J	<0.0005	5.9	20 J	5.3	830	5.8
MW-11D	08/24/21	N	300	330	<0.1	63	0.88	350	0.023 J	<0.02 J	64	<0.0005 J	4.1	23 J	4.1	820	5.9
MW-11D	12/09/21	N	150	150	<0.1 J	--	--	--	--	--	--	<0.0005	--	--	--	--	--
MW-12	04/28/20	N	2,700	2,800	45	--	--	--	--	--	--	0.0014	8.8	--	13	--	--
MW-12	12/14/20	N	1,600	1,900	45	41	1.2	22 J	--	0.068 J	5.8	0.0022	10	--	28	1,200	20
MW-12	12/14/20	FD	1,600	1,900	48	43	1.1	24 J	--	0.12 J	6.4	0.0023	10	--	28	1,400	20
MW-12	02/17/21	N	1,400	1,600	--	--	--	--	--	--	--	--	12	--	29	--	--
MW-12	05/26/21	N	1,300	1,200	--	--	--	--	--	--	--	--	11	--	34	--	--
MW-12	12/13/21	N	2,000	2,000	35	--	--	--	--	--	--	0.00064	9.7	--	19	--	--
MW-13	12/14/20	N	23	24	1.9	--	0.68	120 J	--	0.043 J	21	0.0026	12	--	3.3	340	--
MW-13	12/07/21	N	19	20	0.8 J	--	--	--	--	--	--	0.0051 J	12	--	3	--	--
MW-13	12/07/21	FD	18	20	0.81 J	--	--	--	--	--	--	0.0047 J	11	--	2.8	--	--
MW-14	06/24/20	N	12	12	0.12	--	--	--	--	--	--	0.00079	10	--	1.8	--	--
MW-14	06/24/20	FD	12	12	0.18 J	--	--	--	--	--	--	0.00072	10	--	2	--	--
MW-14	12/10/20	N	13	13	<0.1	190	0.25	160	--	0.067 J	30	0.00097	10	--	2	370	2.5
MW-14	05/28/21	N	17	16	0.82	--	--	--	--	--	--	0.0022	12	--	2	--	--
MW-14	12/07/21	N	12	12	<0.1 J	--	--	--	--	--	--	0.0026 J	13	--	2.1	--	--
MW-15	12/10/20	N	15	14	--	--	0.2	130	--	0.069 J	36	<0.0005	3.1	--	3.5	220	--
MW-15	12/02/21	N	13	13	1.2 J	--	--	--	--	--	--	<0.0005	--	--	--	--	--
MW-19	04/27/20	N	32	40	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-19	12/07/20	N	94	92 J	--	--	0.62 J	100 J	--	0.022 J	19 J	<0.0005	6.6 J	--	3.2 J	230 J	--
MW-19	05/28/21	N	500	500	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-19	12/13/21	N	43	48	0.3	--	--	--	--	--	--	0.0028	--	--	--	--	--
MW-20-070	04/24/20	N	2,500	2,500	2.2	--	--	--	--	--	--	0.0022	29	--	7.7	--	--
MW-20-070	12/04/20	N	1,600 J	1,700	--	--	0.6 J	78	--	0.024 J	22 J	<0.0005	27	5.9	11	280	--
MW-20-070	05/28/21	N	1,700	1,700	--	--	--	--	--	--	--	--	22	--	21	--	--
MW-20-070	12/15/21	N	570	590	0.9	47	--	--	--	0.037 J	--	<0.0005	18	--	33 J	--	--
MW-20-100	04/24/20	N	750	760	1.3	--	--	--	--	--	--	0.0011	4.8	--	5.4	--	--
MW-20-100	12/04/20	N	610 J	660	--	--	1 J	95	--	<0.02 J	19 J	<0.0005	3.8	6.1 J	5.6	250	--
MW-20-100	05/28/21	N	680	690	--	--	--	--	--	--	--	--	3.8	--	5	--	--
MW-20-100	12/15/21	N	650	660	1.3	24	--	--	--	0.033 J	--	<0.0005	3.6	--	6 J	--	--
MW-20-130	04/24/20	N	5,900	6,100	0.97	--	--	--	--	--	--	0.00084	42	--	22	--	--
MW-20-130	12/04/20	N	4,000 J	4,400	<0.1	--	2 J	140	--	0.092 J	20 J	0.0025	20	64	53	1,200	--
MW-20-130	12/04/20	FD	4,100 J	4,500	<0.1	--	2.2 J	150	--	0.023 J	21 J	0.0023	19	67 J	51	1,300	--
MW-20-130	05/28/21	N	4,100	4,000	3.1	--	--	--	--	--	--	0.0015	24	--	39	--	--
MW-20-130	12/15/21	N	3,300	3,400	0.22	24	--	--	--	<0.02 J	--	0.0016	22	--	37 J	--	--
MW-21	04/30/20	N	4.6	5.4	--	--	--	--	--	--	--	--	46	--	42	--	--
MW-21	12/15/20	N	<1	<1	--	--	6.4	190 J	--	<0.1	97	0.038	64	--	4.7	2,900	--
MW-21	06/08/21	N	<1	1.7	--	--	--	--	--	--	--	--	43	--	4.2	--	--
MW-21	12/16/21	N	<1	<1	<0.1	41	--	--	--	0.076 J	--	0.2	65	--	4.5	--	--
MW-22	06/16/20	N	<0.2	<1	3.2	--	--	--	--	--	--	1.60	--	--	--	--	--
MW-22	12/08/20	N	<1	<1	14	120	3.9 J	560 J	--	8.80 J	280 J	4	32	--	<0.5	4,500 J	1.1
MW-22	12/08/20	FD	<1	<1	15	130	4.1 J	550 J	--	9.10 J	290 J	4.10	33	--	<0.5	4,600 J	1.1
MW-22	04/27/21	N	<1	<1	8.2	--	--	--	--	--	--	1.80	--	--	--	--	--
MW-22	11/30/21	N	<1	<1	22 J	87	--	--	--	8.20	--	2.50	36	--	<0.5	--	--
MW-22	11/30/21	FD	<1	<1	24 J	92	--	--	--	8	--	2.50	38	--	<0.5	--	--
MW-23-060	06/18/20	N	40	37	0.86 J	--	--	--	--	--	--	0.001	--	--	--	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-11	12/09/21	N	--	--	--	--	--	--	--	--	--	--
MW-11D	01/29/20	N	84	<0.1	1,500	1.2	--	--	6.6	460	3,500	<1
MW-11D	02/24/20	N	86	0.05 J	1,500	<2	--	--	6.4	480	3,800	<1
MW-11D	05/28/20	N	86	<0.2	1,600	<2	--	--	8.1 J	520	4,400	<1
MW-11D	08/26/20	N	86	<0.2	1,600	<2	--	--	7.8 J	500	4,400	<1 J
MW-11D	12/10/20	N	85	<0.2	1,700	<2	--	--	7.8	490	3,500	<1
MW-11D	02/24/21	N	83	<0.22	1,600	2.1	--	--	5.7	500	3,700	<1
MW-11D	05/19/21	N	82	<0.2	1,800	<2	--	--	7.4	550	4,000	<1
MW-11D	08/24/21	N	79	<0.2	1,600	<2	--	--	5.3 J	360	4,100	<1
MW-11D	12/09/21	N	--	--	--	--	--	--	--	--	--	--
MW-12	04/28/20	N	--	--	--	--	--	--	15	--	--	--
MW-12	12/14/20	N	110	--	1,800	--	--	--	15	470	3,800	--
MW-12	12/14/20	FD	110	--	1,700	--	--	--	14	460	3,900	--
MW-12	02/17/21	N	--	--	--	--	--	--	15	--	--	--
MW-12	05/26/21	N	--	--	--	--	--	--	16	--	--	--
MW-12	12/13/21	N	--	--	--	--	--	--	17	--	--	--
MW-13	12/14/20	N	71	--	680	--	--	--	--	150	1,600	--
MW-13	12/07/21	N	--	--	--	--	--	--	5.4	--	--	--
MW-13	12/07/21	FD	--	--	--	--	--	--	5.5	--	--	--
MW-14	06/24/20	N	--	--	--	--	--	--	3.2	--	--	--
MW-14	06/24/20	FD	--	--	--	--	--	--	2.8	--	--	--
MW-14	12/10/20	N	60	--	940	--	--	--	2.8	150	1,900	--
MW-14	05/28/21	N	--	--	--	--	--	--	3.7	--	--	--
MW-14	12/07/21	N	--	--	--	--	--	--	3.7	--	--	--
MW-15	12/10/20	N	67	--	590	--	--	--	--	170	1,400	--
MW-15	12/02/21	N	--	--	--	--	--	--	--	--	--	--
MW-19	04/27/20	N	--	--	--	--	--	--	--	--	--	--
MW-19	12/07/20	N	100	--	510	--	--	--	--	160	1,200	--
MW-19	05/28/21	N	--	--	--	--	--	--	--	--	--	--
MW-19	12/13/21	N	--	--	--	--	--	--	--	--	--	--
MW-20-070	04/24/20	N	--	--	--	--	--	--	13	--	--	--
MW-20-070	12/04/20	N	88	--	470	--	--	--	17	320	1,400	--
MW-20-070	05/28/21	N	--	--	--	--	--	--	25	--	--	--
MW-20-070	12/15/21	N	--	<0.2	--	--	--	<5	39	490	--	<1
MW-20-100	04/24/20	N	--	--	--	--	--	--	7.5	--	--	--
MW-20-100	12/04/20	N	140	--	460	--	--	--	6.7	210	1,200	--
MW-20-100	05/28/21	N	--	--	--	--	--	--	6.6	--	--	--
MW-20-100	12/15/21	N	--	<0.2	--	--	--	<2.5	7.9	200	--	<1
MW-20-130	04/24/20	N	--	--	--	--	--	--	11	--	--	--
MW-20-130	12/04/20	N	57 J	--	2,200	--	--	--	11	1,000	5,200	--
MW-20-130	12/04/20	FD	92 J	--	2,500	--	--	--	11	940	5,800	--
MW-20-130	05/28/21	N	--	--	--	--	--	--	12	--	--	--
MW-20-130	12/15/21	N	--	<0.2	--	--	--	<5	13	960	--	<1
MW-21	04/30/20	N	--	--	--	--	--	--	2.8	--	--	--
MW-21	12/15/20	N	750	--	3,400	--	--	--	0.21	1,600	9,700	--
MW-21	06/08/21	N	--	--	--	--	--	--	0.81	--	--	--
MW-21	12/16/21	N	--	<0.2	--	--	--	<5	0.27	1,600	--	<1
MW-22	06/16/20	N	--	--	--	--	--	--	--	--	--	--
MW-22	12/08/20	N	690	--	7,700	--	--	--	--	2,000	15,000	--
MW-22	12/08/20	FD	690	--	8,000	--	--	--	--	2,000	15,000	--
MW-22	04/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-22	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	1.3
MW-22	11/30/21	FD	--	--	--	--	--	--	<0.1	--	--	1.4
MW-23-060	06/18/20	N	--	--	--	--	--	--	--	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-23-060	12/08/20	N	42	40	4.5	--	1.6 J	810 J	--	<0.1 J	5.2 J	0.00095	21	--	4.8	3,000 J	--
MW-23-060	04/30/21	N	41	38	<0.1	--	--	--	--	--	--	0.00073	--	--	--	--	--
MW-23-060	12/09/21	N	36	35	<0.1 J	--	--	--	--	--	--	0.0016	24	--	5.3	--	--
MW-23-060	12/09/21	FD	36	34	<0.1 J	--	--	--	--	--	--	0.0015	23	--	5	--	--
MW-23-080	06/18/20	N	<1	<1	4.9 J	--	--	--	--	--	--	0.0012	--	--	--	--	--
MW-23-080	12/08/20	N	<1	<1	5.9	--	1.9 J	770 J	--	<0.1 J	<500	0.001	45	--	5	3,500 J	--
MW-23-080	04/30/21	N	<1	1.3	<0.1	--	--	--	--	--	--	0.0015	--	--	--	--	--
MW-23-080	12/09/21	N	<1	<1	<0.1 J	--	--	--	--	--	--	0.00094	46	--	4.5	--	--
MW-24A	05/01/20	N	<0.2	2.9	<0.1	--	--	--	--	--	--	0.017	100	--	<0.5	--	--
MW-24A	10/05/20	N	<0.2	3.3	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-24A	12/01/20	N	<0.2	<1	0.43	23	--	--	--	--	--	0.02	120	--	<0.5	--	<1
MW-24A	12/01/20	FD	<0.2	<1	0.35	23	--	--	--	--	--	0.02	110	--	<0.5	--	<1
MW-24A	05/05/21	N	<0.2	<1 J	<0.1	--	--	11	--	--	--	0.015	96	3.6 J	<0.5	400	--
MW-24A	12/09/21	N	<0.2	1.9	<0.1 J	--	--	--	--	--	--	0.43	110	--	<0.5	--	--
MW-24B	05/01/20	N	120	140	<0.5	--	--	--	--	--	--	0.096	56	--	<2.5	--	--
MW-24B	10/05/20	N	<1	57	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-24B	12/01/20	N	64	65	3.8	74	--	--	--	--	--	0.12	63	--	1.8	--	3.6
MW-24B	05/05/21	N	48	45 J	<0.1	--	--	97	--	--	--	0.11	59	51 J	1.4	5,600	--
MW-24B	12/09/21	N	<1	1.3	<0.1 J	--	--	--	--	--	--	0.087	63	--	<0.5	--	--
MW-24B	12/09/21	FD	<1	1.1	<0.1 J	--	--	--	--	--	--	0.087	64	--	<0.5	--	--
MW-24BR	12/02/20	N	<1	<1	0.63	--	3	100	--	0.8	4.3	0.16	58	--	<0.5	2,700	--
MW-24BR	12/10/21	N	<1	<1	<0.1	--	--	--	--	--	--	0.079	--	--	--	--	--
MW-25	06/24/20	N	56	55	0.96	--	--	--	--	--	--	0.0027	4.3	--	7.5	--	--
MW-25	06/24/20	FD	57	56	0.93	--	--	--	--	--	--	0.0032	4.4	--	7.4	--	--
MW-25	12/07/20	N	68	65 J	0.79	--	0.55 J	110 J	--	0.032 J	27 J	0.00055	5.9 J	7.5 J	6.7 J	180 J	--
MW-25	05/25/21	N	55	56	1.5 J	--	--	--	--	--	--	0.00062	4.6	--	7.3	--	--
MW-25	05/25/21	FD	55	56	1.2 J	--	--	--	--	--	--	0.00051	4.7	--	8	--	--
MW-25	12/07/21	N	70	80	0.75 J	--	--	--	--	--	--	0.0036 J	14	--	6.2	--	--
MW-26	04/27/20	N	2,300	2,300	0.88	--	--	--	--	--	--	0.0015	35	--	39	--	--
MW-26	12/03/20	N	2,200	2,200	0.74	33 J	1.1	120	--	0.084	40	<0.0005	33	9	31 J	470	7.5
MW-26	12/03/20	FD	2,200	2,500	0.88	33 J	1.1	130	--	0.074	41	<0.0005	32	9.6	31 J	500	7.9
MW-26	05/20/21	N	2,200	2,300	0.48	--	--	--	--	--	--	<0.0005	31	--	33	--	--
MW-26	12/15/21	N	2,200	2,300	0.92	33	--	--	--	0.046 J	--	0.0023	16	--	13 J	--	--
MW-27-020	12/03/20	N	<0.2	<1	0.86 J	--	<100	73	--	0.1 J	27 J	0.012	5.8	--	0.54	66 J	--
MW-27-020	12/01/21	N	<0.2	<1	0.71	55	--	--	--	0.032	--	0.0094	5.9	--	<0.5	--	--
MW-27-060	12/03/20	N	<0.2	<1	9.8 J	--	0.1	78	--	0.35 J	23 J	0.28	4.6	--	<0.5	68 J	--
MW-27-060	12/01/21	N	<0.2	<1	12	70	--	--	--	0.39	--	0.27	4.7	--	<0.5	--	--
MW-27-085	06/18/20	N	<0.2	<1	<0.1	--	--	--	--	--	--	0.11	16	--	<0.5	--	--
MW-27-085	12/03/20	N	<1	<1	<0.1 J	--	1.1	180	--	0.1 J	56 J	0.078	21	--	<0.5	1,400 J	--
MW-27-085	04/27/21	N	<0.2	<1	<0.1	--	--	--	--	--	--	0.1	16 J	--	<0.5	--	--
MW-27-085	12/01/21	N	<1	<1	<0.1	43	--	--	--	0.17	--	0.14	19	--	<0.5	--	--
MW-28-025	06/23/20	N	<0.2	<1	0.52	--	--	--	--	--	--	0.0022	4.1	--	1.5	--	--
MW-28-025	12/15/20	N	<0.2	<1	0.58	--	0.43	99 J	--	<0.02	30	0.0031	4.5	--	1.5	100	--
MW-28-025	04/29/21	N	<0.2	<1	0.7	--	--	--	--	--	--	0.24	5.5	--	<0.5	--	--
MW-28-025	12/08/21	N	<0.2	<1	0.4	68	--	--	--	<0.02	--	0.006	4.6	--	1.3	--	--
MW-28-090	06/23/20	N	<0.2	<1	1	--	--	--	--	--	--	0.28	20	--	<0.5	--	--
MW-28-090	12/15/20	N	<0.2	<1	2	--	1.3	190 J	--	0.43 J	52	0.12	24	--	<0.5	1,300	--
MW-28-090	04/29/21	N	<0.2	<1	0.43	--	--	--	--	--	--	0.29	25	--	<0.5	--	--
MW-28-090	12/08/21	N	<0.2	<1	<0.1	27	--	--	--	0.59	--	0.14	26	--	<0.5	--	--
MW-29	06/23/20	N	<0.2	<1	8.4	--	--	--	--	--	--	0.29	18	--	3.3	--	--
MW-29	12/04/20	N	<0.2	<1	15	--	0.57 J	84	--	1.40 J	45 J	0.22	9.2	--	1.5	220	--
MW-29	04/29/21	N	<0.2	<1	8	--	--	--	--	--	--	0.39	13	--	1.7	--	--
MW-29	12/02/21	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-30-030	12/07/20	N	<1	<1 J	0.91	--	1.7 J	51 J	--	0.85 J	52 J	0.25	57 J	--	1.6 J	1,400 J	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-23-060	12/08/20	N	16	--	5,800	--	--	--	--	670	12,000	--
MW-23-060	04/30/21	N	--	--	--	--	--	--	--	--	--	--
MW-23-060	12/09/21	N	--	--	--	--	--	--	5.7	--	--	--
MW-23-060	12/09/21	FD	--	--	--	--	--	--	5.8	--	--	--
MW-23-080	06/18/20	N	--	--	--	--	--	--	--	--	--	--
MW-23-080	12/08/20	N	50	--	5,700	--	--	--	--	1,000	12,000	--
MW-23-080	04/30/21	N	--	--	--	--	--	--	--	--	--	--
MW-23-080	12/09/21	N	--	--	--	--	--	--	4.7	--	--	--
MW-24A	05/01/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-24A	10/05/20	N	--	--	--	--	--	--	--	--	--	--
MW-24A	12/01/20	N	--	--	--	--	--	--	--	--	--	--
MW-24A	12/01/20	FD	--	--	--	--	--	--	--	--	--	--
MW-24A	05/05/21	N	--	--	300	--	--	--	<0.05	180	990	--
MW-24A	12/09/21	N	--	--	--	--	--	--	<0.1	--	--	--
MW-24B	05/01/20	N	--	--	--	--	--	--	0.87	--	--	--
MW-24B	10/05/20	N	--	--	--	--	--	--	--	--	--	--
MW-24B	12/01/20	N	--	--	--	--	--	--	--	--	--	--
MW-24B	05/05/21	N	--	--	6,700	--	--	--	0.48	760	13,000	--
MW-24B	12/09/21	N	--	--	--	--	--	--	<0.1	--	--	--
MW-24B	12/09/21	FD	--	--	--	--	--	--	<0.1	--	--	--
MW-24BR	12/02/20	N	45	--	4,400	--	--	--	<0.1	450	8,900	--
MW-24BR	12/10/21	N	--	--	--	--	--	--	--	--	--	--
MW-25	06/24/20	N	--	--	--	--	--	--	13	--	--	--
MW-25	06/24/20	FD	--	--	--	--	--	--	12	--	--	--
MW-25	12/07/20	N	120	--	400	--	--	--	12	220	1,200	--
MW-25	05/25/21	N	--	--	--	--	--	--	11	--	--	--
MW-25	05/25/21	FD	--	--	--	--	--	--	12	--	--	--
MW-25	12/07/21	N	--	--	--	--	--	--	10	--	--	--
MW-26	04/27/20	N	--	--	--	--	--	--	21	--	--	--
MW-26	12/03/20	N	130	--	770	--	--	--	18	470	2,200	--
MW-26	12/03/20	FD	140	--	760	--	--	--	18	460	2,200	--
MW-26	05/20/21	N	--	--	--	--	--	--	19	--	--	--
MW-26	12/15/21	N	--	<0.2	--	--	--	<5	13	430	--	<1
MW-27-020	12/03/20	N	170	--	91	--	--	--	<0.1	220	620	--
MW-27-020	12/01/21	N	--	--	--	--	--	--	<0.1	--	--	1
MW-27-060	12/03/20	N	190	--	87	0.66	--	--	<0.1	210	640	--
MW-27-060	12/01/21	N	--	--	--	--	--	--	<0.1	--	--	1.3
MW-27-085	06/18/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-27-085	12/03/20	N	260	--	2,900	2.2	--	--	<0.1	660	6,800	--
MW-27-085	04/27/21	N	--	--	--	--	--	--	0.061	--	--	--
MW-27-085	12/01/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-28-025	06/23/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-28-025	12/15/20	N	220	--	100	--	--	--	<0.05	250	750	--
MW-28-025	04/29/21	N	--	--	--	--	--	--	<0.05	--	--	--
MW-28-025	12/08/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-28-090	06/23/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-28-090	12/15/20	N	260	--	1,800	1.8	--	--	<0.05	560	4,400	--
MW-28-090	04/29/21	N	--	--	--	--	--	--	<0.05	--	--	--
MW-28-090	12/08/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-29	06/23/20	N	--	--	--	--	--	--	0.13	--	--	--
MW-29	12/04/20	N	430	--	260	--	--	--	<0.1	250	1,200	--
MW-29	04/29/21	N	--	--	--	--	--	--	0.15	--	--	--
MW-29	12/02/21	N	--	--	--	--	--	--	--	--	--	--
MW-30-030	12/07/20	N	1,000	--	1,200	--	--	--	<0.1	1,400	5,000	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-30-030	12/03/21	N	<1	<1	<0.1	250	--	--	--	0.54 J	--	0.18	48	--	0.54	--	--
MW-30-050	12/07/20	N	<0.2	<1 J	2.7	--	0.31 J	82 J	--	0.062 J	19 J	0.2	4.3 J	--	<0.5	81 J	--
MW-30-050	12/03/21	N	<0.2	2.6	2.7	21	--	--	--	0.038 J	--	0.26	4.9	--	<0.5	--	--
MW-31-060	06/24/20	N	320	280	0.36	--	--	--	--	--	--	<0.0005	--	--	--	--	--
MW-31-060	12/07/20	N	410	400 J	0.53	--	0.54 J	100 J	--	0.03 J	19 J	0.001	22 J	6 J	3.3 J	450 J	--
MW-31-060	04/30/21	N	150	150	<0.1	--	--	--	--	--	--	0.0019	--	--	--	--	--
MW-31-060	12/16/21	N	310	310	0.52	55	--	--	--	0.021 J	--	0.0013	25	--	3.1	--	--
MW-31-060	12/16/21	FD	310	310	0.32	57	--	--	--	<0.02	--	0.0013	26	--	3.1	--	--
MW-31-135	12/07/20	N	15	13 J	<0.1	--	2.4 J	340 J	--	<0.1 J	31 J	<0.0005	26 J	--	0.72 J	1,800 J	--
MW-31-135	12/16/21	N	13	14	<0.1	46	--	--	--	<0.02	--	<0.0005	27	--	0.58	--	--
MW-32-020	12/07/20	N	<1	<1 J	3.8	--	3.8 J	340 J	--	6.10 J	440 J	0.16	160 J	--	1.5 J	5,000 J	--
MW-32-020	11/30/21	N	<1	<1	<0.1 J	110	--	--	--	4.50	--	0.2	100	--	2.2	--	--
MW-32-035	06/18/20	N	<0.2	<1	26 J	--	--	--	--	--	--	0.61	--	--	--	--	--
MW-32-035	12/07/20	N	<1	<1 J	17	--	0.94 J	300 J	--	11 J	210 J	0.75	13 J	18 J	<0.5	1,100 J	--
MW-32-035	12/07/20	FD	<1	<1 J	17	--	0.9 J	300 J	--	10 J	200 J	0.73	13 J	19 J	<0.5	1,100 J	--
MW-32-035	04/27/21	N	<0.2	1.1	24	--	--	--	--	--	--	0.66	--	--	--	--	--
MW-32-035	11/30/21	N	<0.2	<1	15 J	160	--	--	--	12	--	0.59	9.6	--	<0.5	--	--
MW-33-040	06/17/20	N	<0.2	<1	5.5	--	--	--	--	--	--	0.054	120	--	<0.5	--	--
MW-33-040	12/02/20	N	<1	1.8	9.3	--	4.2	75	--	<0.1	180	0.016	440	--	11	3,600	--
MW-33-040	04/29/21	N	<0.2	<1	4.7	--	--	--	--	--	--	0.036	140	--	0.52	--	--
MW-33-040	11/30/21	N	<1	2.2	--	--	--	--	--	--	--	--	380	--	5.7	--	--
MW-33-090	06/17/20	N	3.3	6.3	<0.1	--	--	--	--	--	--	0.011	8.2	--	<0.5	--	--
MW-33-090	12/02/20	N	3.1	11	1.1	--	1.2	230	--	0.42	30	0.023	9.9	--	<0.5	1,600	--
MW-33-090	04/29/21	N	3.4	3.9	<0.1	--	--	--	--	--	--	0.0041	8.4	--	<0.5	--	--
MW-33-090	11/30/21	N	3	5.6	--	--	--	--	--	--	--	--	8.1	--	<0.5	--	--
MW-33-090	11/30/21	FD	3	6.6	--	--	--	--	--	--	--	--	8.2	--	<0.5	--	--
MW-33-150	06/17/20	N	4.9	11	<0.1	--	--	--	--	--	--	0.0083	48	--	0.83	--	--
MW-33-150	12/02/20	N	5	8.8	1.3	--	2	450	--	0.28	77	0.012	41	--	0.61	2,500	--
MW-33-150	04/29/21	N	7	8.2	<0.1	--	--	--	--	--	--	0.015	45	--	0.82	--	--
MW-33-150	11/30/21	N	2.8	31	--	--	--	--	--	--	--	--	39	--	0.63	--	--
MW-33-210	06/17/20	N	7.2	15	<0.1	--	--	--	--	--	--	0.0072	22	--	<0.5	--	--
MW-33-210	12/02/20	N	12	15	1.2	--	2.6	440	--	0.24	69	0.012	20	--	0.75	3,400	--
MW-33-210	04/29/21	N	7.5	8.9	<0.1	--	--	--	--	--	--	0.0078	24	--	<0.5	--	--
MW-33-210	11/30/21	N	12	20	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	12/03/20	N	<0.2	<1	2.7 J	--	0.19	67	--	0.033 J	23 J	0.068	5.2	5.4 J	<0.5	92 J	--
MW-34-055	12/03/20	FD	<0.2	<1	2.8 J	--	0.18	65	--	0.022 J	22 J	0.07	5.4	5.3 J	<0.5	89 J	--
MW-34-055	06/30/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	07/12/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	07/26/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	08/10/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	08/26/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	09/08/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	09/22/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	10/06/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	10/20/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	11/02/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	11/19/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-055	12/01/21	N	<0.2	<1	4	30	--	--	--	0.096	--	0.087	4.5	--	<0.5	--	--
MW-34-080	06/18/20	N	<0.2	<1	<0.1	--	--	--	--	--	--	0.066	--	--	--	--	--
MW-34-080	12/03/20	N	<0.2	<1	<0.1 J	--	0.98	210	--	0.17 J	93 J	0.052	13	18 J	<0.5	1,400 J	--
MW-34-080	04/28/21	N	<0.2	<1	<0.1	--	--	--	--	--	--	0.064	--	--	--	--	--
MW-34-080	06/30/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-080	06/30/21	FD	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-080	07/12/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-30-030	12/03/21	N	--	--	--	--	--	--	0.1	--	--	11
MW-30-050	12/07/20	N	180	--	87	--	--	--	<0.1	200	630	--
MW-30-050	12/03/21	N	--	--	--	--	--	--	<0.1	--	--	1
MW-31-060	06/24/20	N	--	--	--	--	--	--	--	--	--	--
MW-31-060	12/07/20	N	99	--	790	--	--	--	4.1	220	1,700	--
MW-31-060	04/30/21	N	--	--	--	--	--	--	--	--	--	--
MW-31-060	12/16/21	N	--	<0.2	--	--	--	<2.5	3.6	210	--	<1
MW-31-060	12/16/21	FD	--	<0.2	--	--	--	<2.5	3.6	210	--	<1
MW-31-135	12/07/20	N	35	--	3,900	--	--	--	--	500	7,900	--
MW-31-135	12/16/21	N	--	<0.2	--	--	--	<5	1.2	500	--	<1
MW-32-020	12/07/20	N	1,400	--	5,800	--	--	--	--	3,800	16,000	--
MW-32-020	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	4.4
MW-32-035	06/18/20	N	--	--	--	--	--	--	--	--	--	--
MW-32-035	12/07/20	N	720	--	2,000	--	--	--	<0.1	840	5,200	--
MW-32-035	12/07/20	FD	730	--	2,000	--	--	--	<0.1	850	5,300	--
MW-32-035	04/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-32-035	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	1.9
MW-33-040	06/17/20	N	--	--	--	--	--	--	0.077	--	--	--
MW-33-040	12/02/20	N	570	--	5,500	17	--	--	0.41	2,700	14,000	--
MW-33-040	04/29/21	N	--	--	--	--	--	--	<0.05	--	--	--
MW-33-040	11/30/21	N	--	--	--	--	--	--	0.35	--	--	--
MW-33-090	06/17/20	N	--	--	--	--	--	--	1.1	--	--	--
MW-33-090	12/02/20	N	150	--	2,900	2.5	--	--	0.99	670	6,400	--
MW-33-090	04/29/21	N	--	--	--	--	--	--	1.1	--	--	--
MW-33-090	11/30/21	N	--	--	--	--	--	--	1.1	--	--	--
MW-33-090	11/30/21	FD	--	--	--	--	--	--	1	--	--	--
MW-33-150	06/17/20	N	--	--	--	--	--	--	1.4	--	--	--
MW-33-150	12/02/20	N	60	--	5,100	2.2	--	--	1.4	840	11,000	--
MW-33-150	04/29/21	N	--	--	--	--	--	--	1.6	--	--	--
MW-33-150	11/30/21	N	--	--	--	--	--	--	1.5	--	--	--
MW-33-210	06/17/20	N	--	--	--	--	--	--	1.7	--	--	--
MW-33-210	12/02/20	N	58	--	6,200	2.8	--	--	1.7	1,200	13,000	--
MW-33-210	04/29/21	N	--	--	--	--	--	--	1.6	--	--	--
MW-33-210	11/30/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-055	12/03/20	N	160	--	82	--	--	--	<0.1	210	580	--
MW-34-055	12/03/20	FD	150	--	84	--	--	--	<0.1	210	580	--
MW-34-055	06/30/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-055	07/12/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-055	07/26/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-055	08/10/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-055	08/26/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-055	09/08/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-055	09/22/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-055	10/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-055	10/20/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-055	11/02/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-055	11/19/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-055	12/01/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-34-080	06/18/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-34-080	12/03/20	N	310	--	2,200	--	--	--	<0.1	580	4,900	--
MW-34-080	04/28/21	N	--	--	--	--	--	--	<0.05	--	--	--
MW-34-080	06/30/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-080	06/30/21	FD	--	--	--	--	--	--	--	--	--	--
MW-34-080	07/12/21	N	--	--	--	--	--	--	--	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-34-080	07/26/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-080	08/10/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-080	08/26/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-080	09/08/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-080	09/22/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-080	10/06/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-080	10/20/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-080	11/02/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-080	11/19/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-080	12/01/21	N	<0.2	<1	<0.1	36	--	--	--	0.35	--	0.074	12	--	<0.5	--	--
MW-34-100	02/20/20	N	<0.2	4	<0.1	--	--	--	--	--	--	0.086	53	--	<0.5	--	--
MW-34-100	06/18/20	N	<0.2	<1	<0.1	--	--	--	--	--	--	0.11	64	--	<0.5	--	--
MW-34-100	10/01/20	N	<0.2	<1	<0.1	--	--	--	--	--	--	0.19	85	--	<0.5	--	--
MW-34-100	12/03/20	N	<1	<1	<0.1 J	--	1.2 J	92	--	0.088 J	25 J	0.18	57	26 J	<0.5	2,000 J	--
MW-34-100	12/03/20	FD	<1	<1	<0.1 J	--	1.6 J	120	--	0.1 J	32 J	0.17	60	28 J	<0.5	2,000 J	--
MW-34-100	02/25/21	N	<1	1.7	<0.1	--	--	--	--	--	--	0.16	55	--	<0.5	--	--
MW-34-100	04/28/21	N	<0.2	<1	<0.1	--	--	--	--	--	--	0.11	63	--	<0.5	--	--
MW-34-100	06/30/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	07/12/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	07/26/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	08/10/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	08/26/21	N	<1	<1	<0.1 J	--	--	--	--	--	--	0.16	65	--	<0.5	--	--
MW-34-100	09/08/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	09/22/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	10/06/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	09/22/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	10/06/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	10/20/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	10/20/21	FD	<1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	11/02/21	N	<1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	11/19/21	N	<1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34-100	12/01/21	N	<1	<1	<0.1	23	--	--	--	0.073	--	0.092	59	--	<0.5	--	--
MW-34-100	12/01/21	FD	<1	<1	<0.1	23	--	--	--	0.052	--	0.094	59	--	<0.5	--	--
MW-35-060	04/27/20	N	32	32	0.45	--	--	--	--	--	--	0.0011	15	--	1.5	--	--
MW-35-060	12/08/20	N	21	21	1.3	72	0.83 J	190 J	--	0.044 J	32 J	0.001	10	--	1.3	990 J	2.9
MW-35-060	12/08/20	FD	20	21	1.2	72	2.1 J	230 J	--	<0.1 J	33 J	0.00081	9.8	--	0.99	1,100 J	3
MW-35-060	04/30/21	N	20	22	<0.1	--	--	--	--	--	--	0.001	12	--	1.2	--	--
MW-35-060	12/06/21	N	20	20 J	--	--	--	--	--	--	--	--	8.8	--	0.92	--	--
MW-35-135	04/27/20	N	25	24	<0.1	--	--	--	--	--	--	0.0084	20	--	0.92	--	--
MW-35-135	12/08/20	N	27	27	0.97	38	1.8 J	260 J	--	<0.1 J	42 J	0.00072	21	--	1	2,000 J	1.5
MW-35-135	12/08/20	FD	28	27	1	38	0.82 J	220 J	--	<0.02 J	38 J	0.00069	21	--	1.1	1,900 J	1.6
MW-35-135	04/30/21	N	24	24	<0.1	--	--	--	--	--	--	0.0025	20	--	1.1	--	--
MW-35-135	12/06/21	N	26	25 J	--	--	--	--	--	--	--	--	20	--	1	--	--
MW-36-020	12/15/20	N	<0.2	<1	2.2	--	1.4	190 J	--	2.20 J	220	0.45	21	--	<0.5	1,200	--
MW-36-020	06/29/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-020	07/13/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-020	07/27/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-020	08/09/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-020	08/25/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-020	09/07/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-020	09/21/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-020	10/06/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-020	10/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-020	11/01/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-020	11/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-020	12/03/21	N	<0.2	<1	0.48	120	--	--	--	1 J	--	0.29	17	--	<0.5	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-34-080	07/26/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-080	08/10/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-080	08/26/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-080	09/08/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-080	09/22/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-080	10/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-080	10/20/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-080	11/02/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-080	11/19/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-080	12/01/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-34-100	02/20/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-34-100	06/18/20	N	--	--	--	--	--	--	0.18	--	--	--
MW-34-100	10/01/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-34-100	12/03/20	N	200	--	3,000	--	--	--	<0.1	870	6,200	--
MW-34-100	12/03/20	FD	210	--	2,800	--	--	--	<0.1	840	6,100	--
MW-34-100	02/25/21	N	--	--	--	--	--	--	<0.05	--	--	--
MW-34-100	04/28/21	N	--	--	--	--	--	--	<0.05	--	--	--
MW-34-100	06/30/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-100	07/12/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-100	07/26/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-100	08/10/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-100	08/26/21	N	--	--	--	--	--	--	<0.1	--	--	--
MW-34-100	09/08/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-100	09/22/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-100	09/08/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-100	09/22/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-100	10/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-100	10/20/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-100	10/20/21	FD	--	--	--	--	--	--	--	--	--	--
MW-34-100	11/02/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-100	11/19/21	N	--	--	--	--	--	--	--	--	--	--
MW-34-100	12/01/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-34-100	12/01/21	FD	--	--	--	--	--	--	<0.1	--	--	<1
MW-35-060	04/27/20	N	--	--	--	--	--	--	2.8	--	--	--
MW-35-060	12/08/20	N	84	--	2,000	--	--	--	2	310	4,100	--
MW-35-060	12/08/20	FD	88	--	2,000	--	--	--	2.1	320	4,100	--
MW-35-060	04/30/21	N	--	--	--	--	--	--	2.3	--	--	--
MW-35-060	12/06/21	N	--	--	--	--	--	--	2	--	--	--
MW-35-135	04/27/20	N	--	--	--	--	--	--	2.6	--	--	--
MW-35-135	12/08/20	N	45	--	3,400	--	--	--	2.6	850	7,500	--
MW-35-135	12/08/20	FD	46	--	3,300	--	--	--	2.6	840	7,400	--
MW-35-135	04/30/21	N	--	--	--	--	--	--	2.4	--	--	--
MW-35-135	12/06/21	N	--	--	--	--	--	--	2.5	--	--	--
MW-36-020	12/15/20	N	820	--	1,100	--	--	--	--	1,500	4,900	--
MW-36-020	06/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-020	07/13/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-020	07/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-020	08/09/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-020	08/25/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-020	09/07/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-020	09/21/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-020	10/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-020	10/18/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-020	11/01/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-020	11/18/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-020	12/03/21	N	--	--	--	--	--	--	<0.1	--	--	1.6

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-36-040	12/15/20	N	<0.2	<1	4.5	--	<100	49 J	--	0.34 J	13	0.12	2.9	--	<0.5	160	--
MW-36-040	06/29/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	07/13/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	07/27/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	08/09/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	08/25/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	09/07/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	09/21/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	10/06/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	10/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	11/01/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	11/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	11/18/21	FD	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-040	12/03/21	N	<0.2	<1	5	41	--	--	--	0.32 J	--	0.11	3.5	--	<0.5	--	--
MW-36-040	12/03/21	FD	<0.2	<1	5.2	40	--	--	--	0.31 J	--	0.11	3.3	--	<0.5	--	--
MW-36-050	12/15/20	N	<0.2	<1	5.6	--	<100	76 J	--	0.093 J	19	0.21	3.9	--	<0.5	93	--
MW-36-050	06/29/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-050	07/13/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-050	07/27/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-050	08/09/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-050	08/25/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-050	08/25/21	FD	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-050	09/07/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-050	09/21/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-050	10/06/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-050	10/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-050	11/01/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-050	11/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-050	12/03/21	N	<0.2	<1	5.2	25	--	--	--	0.15 J	--	0.22	4.1	--	<0.5	--	--
MW-36-070	12/15/20	N	0.2	<1	1.9	--	<100	71 J	--	<0.02	17	0.14	5	--	<0.5	98	--
MW-36-070	06/29/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-070	07/13/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-070	07/27/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-070	08/09/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-070	08/25/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-070	09/07/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-070	09/21/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-070	10/06/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-070	10/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-070	11/01/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-070	11/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-070	12/03/21	N	<0.2	<1	2.2	33	--	--	--	<0.02 J	--	0.21	4.9	--	<0.5	--	--
MW-36-090	06/16/20	N	<0.2	<1	1.3	--	--	--	--	--	--	0.051	--	--	--	--	--
MW-36-090	12/15/20	N	<0.2	1.7	5.2	--	0.52	86 J	--	0.11 J	25	0.034	9.6	--	<0.5	620	--
MW-36-090	04/28/21	N	<0.2	<1	1.2	--	--	--	--	--	--	0.038	--	--	--	--	--
MW-36-090	06/29/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-090	07/13/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-090	07/27/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-090	08/09/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-090	08/25/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-090	09/07/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-090	09/21/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-090	10/06/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-090	10/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-36-040	12/15/20	N	270	--	86	--	--	--	<0.05	140	630	--
MW-36-040	06/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-040	07/13/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-040	07/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-040	08/09/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-040	08/25/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-040	09/07/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-040	09/21/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-040	10/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-040	10/18/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-040	11/01/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-040	11/18/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-040	11/18/21	FD	--	--	--	--	--	--	--	--	--	--
MW-36-040	12/03/21	N	--	--	--	--	--	--	<0.1	--	--	2.3
MW-36-040	12/03/21	FD	--	--	--	--	--	--	<0.1	--	--	2.3
MW-36-050	12/15/20	N	190	--	84	--	--	--	--	190	590	--
MW-36-050	06/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-050	07/13/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-050	07/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-050	08/09/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-050	08/25/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-050	08/25/21	FD	--	--	--	--	--	--	--	--	--	--
MW-36-050	09/07/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-050	09/21/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-050	09/07/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-050	09/21/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-050	10/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-050	10/18/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-050	11/01/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-050	11/18/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-050	12/03/21	N	--	--	--	--	--	--	<0.1	--	--	1.3
MW-36-070	12/15/20	N	160	--	93	--	--	--	--	210	640	--
MW-36-070	06/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-070	07/13/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-070	07/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-070	08/09/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-070	08/25/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-070	09/07/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-070	09/21/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-070	10/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-070	10/18/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-070	11/01/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-070	11/18/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-070	12/03/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-36-090	06/16/20	N	--	--	--	--	--	--	--	--	--	--
MW-36-090	12/15/20	N	270	--	1,000	--	--	--	--	390	2,400	--
MW-36-090	04/28/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-090	06/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-090	07/13/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-090	07/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-090	08/09/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-090	08/25/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-090	09/07/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-090	09/21/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-090	10/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-090	10/18/21	N	--	--	--	--	--	--	--	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-36-090	11/01/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-090	11/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-090	12/03/21	N	<0.2	<1	1.6	36	--	--	--	0.035 J	--	0.072	14	--	<0.5	--	--
MW-36-100	06/16/20	N	12	11	1.5	--	--	--	--	--	--	0.24	20	--	<0.5	--	--
MW-36-100	12/15/20	N	4.5	6	2.9	--	1.2	180 J	--	0.18 J	53	0.22	19	--	<0.5	1,400	--
MW-36-100	04/28/21	N	5.5	7.1	<0.1	--	--	--	--	--	--	0.16	21	--	<0.5	--	--
MW-36-100	06/29/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-100	07/13/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-100	07/27/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-100	08/09/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-100	08/25/21	N	8.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-100	09/07/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-100	09/21/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-100	10/06/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-100	10/18/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-100	11/01/21	N	36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-100	11/18/21	N	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36-100	12/03/21	N	8	11	<0.1	43	--	--	--	0.26 J	--	0.23	19	--	<0.5	--	--
MW-37D	06/24/20	N	5	6.5	--	--	--	--	--	--	--	--	63	--	0.66	--	--
MW-37D	12/10/20	N	4.5	5.7	--	--	1.3	220	--	<0.1 J	15	0.0023	65	--	1.1	2,400	--
MW-37D	06/07/21	N	4.8	5	--	--	--	--	--	--	--	--	65	--	0.82	--	--
MW-37D	12/07/21	N	6	7.4	<0.1 J	--	--	--	--	--	--	<0.0005 J	68	--	1	--	--
MW-37S	12/10/20	N	12	13	2	--	0.73	190	--	0.13 J	34	0.006	15 J	--	0.82	1,300	--
MW-37S	12/07/21	N	7.8	8	<0.1 J	--	--	--	--	--	--	0.0057 J	16	--	0.8	--	--
MW-38D	04/23/20	N	19	16	7.3	--	--	--	--	--	--	0.027	78	--	<2.5	--	--
MW-38D	10/05/20	N	20	21	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-38D	12/14/20	N	17	19	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-38D	12/15/20	N	19	18	8.5	--	5.1	250 J	--	<0.1	6.9	0.029	89	--	<0.5	3,800	--
MW-38D	02/25/21	N	25	22	<0.1	--	--	--	--	--	--	0.04	78	--	<0.5	--	--
MW-38D	05/05/21	N	23	22 J	<0.1	--	--	96	--	--	--	0.02	87	50 J	<0.5	5,700	--
MW-38D	09/22/21	N	30	36 J	<0.1 J	--	--	550 J	--	--	11 J	0.0054	38 J	47	<0.5	5,300	--
MW-38D	12/08/21	N	50	47	<0.1	--	--	--	--	--	--	0.0053 J	58	--	0.83	--	--
MW-38S	02/25/20	N	3.8	3.3	6.6	--	--	--	--	--	--	0.048	25	--	2.5	--	--
MW-38S	02/25/20	FD	3.9	3.2	6.6	--	--	--	--	--	--	0.048	22	--	2.4	--	--
MW-38S	04/23/20	N	4	4.4	5.7	--	--	--	--	--	--	0.069	21	--	2.9	--	--
MW-38S	04/23/20	FD	4	4.6	5.8	--	--	--	--	--	--	0.075	22	--	3.1	--	--
MW-38S	11/30/20	N	7.2	7.8	6.5	--	0.99 J	23 J	--	<0.02	6.2 J	0.061	20	--	3	270 J	--
MW-38S	02/25/21	N	8.4	9.1	5.1	--	--	--	--	--	--	0.074	17	--	3.3	--	--
MW-38S	05/05/21	N	11	11 J	5.5	--	--	34	--	--	--	0.053	15	6.4 J	4	320	--
MW-38S	08/27/21	N	15	17	6.5 J	--	--	--	--	--	--	0.022	12	--	4.4	--	--
MW-38S	09/22/21	N	5.6	5.3 J	9 J	--	--	18 J	--	--	3.3 J	0.014	16 J	3.7	2.2	190	--
MW-38S	12/08/21	N	15	17	7.2	--	--	--	--	--	--	0.0034 J	8.2	--	3.9	--	--
MW-39-040	12/11/20	N	<0.2	<1	18	--	--	--	--	--	--	0.099	--	--	--	--	--
MW-39-040	12/07/21	N	<0.2	<1	16	74	--	--	--	0.32 J	--	0.12	7.7	--	<0.5	--	--
MW-39-050	12/11/20	N	<0.2	<1	2	--	0.12	72 J	--	0.15 J	19	0.17	4.5 J	--	<0.5	100	--
MW-39-050	12/07/21	N	<0.2	<1	16	73	--	--	--	<0.02	--	0.12	7.6	--	<0.5	--	--
MW-39-060	12/11/20	N	<0.2	<1	2.7	--	0.14	54 J	--	0.12 J	17	0.11	5.2 J	--	<0.5	120	--
MW-39-060	12/07/21	N	<0.2	<1	16	74	--	--	--	0.11 J	--	0.12	7.7	--	<0.5	--	--
MW-39-070	12/11/20	N	<0.2	<1	--	--	0.22	53 J	--	0.22 J	17	0.0036	16 J	--	<0.5	360	--
MW-39-070	12/07/21	N	<0.2	<1	16	74	--	--	--	<0.02	--	0.12	7.7	--	<0.5	--	--
MW-39-080	12/11/20	N	0.47	1.2	--	--	0.61	100 J	--	0.032 J	38	0.0042	26 J	--	<0.5	1,100	--
MW-39-080	12/07/21	N	<0.2	<1	16 J	74 J	--	--	--	<0.02	--	0.12 J	7.7 J	--	<0.5	--	--
MW-39-080	12/07/21	FD	<0.2	<1	1.5 J	22 J	--	--	--	<0.02	--	0.0039 J	22 J	--	<0.5	--	--
MW-39-100	06/18/20	N	93	91	<0.1	--	--	--	--	--	--	0.0042	7.5	--	<0.5	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-36-090	11/01/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-090	11/18/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-090	12/03/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-36-100	06/16/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-36-100	12/15/20	N	290	--	1,900	--	--	--	<0.05	600	4,600	--
MW-36-100	04/28/21	N	--	--	--	--	--	--	<0.05	--	--	--
MW-36-100	06/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-100	07/13/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-100	07/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-100	08/09/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-100	08/25/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-100	09/07/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-100	09/21/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-100	10/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-100	10/18/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-100	11/01/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-100	11/18/21	N	--	--	--	--	--	--	--	--	--	--
MW-36-100	12/03/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-37D	06/24/20	N	--	--	--	--	--	--	0.92	--	--	--
MW-37D	12/10/20	N	32	--	3,800	--	--	--	0.98	650	7,100	--
MW-37D	06/07/21	N	--	--	--	--	--	--	1.4	--	--	--
MW-37D	12/07/21	N	--	--	--	--	--	--	1.4	--	--	--
MW-37S	12/10/20	N	44	--	2,200	--	--	--	--	330	4,200	--
MW-37S	12/07/21	N	--	--	--	--	--	--	1.2	--	--	--
MW-38D	04/23/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-38D	10/05/20	N	--	--	--	--	--	--	--	--	--	--
MW-38D	12/14/20	N	--	--	--	--	--	--	--	--	--	--
MW-38D	12/15/20	N	43	--	5,800	--	--	--	0.52	580	11,000 J	--
MW-38D	02/25/21	N	--	--	--	--	--	--	0.12	--	--	--
MW-38D	05/05/21	N	--	--	7,500	--	--	--	0.075	720	12,000 J	--
MW-38D	09/22/21	N	--	--	7,000	--	--	--	0.36	700	13,000	--
MW-38D	12/08/21	N	--	--	--	--	--	--	1.5	--	--	--
MW-38S	02/25/20	N	--	--	--	--	--	--	4.7	--	--	--
MW-38S	02/25/20	FD	--	--	--	--	--	--	5.1	--	--	--
MW-38S	04/23/20	N	--	--	--	--	--	--	5.1	--	--	--
MW-38S	04/23/20	FD	--	--	--	--	--	--	5.5	--	--	--
MW-38S	11/30/20	N	150	--	310	--	--	--	5.6	150	940	--
MW-38S	02/25/21	N	--	--	--	--	--	--	5.3	--	--	--
MW-38S	05/05/21	N	--	--	350	--	--	--	5.9	150	920	--
MW-38S	08/27/21	N	--	--	--	--	--	--	6.1	--	--	--
MW-38S	09/22/21	N	--	--	140	--	--	--	6.1	81	580	--
MW-38S	12/08/21	N	--	--	--	--	--	--	7	--	--	--
MW-39-040	12/11/20	N	--	--	--	--	--	--	--	--	--	--
MW-39-040	12/07/21	N	--	--	--	--	--	--	<0.1	--	--	2.2
MW-39-050	12/11/20	N	180	--	87	--	--	--	--	200	610	--
MW-39-050	12/07/21	N	--	--	--	--	--	--	<0.1	--	--	1
MW-39-060	12/11/20	N	190	--	93	--	--	--	<0.05	210	620	--
MW-39-060	12/07/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-39-070	12/11/20	N	190	--	380	--	--	--	--	270	1,200	--
MW-39-070	12/07/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-39-080	12/11/20	N	250	--	1,400	--	--	--	--	460	3,100	--
MW-39-080	12/07/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-39-080	12/07/21	FD	--	--	--	--	--	--	<0.1	--	--	<1
MW-39-100	06/18/20	N	--	--	--	--	--	--	0.083	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-39-100	12/15/20	N	120	110	2.3	--	2.6	260 J	--	<0.1	46	0.007	7.5	--	<0.5	2,500	--
MW-39-100	04/28/21	N	92	91	<0.1	--	--	--	--	--	--	0.0051	7.5	--	<0.5	--	--
MW-39-100	12/07/21	N	39	39	<0.1	27	--	--	--	0.029 J	--	0.0058	7.4	--	<0.5	--	--
MW-40D	06/17/20	N	12	11	<0.1	--	--	--	--	--	--	0.013	41	--	0.78	--	--
MW-40D	12/10/20	N	31	29	4.7	--	1.7	300	--	<0.1 J	49	0.0064	41	--	1	3,000	--
MW-40D	05/19/21	N	110	98	<0.1	--	--	--	--	--	--	<0.0005	49	--	1.8	--	--
MW-40D	12/06/21	N	45	41 J	<0.1	--	--	--	--	--	--	<0.0005 J	35	--	1.1	--	--
MW-40S	06/17/20	N	18	28	3.2	--	--	--	--	--	--	0.0058	30	--	6.1	--	--
MW-40S	12/10/20	N	5.9	29	0.55	--	--	--	--	--	--	0.0082	5.2	--	1.8	--	--
MW-40S	05/19/21	N	13	13	1.4	--	--	--	--	--	--	0.00083	15	--	3.9	--	--
MW-40S	12/06/21	N	43	45 J	4.3	--	--	--	--	--	--	<0.0005 J	32	--	11	--	--
MW-40S	12/06/21	FD	42	44 J	4.6	--	--	--	--	--	--	<0.0005 J	31	--	11	--	--
MW-41D	06/24/20	N	<1	<1	2.4	--	--	--	--	--	--	0.12	80	--	<0.5	--	--
MW-41D	06/24/20	FD	<1	<1	2.4	--	--	--	--	--	--	0.12	82	--	<0.5	--	--
MW-41D	12/17/20	N	1.1	1.4	<0.1	--	1.9	380	--	<0.1	31 J	0.047	81	--	0.55	4,300 J	--
MW-41D	06/07/21	N	<1	<1	<0.1 J	--	--	--	--	--	--	0.081 J	90	--	<0.5	--	--
MW-41D	06/07/21	FD	<1	<1	<0.1 J	--	--	--	--	--	--	0.078 J	88	--	<0.5	--	--
MW-41D	12/07/21	N	<1	2.8	<0.1 J	--	--	--	--	--	--	0.032 J	79	--	0.65	--	--
MW-41M	12/17/20	N	9.5	8.3	<0.1	--	1.4	380	--	<0.1	33 J	<0.0005	26	--	<0.5	2,700 J	--
MW-41M	12/07/21	N	6.9	9	<0.1 J	--	--	--	--	--	--	0.0024 J	27	--	<0.5	--	--
MW-41S	12/17/20	N	5.5	5.2	<0.1	--	0.93	190	--	0.021	26 J	<0.0005	13	--	1.9	1,100 J	--
MW-41S	12/07/21	N	3.6	6.3	<0.1 J	--	--	--	--	--	--	0.0038 J	14	--	2.2	--	--
MW-41S	12/07/21	FD	3.7	5.1	<0.1 J	--	--	--	--	--	--	0.0033 J	14	--	1.9	--	--
MW-42-030	12/16/20	N	<0.2	<1	2	--	--	--	--	--	--	0.11	27 J	--	<0.5	--	--
MW-42-030	11/30/21	N	<0.2	<1	0.72 J	160	--	--	--	0.76	--	0.14	17	--	<0.5	--	--
MW-42-055	06/18/20	N	<0.2	<1	12 J	--	--	--	--	--	--	0.15	--	--	--	--	--
MW-42-055	12/16/20	N	<0.2	<1	16	--	0.1	87 J	--	0.53 J	23 J	0.3	3.9 J	--	<0.5	100 J	--
MW-42-055	04/27/21	N	<0.2	<1	11	--	--	--	--	--	--	0.22	--	--	--	--	--
MW-42-055	11/30/21	N	<0.2	<1	13 J	150	--	--	--	0.24	--	0.21	3.9	--	<0.5	--	--
MW-42-065	06/18/20	N	<0.2	<1	5.9 J	--	--	--	--	--	--	0.65	--	--	--	--	--
MW-42-065	12/16/20	N	<0.2	<1	6	--	0.47	110 J	--	0.053 J	29 J	1.30	9.5 J	--	<0.5	560 J	--
MW-42-065	04/27/21	N	<0.2	<1	3.5	--	--	--	--	--	--	0.92	--	--	--	--	--
MW-42-065	11/30/21	N	<0.2	<1	6.6 J	69	--	--	--	0.046	--	1.60	7.7	--	<0.5	--	--
MW-43-025	12/08/20	N	<0.2	<1	32	--	0.56 J	140 J	--	5.40 J	55 J	0.36	6.7	--	<0.5	150 J	--
MW-43-025	11/30/21	N	<0.2	<1	31 J	75	--	--	--	4.40	--	0.36	5.3	--	<0.5	--	--
MW-43-075	12/08/20	N	<0.2	<1	13	--	1.3 J	170 J	--	4.50 J	160 J	0.58	16	--	<0.5	1,800 J	--
MW-43-075	11/30/21	N	<0.2	<1	8.7 J	42	--	--	--	3.70	--	0.54	15	--	<0.5	--	--
MW-43-090	12/08/20	N	<1	<1	3.1	--	0.92 J	390 J	--	1.40 J	110 J	0.42	30	--	<0.5	3,600 J	--
MW-43-090	11/30/21	N	<1	<1	<0.1 J	55	--	--	--	1.20	--	0.52	29	--	<0.5	--	--
MW-44-070	06/23/20	N	<0.2	<1	1.8	--	--	--	--	--	--	0.23	--	--	--	--	--
MW-44-070	12/11/20	N	<0.2	<1	2.7	--	0.2	72 J	--	0.41 J	18	0.19	8.8 J	--	<0.5	230	--
MW-44-070	04/28/21	N	<0.2	<1	1.3	--	--	--	--	--	--	0.28	--	--	--	--	--
MW-44-070	06/29/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-070	07/12/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-070	07/27/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-070	08/10/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-070	08/10/21	FD	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-070	08/26/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-070	09/08/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-070	09/23/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-070	10/06/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-070	10/20/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-070	11/02/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-070	11/19/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-39-100	12/15/20	N	250	--	3,700	--	--	--	0.11	920	8,600	--
MW-39-100	04/28/21	N	--	--	--	--	--	--	0.13	--	--	--
MW-39-100	12/07/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-40D	06/17/20	N	--	--	--	--	--	--	0.57	--	--	--
MW-40D	12/10/20	N	47	--	5,100	--	--	--	2	690	11,000 J	--
MW-40D	05/19/21	N	--	--	--	--	--	--	2.1	--	--	--
MW-40D	12/06/21	N	--	--	--	--	--	--	1.3	--	--	--
MW-40S	06/17/20	N	--	--	--	--	--	--	10	--	--	--
MW-40S	12/10/20	N	--	--	--	--	--	--	3.5	--	--	--
MW-40S	05/19/21	N	--	--	--	--	--	--	5.9	--	--	--
MW-40S	12/06/21	N	--	--	--	--	--	--	25	--	--	--
MW-40S	12/06/21	FD	--	--	--	--	--	--	25	--	--	--
MW-41D	06/24/20	N	--	--	--	--	--	--	0.14	--	--	--
MW-41D	06/24/20	FD	--	--	--	--	--	--	1.1	--	--	--
MW-41D	12/17/20	N	41	--	6,900	--	--	--	0.61	760	13,000	--
MW-41D	06/07/21	N	--	--	--	--	--	--	0.44	--	--	--
MW-41D	06/07/21	FD	--	--	--	--	--	--	0.5	--	--	--
MW-41D	12/07/21	N	--	--	--	--	--	--	<0.1	--	--	--
MW-41M	12/17/20	N	36	--	4,600	--	--	--	0.59	560	10,000	--
MW-41M	12/07/21	N	--	--	--	--	--	--	0.58	--	--	--
MW-41S	12/17/20	N	49	--	1,900	--	--	--	2.5	430	3,900	--
MW-41S	12/07/21	N	--	--	--	--	--	--	2.5	--	--	--
MW-41S	12/07/21	FD	--	--	--	--	--	--	2.5	--	--	--
MW-42-030	12/16/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-42-030	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	1.8
MW-42-055	06/18/20	N	--	--	--	--	--	--	--	--	--	--
MW-42-055	12/16/20	N	230	--	87	--	--	--	--	200	660	--
MW-42-055	04/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-42-055	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-42-065	06/18/20	N	--	--	--	--	--	--	--	--	--	--
MW-42-065	12/16/20	N	320	--	750	--	--	--	--	350	2,100	--
MW-42-065	04/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-42-065	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-43-025	12/08/20	N	390	--	200	--	--	--	--	370	1,200	--
MW-43-025	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	1.2
MW-43-075	12/08/20	N	700	--	2,700	--	--	--	--	1,400	7,300	--
MW-43-075	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-43-090	12/08/20	N	170	--	5,700	--	--	--	--	950	12,000	--
MW-43-090	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-44-070	06/23/20	N	--	--	--	--	--	--	--	--	--	--
MW-44-070	12/11/20	N	200	--	260	--	--	--	--	230	970	--
MW-44-070	04/28/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-070	06/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-070	07/12/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-070	07/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-070	08/10/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-070	08/10/21	FD	--	--	--	--	--	--	--	--	--	--
MW-44-070	08/26/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-070	09/08/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-070	09/23/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-070	10/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-070	10/20/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-070	11/02/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-070	11/19/21	N	--	--	--	--	--	--	--	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-44-070	12/08/21	N	<0.2	<1	2.4	31	--	--	--	0.14	--	0.12	7.6	--	<0.5	--	--
MW-44-115	02/21/20	N	4.8	5.9	2.1	--	--	--	--	--	--	0.0064	62	--	<0.5	--	--
MW-44-115	06/23/20	N	4	3.7	2.3	--	--	--	--	--	--	0.005	68	--	<0.5	--	--
MW-44-115	10/01/20	N	3.4	4.1	2.2	--	--	--	--	--	--	0.0065	55 J	--	<0.5	--	--
MW-44-115	10/01/20	FD	3.4	3.9	1.9	--	--	--	--	--	--	0.0059	84 J	--	<0.5	--	--
MW-44-115	12/11/20	N	2.7	4.4	5.7	20	1.5	80 J	--	0.23 J	11	0.006	71 J	--	<0.5	2,300	6.6
MW-44-115	02/26/21	N	2.5	4.9	1.2	--	--	--	--	--	--	0.013	71	--	<0.5	--	--
MW-44-115	04/28/21	N	2.3	2.2	<0.1	--	--	--	--	--	--	0.0052	75	--	<0.5	--	--
MW-44-115	06/29/21	N	<1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-115	07/12/21	N	2.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-115	07/27/21	N	2.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-115	07/27/21	FD	2.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-115	08/10/21	N	0.99	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-115	08/26/21	N	<1	<1	0.51 J	--	--	--	--	--	--	0.019	77	--	<0.5	--	--
MW-44-115	09/08/21	N	1.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-115	09/23/21	N	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-115	09/23/21	FD	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-115	10/06/21	N	0.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-115	10/20/21	N	1.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-115	11/02/21	N	1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-115	11/19/21	N	1.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-115	12/08/21	N	1.8	2.2	0.86	19	--	--	--	<0.02	--	0.01	77	--	<0.5	--	--
MW-44-125	06/23/20	N	<0.2	1	2.6	--	--	--	--	--	--	0.33	13	--	<0.5	--	--
MW-44-125	12/11/20	N	<0.2	<1	2.5	--	0.32	65 J	--	0.31 J	17	0.17	27 J	--	<0.5	440	--
MW-44-125	04/28/21	N	<0.2	<1	1.7	--	--	--	--	--	--	0.31	10	--	<0.5	--	--
MW-44-125	06/29/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-125	07/12/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-125	07/27/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-125	08/10/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-125	08/26/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-125	09/08/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-125	09/23/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-125	10/06/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-125	10/20/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-125	11/02/21	N	<1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-125	11/19/21	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-44-125	12/08/21	N	<1	1.9	<0.1	55	--	--	--	0.3	--	0.39	230	--	<0.5	--	--
MW-45-095a	12/01/21	N	<0.2	<1	<0.1	37	--	--	--	<0.02	--	0.26	14	--	<0.5	--	--
MW-46-175	02/21/20	N	9.1	17	--	--	--	--	--	--	--	--	190	--	<2.5	--	--
MW-46-175	06/23/20	N	5.3	23	--	--	--	--	--	--	--	--	180	--	0.55	--	--
MW-46-175	10/01/20	N	5.1	5.5	--	--	--	--	--	--	--	--	190	--	1	--	--
MW-46-175	12/15/20	N	7.9	9	--	--	4.2	100 J	--	<0.1	3.5	0.015	190	--	<0.5	4,400	--
MW-46-175	02/25/21	N	5.1	7.6	--	--	--	--	--	--	--	--	180	--	0.62	--	--
MW-46-175	04/29/21	N	6.6	7	--	--	--	--	--	--	--	--	210	--	0.56	--	--
MW-46-175	06/30/21	N	6.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-46-175	07/12/21	N	5.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-46-175	07/26/21	N	4.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-46-175	08/10/21	N	5.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-46-175	08/26/21	N	5.2	7.2	--	--	--	--	--	--	--	--	200	--	0.79	--	--
MW-46-175	09/09/21	N	5.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-46-175	09/23/21	N	4.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-46-175	10/06/21	N	6.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-46-175	10/20/21	N	3.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-46-175	10/20/21	FD	3.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-44-070	12/08/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-44-115	02/21/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-44-115	06/23/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-44-115	10/01/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-44-115	10/01/20	FD	--	--	--	--	--	--	<0.05	--	--	--
MW-44-115	12/11/20	N	120	--	2,900	--	--	--	<0.05	910	6,300	--
MW-44-115	02/26/21	N	--	--	--	--	--	--	0.055	--	--	--
MW-44-115	04/28/21	N	--	--	--	--	--	--	0.05	--	--	--
MW-44-115	06/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-115	07/12/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-115	07/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-115	07/27/21	FD	--	--	--	--	--	--	--	--	--	--
MW-44-115	08/10/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-115	08/26/21	N	--	--	--	--	--	--	<0.1	--	--	--
MW-44-115	09/08/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-115	09/23/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-115	09/23/21	FD	--	--	--	--	--	--	--	--	--	--
MW-44-115	10/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-115	10/20/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-115	11/02/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-115	11/19/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-115	12/08/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-44-125	06/23/20	N	--	--	--	--	--	--	0.18	--	--	--
MW-44-125	12/11/20	N	120	--	2,500	--	--	--	<0.05	600	5,000	--
MW-44-125	04/28/21	N	--	--	--	--	--	--	<0.05	--	--	--
MW-44-125	06/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-125	07/12/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-125	07/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-125	08/10/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-125	08/26/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-125	09/08/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-125	09/23/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-125	10/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-125	10/20/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-125	11/02/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-125	11/19/21	N	--	--	--	--	--	--	--	--	--	--
MW-44-125	12/08/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-45-095a	12/01/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-46-175	02/21/20	N	--	--	--	--	--	--	1	--	--	--
MW-46-175	06/23/20	N	--	--	--	--	--	--	1.1	--	--	--
MW-46-175	10/01/20	N	--	--	--	--	--	--	0.92	--	--	--
MW-46-175	12/15/20	N	43	--	5,800	--	--	--	1	960	11,000	--
MW-46-175	02/25/21	N	--	--	--	--	--	--	1.1	--	--	--
MW-46-175	04/29/21	N	--	--	--	--	--	--	1	--	--	--
MW-46-175	06/30/21	N	--	--	--	--	--	--	--	--	--	--
MW-46-175	07/12/21	N	--	--	--	--	--	--	--	--	--	--
MW-46-175	07/26/21	N	--	--	--	--	--	--	--	--	--	--
MW-46-175	08/10/21	N	--	--	--	--	--	--	--	--	--	--
MW-46-175	08/26/21	N	--	--	--	--	--	--	0.94	--	--	--
MW-46-175	09/09/21	N	--	--	--	--	--	--	--	--	--	--
MW-46-175	09/23/21	N	--	--	--	--	--	--	--	--	--	--
MW-46-175	10/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-46-175	10/20/21	N	--	--	--	--	--	--	--	--	--	--
MW-46-175	10/20/21	FD	--	--	--	--	--	--	--	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-46-175	11/02/21	N	5.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-46-175	11/19/21	N	4.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-46-175	12/08/21	N	2.1	36	<0.1	31	--	--	--	0.2	--	0.021	200	--	0.56	--	--
MW-46-205	06/23/20	N	1.2	2.1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-46-205	12/15/20	N	<1	3.6	--	--	5.2	93 J	--	<0.1	3.1	0.053	340	--	0.91	4,700	--
MW-46-205	04/29/21	N	1.6	1.8	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-46-205	12/08/21	N	<1	<1	<0.1	33	--	--	--	0.068	--	0.046	340	--	0.82	--	--
MW-46-205	12/08/21	FD	<1	<1	<0.1	33	--	--	--	<0.1	--	0.042	340	--	0.86	--	--
MW-47-055	06/25/20	N	16	16	0.17	--	--	--	--	--	--	<0.0005	--	--	--	--	--
MW-47-055	11/30/20	N	17	17	1.2	--	1.2 J	170 J	--	<0.02	41 J	0.00056	9.1	--	0.86	730 J	--
MW-47-055	04/28/21	N	14	15	<0.1	--	--	--	--	--	--	0.0014	--	--	--	--	--
MW-47-055	12/06/21	N	17	18 J	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-47-115	06/25/20	N	24	24	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-47-115	11/30/20	N	18	18	--	--	1.5 J	270 J	--	<0.02	46 J	0.0032	24	--	0.95	2,800 J	--
MW-47-115	04/28/21	N	24	23	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-47-115	12/06/21	N	17	17 J	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-48	05/01/20	N	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-48	12/16/20	N	<1	<1	--	--	1	350 J	--	0.025 J	35 J	0.0044	9.4 J	--	<0.5	3,700 J	--
MW-48	05/28/21	N	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-48	12/15/21	N	<1	1.8	<0.1	--	--	--	--	--	--	0.034	9.9	--	<0.5	--	--
MW-49-135	12/04/20	N	8.6 J	11	<0.1	--	0.75 J	270	--	0.18 J	34 J	0.1	30	--	1.2	2,600	--
MW-49-135	12/02/21	N	6.1	7.3	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-49-275	12/04/20	N	<1	<1	--	--	2.8 J	230	--	<0.1 J	8.2 J	0.31	260	--	<0.5	5,900	--
MW-49-275	12/02/21	N	<1	2.2	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-49-365	12/04/20	N	<1	<1	--	--	3.5 J	380	--	0.18 J	16 J	0.064	200	--	<0.5	7,700	--
MW-49-365	12/02/21	N	<1	2.6	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-50-095	06/24/20	N	13	14	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-50-095	12/07/20	N	13	14 J	--	--	1 J	130 J	--	0.064 J	16 J	0.0083	17 J	--	0.76 J	910 J	--
MW-50-095	05/26/21	N	13	13	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-50-095	12/13/21	N	14	15	<0.1	--	--	--	--	--	--	<0.0005	--	--	--	--	--
MW-50-200	06/24/20	N	3,600	3,500	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-50-200	12/07/20	N	2,300	2,100 J	3.8	44 J	2.1 J	550 J	--	0.11 J	49 J	<0.0005	44 J	--	1.6 J	3,800 J	3.7 J
MW-50-200	12/07/20	FD	2,300	2,100 J	3.8	45 J	3 J	430 J	--	<0.1 J	39 J	<0.0005	44 J	--	1.6 J	3,500 J	3.7 J
MW-50-200	05/26/21	N	3,300	3,400	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-50-200	12/13/21	N	1,900	1,900	3.4	--	--	--	--	--	--	<0.0005	38	--	1.5	--	--
MW-51	04/27/20	N	3,200	3,200	<0.1	--	--	--	--	--	--	<0.0005	40	--	19	--	--
MW-51	04/27/20	FD	3,300	3,200	<0.1	--	--	--	--	--	--	<0.0005	42	--	20	--	--
MW-51	12/03/20	N	3,300	3,500	<0.1	43 J	1.5	190	--	0.081 J	21	<0.0005	40	--	33 J	2,000	1.9
MW-51	12/03/20	FD	3,300	3,700	<0.1	43 J	1.6	200	--	0.023 J	21	<0.0005	40	--	32 J	2,000	1.8
MW-51	05/20/21	N	2,600	2,600	<0.1	--	--	--	--	--	--	<0.0005	46	--	12	--	--
MW-51	12/15/21	N	2,900	3,100	<0.1	43	--	--	--	0.025 J	--	0.0011	42	--	34 J	--	--
MW-51	12/15/21	FD	2,900	3,000	<0.1	43	--	--	--	0.024 J	--	0.001	42	--	33 J	--	--
MW-52D	06/16/20	N	<1	<1	<0.1	--	--	--	--	--	--	0.25	--	--	--	--	--
MW-52D	12/08/20	N	<1	<1	2.3	--	2.7 J	260 J	--	0.95 J	24 J	0.23	67	--	<0.5	4,500 J	--
MW-52D	04/27/21	N	<1	<1	<0.1	--	--	--	--	--	--	0.24	--	--	--	--	--
MW-52D	11/30/21	N	<1	<1	2 J	37	--	--	--	0.95	--	0.28	61	--	<0.5	--	--
MW-52M	06/16/20	N	<1	<1	<0.1	--	--	--	--	--	--	0.15	--	--	--	--	--
MW-52M	12/08/20	N	<1	<1	1.2	--	2.9 J	350 J	--	1.60 J	40 J	0.16	34	--	<0.5	3,100 J	--
MW-52M	04/27/21	N	<1	<1	<0.1	--	--	--	--	--	--	0.22	--	--	--	--	--
MW-52M	11/30/21	N	<1	<1	<0.1 J	54	--	--	--	1.40	--	0.21	30	--	<0.5	--	--
MW-52S	06/16/20	N	<0.2	<1	<0.1	--	--	--	--	--	--	1.30	--	--	--	--	--
MW-52S	12/08/20	N	<1	<1	1.7	--	2.8 J	730 J	--	27 J	860 J	1.20	25	--	1.9	2,900 J	--
MW-52S	04/27/21	N	<0.2	<1	<0.1	--	--	--	--	--	--	1.30	--	--	--	--	--
MW-52S	11/30/21	N	<0.2	<1	<0.1 J	1,400	--	--	--	20	--	1.40	5.3	--	<0.5	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-46-175	11/02/21	N	--	--	--	--	--	--	--	--	--	--
MW-46-175	11/19/21	N	--	--	--	--	--	--	--	--	--	--
MW-46-175	12/08/21	N	--	--	--	--	--	--	0.9	--	--	<1
MW-46-205	06/23/20	N	--	--	--	--	--	--	--	--	--	--
MW-46-205	12/15/20	N	48	--	7,200	--	--	--	--	900	13,000 J	--
MW-46-205	04/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-46-205	12/08/21	N	--	--	--	--	--	--	0.93	--	--	<1
MW-46-205	12/08/21	FD	--	--	--	--	--	--	0.96	--	--	<1
MW-47-055	06/25/20	N	--	--	--	--	--	--	--	--	--	--
MW-47-055	11/30/20	N	65	--	1,500	--	--	--	--	280	3,100	--
MW-47-055	04/28/21	N	--	--	--	--	--	--	--	--	--	--
MW-47-055	12/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-47-115	06/25/20	N	--	--	--	--	--	--	--	--	--	--
MW-47-115	11/30/20	N	59	--	4,400	--	--	--	--	800	8,700	--
MW-47-115	04/28/21	N	--	--	--	--	--	--	--	--	--	--
MW-47-115	12/06/21	N	--	--	--	--	--	--	--	--	--	--
MW-48	05/01/20	N	--	--	--	--	--	--	--	--	--	--
MW-48	12/16/20	N	29	--	5,500	--	--	--	--	570	11,000	--
MW-48	05/28/21	N	--	--	--	--	--	--	--	--	--	--
MW-48	12/15/21	N	--	--	--	--	--	--	<0.1	--	--	--
MW-49-135	12/04/20	N	62	--	4,000	--	--	--	--	840	8,000	--
MW-49-135	12/02/21	N	--	--	--	--	--	--	--	--	--	--
MW-49-275	12/04/20	N	36	--	7,700	--	--	--	--	1,300	14,000	--
MW-49-275	12/02/21	N	--	--	--	--	--	--	--	--	--	--
MW-49-365	12/04/20	N	43	--	15,000	--	--	--	--	1,700	21,000	--
MW-49-365	12/02/21	N	--	--	--	--	--	--	--	--	--	--
MW-50-095	06/24/20	N	--	--	--	--	--	--	--	--	--	--
MW-50-095	12/07/20	N	52	--	1,800	--	--	--	--	300	3,600	--
MW-50-095	05/26/21	N	--	--	--	--	--	--	--	--	--	--
MW-50-095	12/13/21	N	--	--	--	--	--	--	--	--	--	--
MW-50-200	06/24/20	N	--	--	--	--	--	--	--	--	--	--
MW-50-200	12/07/20	N	35	--	6,700	--	--	--	--	810	13,000	--
MW-50-200	12/07/20	FD	34	--	6,800	--	--	--	--	810	14,000	--
MW-50-200	05/26/21	N	--	--	--	--	--	--	--	--	--	--
MW-50-200	12/13/21	N	--	--	--	--	--	--	1.9	--	--	--
MW-51	04/27/20	N	--	--	--	--	--	--	9.2	--	--	--
MW-51	04/27/20	FD	--	--	--	--	--	--	9.2	--	--	--
MW-51	12/03/20	N	100	--	3,100	--	--	--	12	720	6,500	--
MW-51	12/03/20	FD	100	--	3,100	--	--	--	12	720	6,800	--
MW-51	05/20/21	N	--	--	--	--	--	--	6.4	--	--	--
MW-51	12/15/21	N	--	<0.2	--	--	--	<5	13	720	--	<1
MW-51	12/15/21	FD	--	<0.2	--	--	--	<5	12	720	--	<1
MW-52D	06/16/20	N	--	--	--	--	--	--	--	--	--	--
MW-52D	12/08/20	N	62	--	7,100	--	--	--	--	960	12,000	--
MW-52D	04/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-52D	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	<50
MW-52M	06/16/20	N	--	--	--	--	--	--	--	--	--	--
MW-52M	12/08/20	N	85	--	5,300	--	--	--	--	630	10,000	--
MW-52M	04/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-52M	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-52S	06/16/20	N	--	--	--	--	--	--	--	--	--	--
MW-52S	12/08/20	N	1,500	--	3,100	--	--	--	--	4,500	12,000	--
MW-52S	04/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-52S	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	1.3

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-52S	11/30/21	FD	<0.2	<1	<0.1 J	1,300	--	--	--	20	--	1.30	4.9	--	<0.5	--	--
MW-53D	06/16/20	N	<1	<1	<0.1	--	--	--	--	--	--	1.10	--	--	--	--	--
MW-53D	12/08/20	N	<1	<1	3.3	--	4.1 J	280 J	--	0.46 J	19 J	1.10	160	--	<0.5	5,500 J	--
MW-53D	04/27/21	N	<1	<1	<0.1	--	--	--	--	--	--	0.89	--	--	--	--	--
MW-53D	11/30/21	N	<1	<1	3.6 J	44	--	--	--	0.22	--	1.30	180	--	<0.5	--	--
MW-53M	06/16/20	N	<1	<1	<0.1	--	--	--	--	--	--	0.45	--	--	--	--	--
MW-53M	12/08/20	N	<1	<1	0.77	--	3.2 J	370 J	--	0.55 J	37 J	0.41	61	--	<0.5	4,400 J	--
MW-53M	04/27/21	N	<1	<1	<0.1	--	--	--	--	--	--	0.63	--	--	--	--	--
MW-53M	11/30/21	N	<1	<1	<0.1 J	58	--	--	--	0.38	--	0.42	54	--	<0.5	--	--
MW-53S	11/30/21	N	<0.2	<1	<0.1 J	200	--	--	--	5.40	--	1.20	1.6	--	<0.5	--	--
MW-54-085	06/19/20	N	<0.2	<1	5.19	--	--	--	--	--	--	0.472	--	--	--	--	--
MW-54-085	12/09/20	N	<0.2	<10	<10	--	1.32	159	--	<0.0002	80.2	0.733	<100	--	<100	1,870	--
MW-54-085	06/08/21	N	<1	<10	<10	56.9	--	125	--	--	63.8	0.537	47.8	11	<10	1,670	<10
MW-54-085	12/14/21	N	<1	<10	<10	--	--	--	--	--	--	0.689	<100 J	--	<100 J	--	--
MW-54-140	06/19/20	N	<1	<1	2.66	--	--	--	--	--	--	0.106	--	--	--	--	--
MW-54-140	12/09/20	N	<1	<10	<10	--	1.86	144	--	<0.0002	15.3	<0.1	<100	--	<100	2,660	--
MW-54-140	06/08/21	N	<1	<10	<10	43	--	154	--	--	18.1	<0.1	44.3	20.9	<10	2,770	<10
MW-54-140	12/14/21	N	<1	<10	<10	--	--	--	--	--	--	<0.1	<100 J	--	<100 J	--	--
MW-54-195	06/19/20	N	<1	<1	<1	--	--	--	--	--	--	0.35	--	--	--	--	--
MW-54-195	12/09/20	N	<1	<10	<10	--	2.93	127	--	<0.0002	4.77	0.331	107	--	<100	2,980	--
MW-54-195	06/08/21	N	<1	<10	<10	38	--	127	--	--	4.78	0.282	109	33.4	<10	4,420	<10
MW-54-195	12/14/21	N	<1	<10	<10	--	--	--	--	--	--	0.285	111 J	--	<100 J	--	--
MW-55-045	06/19/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-55-045	12/09/20	N	<0.2	<10	--	--	0.565	32.9	--	<0.0002	7.4	0.789	<100	--	<100	231	--
MW-55-045	06/09/21	N	<0.2	<1	8.17 J	524	--	31.8	--	--	7.89	1 J	40.4	4.19	<1	231	1.19
MW-55-045	12/14/21	N	<0.2	<1	6.35 J	--	--	--	--	--	--	0.625	--	--	--	--	--
MW-55-120	06/19/20	N	7.94	9.2	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-55-120	06/19/20	FD	7.99	9.23	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-55-120	12/09/20	N	7.51	<10	--	--	1.65	62.9	--	<0.0002	1.33	<0.1	<100	--	<100	2,120	--
MW-55-120	06/09/21	N	7.47	<10	<10	41.4	--	64.6	--	--	1.43	--	36.4	18	<10	1,410	<10
MW-55-120	12/14/21	N	7.96	<10	<10	--	--	--	--	--	--	<0.1	--	--	--	--	--
MW-55-120	12/14/21	FD	7.95	<10	<10	--	--	--	--	--	--	<0.1	--	--	--	--	--
MW-56D	06/19/20	N	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-56D	12/09/20	N	<1	<10	--	--	2.78	412	--	1.06	82.4	0.812	<100	--	<100	4,650	--
MW-56D	06/09/21	N	<1	<10	<10	40.6	--	421	--	--	85.3	0.809 J	37.1	37.9	<10	4,860	<10
MW-56D	12/14/21	N	<1	<10	<10	--	--	--	--	--	--	0.804	<100 J	--	<100 J	--	--
MW-56M	06/19/20	N	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-56M	12/09/20	N	<1	<10	--	--	1.82	377	--	2.97	99.6	0.675	<100	--	<100	2,920	--
MW-56M	12/09/20	FD	<1	<10	--	--	1.83	375	--	2.95	96.7	0.654	<100	--	<100	2,930	--
MW-56M	06/09/21	N	<1	<10	<10	48.9	--	374	--	--	99.3	0.657 J	<20	20.3	<10	2,920	<10
MW-56M	06/09/21	FD	<1	<10	<10	48.3	--	382	--	--	99.8	0.689 J	<20	20.5	<10	2,900	<10
MW-56M	12/14/21	N	<1	<10	<10	--	--	--	--	--	--	0.784	<100 J	--	<100 J	--	--
MW-56S	06/19/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-56S	12/09/20	N	<0.2	<10	--	--	1.99	144	--	4.92	50.3	0.754	<100	--	<100	1,200	--
MW-56S	06/09/21	N	<0.2	<10	<10	68.2	--	148	--	--	60.3	0.823 J	28.6	10.8	<10	1,230	<10
MW-56S	12/14/21	N	<0.2	<10	<10	--	--	--	--	--	--	1.25	<100 J	--	<100 J	--	--
MW-57-070	06/22/20	N	610	530	1.3	--	--	--	--	--	--	0.0015	2.4	--	2.8	--	--
MW-57-070	12/04/20	N	630 J	660	1.3	--	0.4 J	250	--	<0.02 J	18 J	0.00098	2.6	--	3.2	75	--
MW-57-070	04/30/21	N	490	540	1.1	--	--	--	--	--	--	0.0034	3.5	--	3.6	--	--
MW-57-070	12/10/21	N	380	410	1.2	--	--	--	--	--	--	0.0011	4	--	3.7	--	--
MW-57-185	06/22/20	N	1.3	1.9	4.3	--	--	--	--	--	--	0.002	78	--	<0.5	--	--
MW-57-185	06/22/20	FD	1.4	2	4.1	--	--	--	--	--	--	0.0021	75	--	<0.5	--	--
MW-57-185	12/04/20	N	4.4 J	5	5.4	--	2.4 J	330	--	<0.1 J	<500 J	0.0014	83	--	<0.5	2,800	--
MW-57-185	04/30/21	N	4.2	4.3	<0.1	--	--	--	--	--	--	0.0011	83	--	<0.5	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-52S	11/30/21	FD	--	--	--	--	--	--	<0.1	--	--	1.4
MW-53D	06/16/20	N	--	--	--	--	--	--	--	--	--	--
MW-53D	12/08/20	N	36	--	8,800	--	--	--	--	1,200	15,000	--
MW-53D	04/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-53D	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-53M	06/16/20	N	--	--	--	--	--	--	--	--	--	--
MW-53M	12/08/20	N	46	--	6,700	--	--	--	--	740	12,000	--
MW-53M	04/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-53M	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-53S	11/30/21	N	--	--	--	--	--	--	<0.1	--	--	<1
MW-54-085	06/19/20	N	--	--	--	--	--	--	--	--	--	--
MW-54-085	12/09/20	N	155	--	2,910	--	--	--	--	562	5,780	--
MW-54-085	06/08/21	N	--	--	2,860	3	--	--	<0.2	439	5,640	--
MW-54-085	12/14/21	N	--	--	--	--	<0.5	--	--	--	--	--
MW-54-140	06/19/20	N	--	--	--	--	--	--	--	--	--	--
MW-54-140	12/09/20	N	107	--	4,010	--	--	--	--	565	7,790	--
MW-54-140	06/08/21	N	--	--	4,740	2.57	--	--	0.646	565	6,980	--
MW-54-140	12/14/21	N	--	--	--	--	0.605	--	--	--	--	--
MW-54-195	06/19/20	N	--	--	--	--	--	--	--	--	--	--
MW-54-195	12/09/20	N	62.6	--	6,090	--	--	--	--	869	11,500	--
MW-54-195	06/08/21	N	--	--	7,090	4.29	--	--	<0.5	884	11,400	--
MW-54-195	12/14/21	N	--	--	--	--	<1	--	--	--	--	--
MW-55-045	06/19/20	N	--	--	--	--	--	--	--	--	--	--
MW-55-045	12/09/20	N	155	--	258	--	--	--	--	76.4	751	--
MW-55-045	06/09/21	N	--	--	274	6.01	--	--	<0.1	84.4	689	--
MW-55-045	12/14/21	N	--	--	--	--	--	--	--	--	--	--
MW-55-120	06/19/20	N	--	--	--	--	--	--	--	--	--	--
MW-55-120	06/19/20	FD	--	--	--	--	--	--	--	--	--	--
MW-55-120	12/09/20	N	74.2	--	2,190	--	--	--	--	239	4,050	--
MW-55-120	06/09/21	N	--	--	2,170	4.93	--	--	1.28	245	3,750	--
MW-55-120	12/14/21	N	--	--	--	--	--	--	--	--	--	--
MW-55-120	12/14/21	FD	--	--	--	--	--	--	--	--	--	--
MW-56D	06/19/20	N	--	--	--	--	--	--	--	--	--	--
MW-56D	12/09/20	N	136	--	7,370	--	--	--	--	1,270	14,200	--
MW-56D	06/09/21	N	--	--	7,880	1.83	--	--	<0.5	1,340	13,300	--
MW-56D	12/14/21	N	--	--	--	--	<1	--	--	--	--	--
MW-56M	06/19/20	N	--	--	--	--	--	--	--	--	--	--
MW-56M	12/09/20	N	437	--	4,860	--	--	--	--	835	9,310	--
MW-56M	12/09/20	FD	438	--	4,820	--	--	--	--	854	9,490	--
MW-56M	06/09/21	N	--	--	5,060	0.96	--	--	<0.2	876	9,050	--
MW-56M	06/09/21	FD	--	--	4,950	1.02	--	--	0.475	945	8,890	--
MW-56M	12/14/21	N	--	--	--	--	<0.5	--	--	--	--	--
MW-56S	06/19/20	N	--	--	--	--	--	--	--	--	--	--
MW-56S	12/09/20	N	640	--	1,300	--	--	--	--	585	3,980	--
MW-56S	06/09/21	N	--	--	1,590	4.68	--	--	<0.2	650	3,840	--
MW-56S	12/14/21	N	--	--	--	--	<0.2	--	--	--	--	--
MW-57-070	06/22/20	N	--	--	--	--	--	--	8.8	--	--	--
MW-57-070	12/04/20	N	110	--	550	--	--	--	8.5	110	1,300	--
MW-57-070	04/30/21	N	--	--	--	--	--	--	9.3	--	--	--
MW-57-070	12/10/21	N	--	--	--	--	--	--	11	--	--	--
MW-57-185	06/22/20	N	--	--	--	--	--	--	0.14	--	--	--
MW-57-185	06/22/20	FD	--	--	--	--	--	--	0.12	--	--	--
MW-57-185	12/04/20	N	110	--	5,700	--	--	--	0.18	700	11,000	--
MW-57-185	04/30/21	N	--	--	--	--	--	--	0.25	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-57-185	12/10/21	N	<1	<1	<0.1	--	--	--	--	--	--	0.0032	78	--	<0.5	--	--
MW-58BR	02/17/20	N	120	120	0.11	--	--	--	--	--	--	0.16	22	--	2.7	--	--
MW-58BR	05/01/20	N	43	41	1.9	--	--	--	--	--	--	0.14	24	--	1.9	--	--
MW-58BR	09/29/20	N	3.9	4.5	1	--	--	--	--	--	--	0.29	29	--	2	--	--
MW-58BR	11/30/20	N	5.2	5.7	2.4	--	1.3 J	320 J	--	<0.02	31 J	0.33	27	--	2.3	1,000 J	--
MW-58BR	02/15/21	N	4.2	5.2	2.1	--	--	--	--	--	--	0.32	26	--	2.1	--	--
MW-58BR	05/17/21	N	2.7	2.8	<0.1	--	--	--	--	--	--	0.31	28	--	1.7	--	--
MW-58BR	05/17/21	FD	2.3	2.2	<0.1	--	--	--	--	--	--	0.28	27	--	1.7	--	--
MW-58BR	08/26/21	N	16	17	<0.1 J	--	--	--	--	--	--	0.38	26	--	2.2	--	--
MW-58BR	12/09/21	N	6.4	7.3	<0.1 J	--	--	--	--	--	--	0.35	25	--	1.9	--	--
MW-59-100	06/22/20	N	2,100	2,200	<0.1	--	--	--	--	--	--	0.01	9	--	1.9	--	--
MW-59-100	12/08/20	N	2,700	2,900	2.2	69	1.5 J	550 J	--	0.042 J	25 J	0.0015	4.8	--	3.2 J	1,500 J	<1
MW-59-100	12/08/20	FD	2,700	2,800	2.2	70	3.4 J	670 J	--	0.27 J	27 J	0.0013	4.7	--	4.1 J	1,400 J	<1
MW-59-100	02/17/21	N	2,500	2,800	--	--	--	--	--	--	--	--	6.6	--	4.3	--	--
MW-59-100	06/07/21	N	1,800	1,900	<0.1 J	--	--	--	--	--	--	0.002 J	11	--	2	--	--
MW-59-100	12/15/21	N	2,000	2,000	<0.1	--	--	--	--	--	--	0.0097	8	--	2.1	--	--
MW-60-125	06/24/20	N	660	630	<0.1	--	--	--	--	--	--	0.0047	17	--	5.2	--	--
MW-60-125	10/01/20	N	580	570	<0.1	--	0.82	450 J	--	<0.02	--	0.005	18	--	6.5	1,300	--
MW-60-125	05/27/21	N	390	390	<0.1 J	--	--	--	--	--	--	0.003	16	--	6.5	--	--
MW-60-125	12/16/21	N	480	480	<0.1	--	--	--	--	--	--	0.0061	19	--	5.8	--	--
MW-60BR-245	02/20/20	N	52	44	6	--	--	--	--	--	--	0.007	57	--	3	--	--
MW-60BR-245	09/30/20	N	21	22	<0.1	--	--	--	--	--	--	0.002	63	--	3.4 J	--	--
MW-60BR-245	12/17/20	N	16	15	<0.1	--	2.4	390	--	<0.1	7 J	0.0016	65	--	2.9	3,600 J	--
MW-60BR-245	02/18/21	N	22	23 J	5.6	--	--	--	--	--	--	0.0015	70	--	3.1	--	--
MW-60BR-245	05/27/21	N	9.4	8.9	<0.1 J	--	--	--	--	--	--	<0.0005	64	--	2.5	--	--
MW-60BR-245	08/26/21	N	5.5	5.5	<0.1 J	--	--	--	--	--	--	<0.0005	64	--	3.8	--	--
MW-60BR-245	12/16/21	N	7.1	8.6	<0.1	--	--	--	--	--	--	0.0016	--	--	--	--	--
MW-61-110	12/04/20	N	430 J	440	<0.1	--	2.4 J	610	--	<0.1 J	26 J	0.24	22	--	1.3	2,700	--
MW-61-110	05/27/21	N	160	150	<0.1 J	--	--	--	--	--	--	0.3	23	--	0.83	--	--
MW-61-110	12/10/21	N	370	390	<0.1	--	--	--	--	--	--	0.35	22	--	1.1	--	--
MW-62-065	02/19/20	N	480	460	0.13	--	--	--	--	--	--	0.0035	13	--	3.8	--	--
MW-62-065	04/28/20	N	580	550	<0.1	--	--	--	--	--	--	0.0049	15	--	3.8	--	--
MW-62-065	09/30/20	N	590	610	<0.1	--	--	--	--	--	--	0.0033	13	--	4.7 J	--	--
MW-62-065	12/04/20	N	620	570	<0.1	--	0.88 J	180	--	<0.02 J	30 J	<0.0005	12	--	3.5	870	--
MW-62-065	02/18/21	N	530	580 J	1.5	--	--	--	--	--	--	0.0034	14	--	3.8	--	--
MW-62-065	05/27/21	N	670	640	<0.1 J	--	--	--	--	--	--	0.0011	12	--	4.1	--	--
MW-62-065	08/27/21	N	590	660	<0.1 J	--	--	--	--	--	--	0.0017	13	--	3.9	--	--
MW-62-065	08/27/21	FD	600	610	<0.1 J	--	--	--	--	--	--	0.0022	13	--	3.6	--	--
MW-62-065	12/15/21	N	580	610	<0.1	--	--	--	--	--	--	<0.0005	11	--	3.4	--	--
MW-62-110	02/18/20	N	<0.2	<1	5.7	--	--	--	--	--	--	0.15	49	--	<0.5	--	--
MW-62-110	04/29/20	N	<1	<1	2.9	--	--	--	--	--	--	0.13	71	--	<0.5	--	--
MW-62-110	09/30/20	N	<1	<1	<0.1	--	--	--	--	--	--	0.14	47	--	<0.5	--	--
MW-62-110	12/02/20	N	<0.2	<1	8.1	--	1.5	140	--	0.35	9.2	0.21	50	--	<0.5	1,600	--
MW-62-110	02/16/21	N	<0.2	<1	4.5 J	--	--	--	--	--	--	0.13	50	--	<0.5	--	--
MW-62-110	06/08/21	N	<1	<1	<0.1 J	--	--	--	--	--	--	0.16 J	64	--	<0.5	--	--
MW-62-110	08/27/21	N	<1	<1	<0.1 J	--	--	--	--	--	--	0.15	56	--	<0.5	--	--
MW-62-110	12/01/21	N	<1	<1	5.2	--	--	--	--	--	--	0.18	38	--	<0.5	--	--
MW-62-190	04/29/20	N	<1	<1	<0.5	--	--	--	--	--	--	0.7	41	--	<2.5	--	--
MW-62-190	04/29/20	FD	<1	<1	<0.5	--	--	--	--	--	--	0.72	40	--	<2.5	--	--
MW-62-190	12/02/20	N	<1	<1	3.4	--	2.9	290	--	1.40	18	0.9	43	--	<0.5	2,800	--
MW-62-190	06/08/21	N	<1	<1	<0.1 J	--	--	--	--	--	--	0.71 J	46	--	<0.5	--	--
MW-62-190	12/01/21	N	<1	<1	<0.1	--	--	--	--	--	--	0.57	29	--	<0.5	--	--
MW-63-065	02/19/20	N	1.2	2.5	<0.1	--	--	--	--	--	--	0.014	18	--	0.89	--	--
MW-63-065	02/19/20	FD	1.2	2.8	<0.1	--	--	--	--	--	--	0.017	18	--	0.86	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-57-185	12/10/21	N	--	--	--	--	--	--	<0.1	--	--	--
MW-58BR	02/17/20	N	--	--	--	--	--	--	1.8	--	--	--
MW-58BR	05/01/20	N	--	--	--	--	--	--	0.77	--	--	--
MW-58BR	09/29/20	N	--	--	--	--	--	--	0.39	--	--	--
MW-58BR	11/30/20	N	47	--	2,200	--	--	--	0.5	470	4,600	--
MW-58BR	02/15/21	N	--	--	--	--	--	--	0.46	--	--	--
MW-58BR	05/17/21	N	--	--	--	--	--	--	0.46 J	--	--	--
MW-58BR	05/17/21	FD	--	--	--	--	--	--	0.95 J	--	--	--
MW-58BR	08/26/21	N	--	--	--	--	--	--	0.71	--	--	--
MW-58BR	12/09/21	N	--	--	--	--	--	--	0.74	--	--	--
MW-59-100	06/22/20	N	--	--	--	--	--	--	2.1	--	--	--
MW-59-100	12/08/20	N	110	--	3,100	--	--	--	3.4	570	6,700	--
MW-59-100	12/08/20	FD	110	--	3,100	--	--	--	3.5	580	7,200	--
MW-59-100	02/17/21	N	--	--	--	--	--	--	3.6	--	--	--
MW-59-100	06/07/21	N	--	--	--	--	--	--	1.8	--	--	--
MW-59-100	12/15/21	N	--	--	--	--	--	--	2.3	--	--	--
MW-60-125	06/24/20	N	--	--	--	--	--	--	3.8	--	--	--
MW-60-125	10/01/20	N	60	--	2,700	1.5	--	--	4.1	460	6,800	--
MW-60-125	05/27/21	N	--	--	--	--	--	--	3.9	--	--	--
MW-60-125	12/16/21	N	--	--	--	--	--	--	3.8	--	--	--
MW-60BR-245	02/20/20	N	--	--	--	--	--	--	0.22	--	--	--
MW-60BR-245	09/30/20	N	--	--	--	--	--	--	0.18	--	--	--
MW-60BR-245	12/17/20	N	24	--	5,600	--	--	--	0.18	780	11,000	--
MW-60BR-245	02/18/21	N	--	--	--	--	--	--	0.25	--	--	--
MW-60BR-245	05/27/21	N	--	--	--	--	--	--	0.21	--	--	--
MW-60BR-245	08/26/21	N	--	--	--	--	--	--	0.12	--	--	--
MW-60BR-245	12/16/21	N	--	--	--	--	--	--	--	--	--	--
MW-61-110	12/04/20	N	46	--	5,400	--	--	--	0.8	720	11,000	--
MW-61-110	05/27/21	N	--	--	--	--	--	--	0.38	--	--	--
MW-61-110	12/10/21	N	--	--	--	--	--	--	0.63	--	--	--
MW-62-065	02/19/20	N	--	--	--	--	--	--	5.1	--	--	--
MW-62-065	04/28/20	N	--	--	--	--	--	--	4.6	--	--	--
MW-62-065	09/30/20	N	--	--	--	--	--	--	5.1	--	--	--
MW-62-065	12/04/20	N	110	--	1,800	--	--	--	4.6	430	3,800	--
MW-62-065	02/18/21	N	--	--	--	--	--	--	4.8	--	--	--
MW-62-065	05/27/21	N	--	--	--	--	--	--	4.6	--	--	--
MW-62-065	08/27/21	N	--	--	--	--	--	--	5.2	--	--	--
MW-62-065	08/27/21	FD	--	--	--	--	--	--	4.9	--	--	--
MW-62-065	12/15/21	N	--	--	--	--	--	--	5	--	--	--
MW-62-110	02/18/20	N	--	--	--	--	--	--	0.055	--	--	--
MW-62-110	04/29/20	N	--	--	--	--	--	--	3.3	--	--	--
MW-62-110	09/30/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-62-110	12/02/20	N	83	--	2,900	--	--	--	<0.1	550	6,200	--
MW-62-110	02/16/21	N	--	--	--	--	--	--	--	--	--	--
MW-62-110	06/08/21	N	--	--	--	--	--	--	0.1	--	--	--
MW-62-110	08/27/21	N	--	--	--	--	--	--	<0.1	--	--	--
MW-62-110	12/01/21	N	--	--	--	--	--	--	<0.1	--	--	--
MW-62-190	04/29/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-62-190	04/29/20	FD	--	--	--	--	--	--	<0.05	--	--	--
MW-62-190	12/02/20	N	57	--	6,000	--	--	--	<0.1	710	12,000	--
MW-62-190	06/08/21	N	--	--	--	--	--	--	0.11	--	--	--
MW-62-190	12/01/21	N	--	--	--	--	--	--	<0.1	--	--	--
MW-63-065	02/19/20	N	--	--	--	--	--	--	1	--	--	--
MW-63-065	02/19/20	FD	--	--	--	--	--	--	1.1	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-63-065	06/24/20	N	1.3	2.6	<0.1	--	--	--	--	--	--	0.01	15	--	0.89	--	--
MW-63-065	09/30/20	N	1.3	2.3	<0.1	--	--	--	--	--	--	0.0017	17	--	1.3 J	--	--
MW-63-065	12/07/20	N	1.7	2.7 J	<0.1	--	0.77 J	150 J	--	0.034 J	23 J	0.0014	16 J	--	1.2 J	950 J	--
MW-63-065	02/18/21	N	1.2	3.1 J	1.6	--	--	--	--	--	--	0.006	17	--	0.93	--	--
MW-63-065	05/27/21	N	1.2	3.3	<0.1 J	--	--	--	--	--	--	0.028	17	--	0.99	--	--
MW-63-065	08/26/21	N	1.3	1.7	<0.1 J	--	--	--	--	--	--	0.0033	16	--	1.1	--	--
MW-63-065	12/16/21	N	1.4	1.3	<0.1	--	--	--	--	--	--	<0.0005	16	--	0.74	--	--
MW-64BR	02/21/20	N	<1	<1	3.2	--	--	--	--	--	--	0.91	61	--	<0.5	--	--
MW-64BR	05/01/20	N	<0.2	1.8	0.77	--	--	--	--	--	--	0.16	37	--	<0.5	--	--
MW-64BR	09/30/20	N	<1	<1	<0.1	--	--	--	--	--	--	1	66	--	<0.5	--	--
MW-64BR	11/30/20	N	<1	<1	2.3	--	2 J	260 J	--	0.71 J	22 J	1	68	--	<0.5	2,600 J	--
MW-64BR	02/18/21	N	<1	<1 J	1.9	--	--	--	--	--	--	1	65	--	<0.5	--	--
MW-64BR	05/27/21	N	<1	<1	<0.1 J	--	--	--	--	--	--	0.96	61	--	<0.5	--	--
MW-64BR	08/26/21	N	<1	<1	<0.1 J	--	--	--	--	--	--	0.97	60	--	<0.5	--	--
MW-64BR	12/16/21	N	<1	<1	<0.1	--	--	--	--	--	--	1	58	--	<0.5	--	--
MW-65-160	02/20/20	N	250	250	0.34	--	--	--	--	--	--	0.00052	28	--	9.2	--	--
MW-65-160	04/29/20	N	190	210	0.63	--	--	--	--	--	--	0.052	40	--	7.2	--	--
MW-65-160	09/29/20	N	240	240	0.35	--	--	--	--	--	--	0.029	26	--	9.7	--	--
MW-65-160	12/03/20	N	210	240	<0.1	--	1.1	280	--	0.62	50	0.051	27	--	9 J	460	--
MW-65-160	02/16/21	N	240	250 J	0.84 J	--	--	--	--	--	--	0.0054	25	--	11	--	--
MW-65-160	05/27/21	N	270	260	<0.1 J	--	--	--	--	--	--	<0.0005	26	--	10	--	--
MW-65-160	08/25/21	N	290	310	<0.1 J	--	--	--	--	--	--	0.00075	24	--	9.4	--	--
MW-65-160	12/08/21	N	300	310	<0.1	--	--	--	--	--	--	0.00097 J	23	--	10	--	--
MW-65-225	02/20/20	N	460	470	0.34	--	--	--	--	--	--	0.0044	27	--	6.9	--	--
MW-65-225	04/29/20	N	280	260	<0.1	--	--	--	--	--	--	0.092	43	--	3.7	--	--
MW-65-225	09/29/20	N	260	250	<0.1	--	--	--	--	--	--	0.045	43	--	3.7	--	--
MW-65-225	12/03/20	N	360	350	<0.1	--	1.7	270	--	0.098	21	0.026	32	--	5.2 J	1,800	--
MW-65-225	02/16/21	N	330	340 J	2.3 J	--	--	--	--	--	--	0.008	33	--	4.9	--	--
MW-65-225	05/27/21	N	460	430	<0.1 J	--	--	--	--	--	--	0.0007	22	--	6.7	--	--
MW-65-225	08/25/21	N	200	210	<0.1 J	--	--	--	--	--	--	0.0074	39	--	3	--	--
MW-65-225	12/08/21	N	83	80	<0.1	--	--	--	--	--	--	0.043 J	50	--	1.8	--	--
MW-65-225	12/08/21	FD	83	81	<0.1	--	--	--	--	--	--	0.05 J	50	--	1.7	--	--
MW-66-165	04/29/20	N	530	520	0.39	--	--	--	--	--	--	0.0077	6.2	--	29	--	--
MW-66-165	12/03/20	N	400	390	0.69 J	--	0.78	210	--	0.2 J	47 J	0.003	5.8	14 J	19	420 J	--
MW-66-165	12/03/20	FD	410	420	0.42	--	0.9	190	--	0.16	48	0.0031	5.5	--	19 J	390	--
MW-66-165	02/16/21	N	400	400 J	--	--	--	--	--	--	--	--	6.4	--	20	--	--
MW-66-165	05/05/21	N	520	500 J	<0.1	--	--	240	--	--	--	0.0022	5.8	20 J	24	530	--
MW-66-165	09/24/21	N	360	410	<0.1 J	--	--	230 J	--	--	37 J	0.0048	6.7	13	17	490	--
MW-66-165	12/07/21	N	350	350	0.49 J	--	--	--	--	--	--	<0.0005 J	5.4	--	11	--	--
MW-66-230	04/29/20	N	6,700	6,300	8.4	--	--	--	--	--	--	0.0023	79	--	17	--	--
MW-66-230	04/29/20	FD	6,600	6,600	8.7	--	--	--	--	--	--	0.0023	81	--	17	--	--
MW-66-230	12/03/20	N	6,500	6,400	8 J	--	3	350	--	<0.1 J	7.1 J	0.0013	72	68 J	12	4,000 J	--
MW-66-230	12/03/20	FD	6,300	6,500	8 J	--	2.7	360	--	<0.1 J	7.1 J	0.0014	75	--	12	3,500 J	--
MW-66-230	02/16/21	N	6,000	6,500 J	--	--	--	--	--	--	--	--	75	--	16	--	--
MW-66-230	05/05/21	N	6,000	6,200 J	<0.1	--	--	96	--	--	--	0.012	74	57 J	7.6	5,300	--
MW-66-230	09/24/21	N	4,800	5,400	3.4 J	--	--	570 J	--	--	5.3 J	0.014	76	56	7.1	5,200	--
MW-66-230	12/07/21	N	5,000	5,200	8.9 J	--	--	--	--	--	--	0.0081 J	67	--	6.9	--	--
MW-66BR-270	06/24/20	N	<1	<1	<0.1	--	--	--	--	--	--	6.70	1.1	--	<0.5	--	--
MW-66BR-270	12/16/20	N	<1	1.2	<0.1	--	3	320	--	30	33 J	2.70	3.1	--	<0.5	3,500 J	--
MW-66BR-270	12/16/20	FD	<1	<1	<0.1	--	2.6	280	--	27 J	30 J	2.80	3	--	<0.5	3,600 J	--
MW-66BR-270	02/26/21	N	<1	<1	--	--	--	--	--	--	--	--	3.9	--	<0.5	--	--
MW-66BR-270	05/05/21	N	<1	<1 J	<0.1	--	--	370	--	--	--	1	1.9	52 J	<0.5	4,700	--
MW-66BR-270	10/08/21	N	<1	<1	0.11	--	--	280	--	--	18 J	0.04	12	38 J	<0.5	3,600	--
MW-66BR-270	12/16/21	N	<1	1.9	<0.1	--	--	--	--	--	--	0.82	--	--	--	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-63-065	06/24/20	N	--	--	--	--	--	--	1.8	--	--	--
MW-63-065	09/30/20	N	--	--	--	--	--	--	2.4	--	--	--
MW-63-065	12/07/20	N	200	--	1,900	--	--	--	2	570	4,400	--
MW-63-065	02/18/21	N	--	--	--	--	--	--	1.4	--	--	--
MW-63-065	05/27/21	N	--	--	--	--	--	--	1.3	--	--	--
MW-63-065	08/26/21	N	--	--	--	--	--	--	1.5	--	--	--
MW-63-065	12/16/21	N	--	--	--	--	--	--	1.3	--	--	--
MW-64BR	02/21/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-64BR	05/01/20	N	--	--	--	--	--	--	0.056	--	--	--
MW-64BR	09/30/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-64BR	11/30/20	N	69	--	4,300	--	--	--	0.1	590	8,700	--
MW-64BR	02/18/21	N	--	--	--	--	--	--	0.075	--	--	--
MW-64BR	05/27/21	N	--	--	--	--	--	--	<0.05	--	--	--
MW-64BR	08/26/21	N	--	--	--	--	--	--	<0.1	--	--	--
MW-64BR	12/16/21	N	--	--	--	--	--	--	<0.1	--	--	--
MW-65-160	02/20/20	N	--	--	--	--	--	--	14	--	--	--
MW-65-160	04/29/20	N	--	--	--	--	--	--	10	--	--	--
MW-65-160	09/29/20	N	--	--	--	--	--	--	13	--	--	--
MW-65-160	12/03/20	N	130	--	990	--	--	--	11	540	2,600	--
MW-65-160	02/16/21	N	--	--	--	--	--	--	15	--	--	--
MW-65-160	05/27/21	N	--	--	--	--	--	--	15	--	--	--
MW-65-160	08/25/21	N	--	--	--	--	--	--	15	--	--	--
MW-65-160	12/08/21	N	--	--	--	--	--	--	16	--	--	--
MW-65-225	02/20/20	N	--	--	--	--	--	--	10	--	--	--
MW-65-225	04/29/20	N	--	--	--	--	--	--	4.9	--	--	--
MW-65-225	09/29/20	N	--	--	--	--	--	--	4	--	--	--
MW-65-225	12/03/20	N	88	--	3,200	--	--	--	6	690	6,600	--
MW-65-225	02/16/21	N	--	--	--	--	--	--	6.9	--	--	--
MW-65-225	05/27/21	N	--	--	--	--	--	--	8.3	--	--	--
MW-65-225	08/25/21	N	--	--	--	--	--	--	3.2	--	--	--
MW-65-225	12/08/21	N	--	--	--	--	--	--	2	--	--	--
MW-65-225	12/08/21	FD	--	--	--	--	--	--	1.9	--	--	--
MW-66-165	04/29/20	N	--	--	--	--	--	--	29	--	--	--
MW-66-165	12/03/20	N	120	--	880	--	--	--	24	420	2,200	--
MW-66-165	12/03/20	FD	110	--	870	--	--	--	23	420	2,200	--
MW-66-165	02/16/21	N	--	--	--	--	--	--	22 J	--	--	--
MW-66-165	05/05/21	N	--	--	940	--	--	--	24	450	2,300	--
MW-66-165	09/24/21	N	--	--	820	--	--	--	19	360	2,100	--
MW-66-165	12/07/21	N	--	--	--	--	--	--	19	--	--	--
MW-66-230	04/29/20	N	--	--	--	--	--	--	23	--	--	--
MW-66-230	04/29/20	FD	--	--	--	--	--	--	23	--	--	--
MW-66-230	12/03/20	N	31	--	6,100	--	--	--	13	1,100	13,000	--
MW-66-230	12/03/20	FD	32	--	6,300	--	--	--	14	1,100	14,000	--
MW-66-230	02/16/21	N	--	--	--	--	--	--	23 J	--	--	--
MW-66-230	05/05/21	N	--	--	6,600	--	--	--	11	1,000	12,000	--
MW-66-230	09/24/21	N	--	--	7,000	--	--	--	8.8	990	13,000	--
MW-66-230	12/07/21	N	--	--	--	--	--	--	10	--	--	--
MW-66BR-270	06/24/20	N	--	--	--	--	--	--	0.47	--	--	--
MW-66BR-270	12/16/20	N	6.4	--	5,600	--	--	--	<0.05	250	12,000	--
MW-66BR-270	12/16/20	FD	5.3	--	5,600	--	--	--	<0.05	250	11,000	--
MW-66BR-270	02/26/21	N	--	--	--	--	--	--	<0.05	--	--	--
MW-66BR-270	05/05/21	N	--	--	6,200	--	--	--	<0.05	290	10,000	--
MW-66BR-270	10/08/21	N	--	--	5,600	--	--	--	<0.1	250	9,200	--
MW-66BR-270	12/16/21	N	--	--	--	--	--	--	--	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-67-185	04/30/20	N	2,000	2,000	<0.1	--	--	--	--	--	--	<0.0005	5.1	--	380	--	--
MW-67-185	10/06/20	N	2,000	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-67-185	12/02/20	N	2,900	3,000	0.74	--	0.72	640	--	0.11	160	0.0027	14	--	330	420	--
MW-67-185	02/16/21	N	640	690 J	--	--	--	--	--	--	--	--	60	--	250	--	--
MW-67-185	05/04/21	N	2,000	2,000	<0.1	--	--	820	--	--	--	<0.0005	5.6	20	430	920 J	--
MW-67-185	05/04/21	FD	2,000	1,900	<0.1	--	--	720	--	--	--	<0.0005	5.6	20	430	940 J	--
MW-67-185	09/23/21	N	<100	<5 J	2.2 J	--	--	190 J	--	--	29	1.60	89 J	18	54	330	--
MW-67-185	12/07/21	N	<100	<1	<0.1 J	--	--	--	--	--	--	2 J	47	--	26	--	--
MW-67-225	04/30/20	N	3,000	3,200	1.3	--	--	--	--	--	--	0.0052	48	--	87	--	--
MW-67-225	12/02/20	N	3,800	4,000	5	--	1.5	92	--	2.30	7.1	0.058	58	--	100	1,100	--
MW-67-225	02/16/21	N	4,100	3,500 J	--	--	--	--	--	--	--	--	88	--	92	--	--
MW-67-225	05/04/21	N	3,400	3,400	0.81	--	--	150	--	--	--	0.0053	54	17	89	1,600 J	--
MW-67-225	09/24/21	N	2,100	2,400	<0.1 J	--	--	140 J	--	--	6.3 J	0.032	72	16	72	1,400	--
MW-67-225	12/07/21	N	2,800	3,000	<0.1 J	--	--	--	--	--	--	0.0012 J	42	--	50	--	--
MW-67-260	04/30/20	N	1,100	1,100	11	--	--	--	--	--	--	0.12	67	--	<2.5	--	--
MW-67-260	12/02/20	N	250	250	1.6	--	0.68	370	--	0.18	<500	0.0015	24	--	1.1	1,100	--
MW-67-260	02/19/21	N	350	380	--	--	--	--	--	--	--	--	35	--	1.1	--	--
MW-67-260	05/04/21	N	920	940	<0.1	--	--	340	--	--	--	0.00072	63	67	1.4	4,400 J	--
MW-67-260	09/24/21	N	770	840	<0.1 J	--	--	340 J	--	--	0.11 J	0.00057	70	77	1.4	4,500	--
MW-67-260	12/07/21	N	810	760	<0.1 J	--	--	--	--	--	--	0.0017 J	60	--	1.4	--	--
MW-68-180	02/20/20	N	25,000	27,000	1.8	--	--	--	--	--	--	0.0061	63	--	15	--	--
MW-68-180	04/30/20	N	41,000	43,000	1.8	--	--	--	--	--	--	0.0096	53	--	21	--	--
MW-68-180	09/29/20	N	54,000	51,000	2.4	--	--	--	--	--	--	0.0069	57	--	28	--	--
MW-68-180	12/16/20	N	61,000	66,000	3.1	--	0.68	590	--	0.1 J	62 J	0.00079	53	17 J	22	740 J	--
MW-68-180	12/16/20	FD	61,000	63,000	3.1	--	<500	580	--	<0.1 J	60 J	0.0028	54	18 J	24	740	--
MW-68-180	02/19/21	N	63,000	66,000	3.2	--	--	--	--	--	--	<0.0005	53	--	23	--	--
MW-68-180	05/04/21	N	37,000	37,000	2	--	--	420	--	--	--	<0.0005	46	13	14	550 J	--
MW-68-180	06/28/21	N	62,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-68-180	07/27/21	N	65,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-68-180	08/16/21	N	47,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-68-180	09/09/21	N	48,000	60,000	1	--	--	--	--	--	--	0.0014	55	--	25	--	--
MW-68-180	09/23/21	N	46,000	56,000 J	1 J	--	--	680 J	--	--	65	<0.0005	58 J	18	25	680	--
MW-68-180	10/07/21	N	49,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-68-180	11/02/21	N	34,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-68-180	12/07/21	N	26,000	28,000	1.9 J	--	--	--	--	--	--	<0.0005 J	50	--	15	--	--
MW-68-240	04/30/20	N	2,000	2,000	<0.5	--	--	--	--	--	--	0.017	22	--	3.7	--	--
MW-68-240	12/16/20	N	2,000	2,000	1.7	--	2.2	420	--	<0.02 J	21 J	0.02	24	46 J	3.8	2,400	--
MW-68-240	12/16/20	FD	2,000	1,900	1.9	--	2.3	440 J	--	<0.02 J	22 J	0.019	24	43 J	3.3	3,300	--
MW-68-240	02/19/21	N	1,900	2,000	--	--	--	--	--	--	--	--	24	--	5	--	--
MW-68-240	02/19/21	FD	1,900	2,000	--	--	--	--	--	--	--	--	24	--	4.2	--	--
MW-68-240	05/04/21	N	2,000	2,000	<0.1	--	--	590	--	--	--	0.023	24	38	4.1	4,200 J	--
MW-68-240	09/23/21	N	1,800	2,000 J	<0.1 J	--	--	660 J	--	--	19	0.018	28 J	43	4.4	4,300	--
MW-68-240	12/07/21	N	1,900	2,000	<0.1 J	--	--	--	--	--	--	0.012 J	25	--	3.9	--	--
MW-68-240	12/07/21	FD	1,900	1,900	<0.1 J	--	--	--	--	--	--	0.012 J	24	--	3.4	--	--
MW-68BR-280	04/30/20	N	<1	<1	0.36	--	--	--	--	--	--	0.11	13	--	<2.5	--	--
MW-68BR-280	12/16/20	N	<1	<1	0.35	--	2.2	370	--	0.03 J	3.4 J	0.059	17 J	51 J	<0.5	3,800 J	--
MW-68BR-280	12/16/20	FD	<1	1.4	0.46	--	2.5	400	--	0.027 J	3.7 J	0.06	18 J	53 J	<0.5	4,700	--
MW-68BR-280	02/19/21	N	<1	<1	--	--	--	--	--	--	--	--	20	--	<0.5	--	--
MW-68BR-280	05/04/21	N	<1	1.3	<0.1	--	--	410	--	--	--	0.055	24	44	<0.5	5,400 J	--
MW-68BR-280	09/23/21	N	<1	<1 J	<0.1 J	--	--	340 J	--	--	2.7	0.068	27 J	47	<0.5	5,900	--
MW-68BR-280	12/02/21	N	<1	<1	<0.1 J	--	--	--	--	--	--	0.06	--	--	--	--	--
MW-69-195	02/25/20	N	150	140	2	--	--	--	--	--	--	0.0065	68	--	7.9	--	--
MW-69-195	05/01/20	N	170	170	1.6	--	--	--	--	--	--	0.012 J	53	--	7	--	--
MW-69-195	05/01/20	FD	180	170	1.6	--	--	--	--	--	--	0.0092 J	52	--	7.2	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-67-185	04/30/20	N	--	--	--	--	--	--	91	--	--	--
MW-67-185	10/06/20	N	--	--	--	--	--	--	--	--	--	--
MW-67-185	12/02/20	N	80	--	1,900	--	--	--	89	640	4,900	--
MW-67-185	02/16/21	N	--	--	--	--	--	--	78 J	--	--	--
MW-67-185	05/04/21	N	--	--	2,300	--	--	--	100	590	5,300	--
MW-67-185	05/04/21	FD	--	--	2,300	--	--	--	95	580	6,100	--
MW-67-185	09/23/21	N	--	--	910	--	--	--	0.12	360	2,100	--
MW-67-185	12/07/21	N	--	--	--	--	--	--	8.5	--	--	--
MW-67-225	04/30/20	N	--	--	--	--	--	--	27	--	--	--
MW-67-225	12/02/20	N	160	--	1,300	--	--	--	28	1,300	4,300	--
MW-67-225	02/16/21	N	--	--	--	--	--	--	26 J	--	--	--
MW-67-225	05/04/21	N	--	--	1,500	--	--	--	26	1,100	4,700	--
MW-67-225	09/24/21	N	--	--	1,300	--	--	--	32	990	4,000	--
MW-67-225	12/07/21	N	--	--	--	--	--	--	15	--	--	--
MW-67-260	04/30/20	N	--	--	--	--	--	--	0.62	--	--	--
MW-67-260	12/02/20	N	2,100	--	730	--	--	--	0.61	170	7,200	--
MW-67-260	02/19/21	N	--	--	--	--	--	--	0.71	--	--	--
MW-67-260	05/04/21	N	--	--	5,500	--	--	--	0.65	720	11,000	--
MW-67-260	09/24/21	N	--	--	5,300	--	--	--	0.61	690	11,000	--
MW-67-260	12/07/21	N	--	--	--	--	--	--	0.66	--	--	--
MW-68-180	02/20/20	N	--	--	--	--	--	--	29	--	--	--
MW-68-180	04/30/20	N	--	--	--	--	--	--	36	--	--	--
MW-68-180	09/29/20	N	--	--	--	--	--	--	35	--	--	--
MW-68-180	12/16/20	N	110	--	840	--	--	--	24 J	1,700	4,200	--
MW-68-180	12/16/20	FD	100	--	850	--	--	--	10 J	1,700	4,300	--
MW-68-180	02/19/21	N	--	--	--	--	--	--	23	--	--	--
MW-68-180	05/04/21	N	--	--	740	--	--	--	15	1,100	3,000	--
MW-68-180	06/28/21	N	--	--	--	--	--	--	--	--	--	--
MW-68-180	07/27/21	N	--	--	--	--	--	--	--	--	--	--
MW-68-180	08/16/21	N	--	--	--	--	--	--	--	--	--	--
MW-68-180	09/09/21	N	--	--	--	--	--	--	34	--	--	--
MW-68-180	09/23/21	N	--	--	1,100	--	--	--	34	1,400	4,300	--
MW-68-180	10/07/21	N	--	--	--	--	--	--	--	--	--	--
MW-68-180	11/02/21	N	--	--	--	--	--	--	--	--	--	--
MW-68-180	12/07/21	N	--	--	--	--	--	--	27	--	--	--
MW-68-240	04/30/20	N	--	--	--	--	--	--	4.1	--	--	--
MW-68-240	12/16/20	N	62	--	4,900	--	--	--	3.7	890	12,000	--
MW-68-240	12/16/20	FD	64	--	4,900	--	--	--	4	880	11,000	--
MW-68-240	02/19/21	N	--	--	--	--	--	--	4.6	--	--	--
MW-68-240	02/19/21	FD	--	--	--	--	--	--	4.4	--	--	--
MW-68-240	05/04/21	N	--	--	5,400	--	--	--	4.2	880	11,000	--
MW-68-240	09/23/21	N	--	--	5,400	--	--	--	4.8	890	11,000	--
MW-68-240	12/07/21	N	--	--	--	--	--	--	5.1	--	--	--
MW-68-240	12/07/21	FD	--	--	--	--	--	--	5.1	--	--	--
MW-68BR-280	04/30/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-68BR-280	12/16/20	N	15	--	6,900	--	--	--	<0.1	680	13,000 J	--
MW-68BR-280	12/16/20	FD	15	--	6,700	--	--	--	<0.05	680	12,000	--
MW-68BR-280	02/19/21	N	--	--	--	--	--	--	<0.05	--	--	--
MW-68BR-280	05/04/21	N	--	--	7,300	--	--	--	<0.05	690	13,000	--
MW-68BR-280	09/23/21	N	--	--	7,200	--	--	--	<0.1	670	13,000	--
MW-68BR-280	12/02/21	N	--	--	--	--	--	--	--	--	--	--
MW-69-195	02/25/20	N	--	--	--	--	--	--	11	--	--	--
MW-69-195	05/01/20	N	--	--	--	--	--	--	11	--	--	--
MW-69-195	05/01/20	FD	--	--	--	--	--	--	9.6	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-69-195	09/29/20	N	350	380	3.3	--	--	--	--	--	--	0.16	58	--	10	--	--
MW-69-195	12/03/20	N	6	9.4	1.7	--	1.1	79	--	0.49	12	0.023	70	--	6 J	360	--
MW-69-195	02/15/21	N	29	59	2.8	--	--	--	--	--	--	0.0068	67	--	8.3	--	--
MW-69-195	02/15/21	FD	27	59	2.8	--	--	--	--	--	--	0.007	68	--	7.8	--	--
MW-69-195	05/27/21	N	610	650	0.61 J	--	--	--	--	--	--	0.0014	66	--	12	--	--
MW-69-195	05/27/21	FD	610	630	0.73 J	--	--	--	--	--	--	0.0013	64	--	12	--	--
MW-69-195	08/26/21	N	480	460	1.2 J	--	--	--	--	--	--	0.0022	62	--	11	--	--
MW-69-195	12/08/21	N	410	390	0.86	--	--	--	--	--	--	0.0021 J	54	--	11	--	--
MW-70-105	11/30/20	N	150	150	4.3	--	0.95 J	72 J	--	<0.02	11 J	0.048	84	--	3.2	500 J	--
MW-70-105	02/15/21	N	140	150	--	--	--	--	--	--	--	--	79	--	3.3	--	--
MW-70-105	05/17/21	N	150	140	2.7	--	--	--	--	--	--	0.035	86	--	3.3	--	--
MW-70-105	12/09/21	N	210	220	3 J	--	--	--	--	--	--	0.0028	62	--	4.5	--	--
MW-70BR-225	11/30/20	N	1,300	1,300	1.7	--	1.8 J	600 J	--	<0.02	32 J	0.0071	19	--	2.2	2,000 J	--
MW-70BR-225	05/17/21	N	1,200	1,200	<0.1	--	--	--	--	--	--	0.014	21	--	2.3	--	--
MW-70BR-225	12/09/21	N	1,400	1,400	<0.1 J	--	--	--	--	--	--	0.014	19	--	2.2	--	--
MW-70BR-287	07/24/20	N	<1	9.3	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-70BR-287	07/24/20	N	3.2	21	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-70BR-287	07/24/20	N	11	76	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-70BR-287	08/21/20	N	350	330	<0.1	88	1.7	530	0.82	0.071	2.5	0.0039	59	43	1.2	3,300	3.3
MW-70BR-287	08/21/20	N	370	330	<0.1	83	1.8	520	0.54	<0.02	4.6	0.021	55	43	1.3	3,200	3
MW-70BR-287	08/21/20	N	330 J	310	<0.1	88	1.6	580	0.31	0.04	12	0.088	47	43	1.5	3,000	2.3
MW-70BR-287	09/28/20	N	290	290	2.3 J	94	2.6 J	470 J	1.40 J	0.2 J	0.73 J	0.0069	55	43	1.4	3,000	4
MW-70BR-287	11/18/20	N	240	200 J	<0.1	120	2.4	330 J	4.20	<0.02	7.9	0.015	54	47	1.2	3,200	1.4
MW-70BR-287	11/18/20	N	270	240 J	<0.1	80	2.5	330 J	0.46	<0.02	2.2	0.0021	53	48	1.1	3,300	2.1
MW-70BR-287	11/18/20	N	270	240 J	<0.1	86	2.5	350 J	0.3	<0.02	1.8	0.0031	52	48	1.1	3,300	2.2
MW-70BR-287	12/02/20	N	120	110	2.1	140	2.4 J	340 J	2	<0.02	11 J	0.047	56	43 J	1.1	2,700	<1
MW-70BR-287	01/25/21	N	100	100	<0.1 J	100	1.9	360 J	0.41	0.05 J	6.5	0.0047	50	47 J	1.6	2,600 J	1.4
MW-70BR-287	02/15/21	N	160	150	<0.1 J	93	1.7	310	0.12 J	0.03	3.5	0.0015 J	52 J	49 J	1.3	2,700	1.6
MW-70BR-287	02/15/21	FD	160	150	<0.1 J	85	1.6	350	0.15 J	0.082	3.8	0.0014 J	48 J	50 J	1.4	2,900	1.8
MW-70BR-287	05/17/21	N	220	200	<0.1	80	1.9	530	0.08	<0.02	0.56	0.0024	52	42 J	1.1	4,000 J	2.5
MW-70BR-287	08/19/21	N	280	310	<0.1	63 J	1.7	470 J	0.074 J	<0.02	2 J	0.0011	52	38	1	3,800 J	1.7
MW-70BR-287	12/09/21	N	350	340	<0.1 J	--	--	--	--	--	--	<0.0005	--	--	--	--	--
MW-71-035	05/01/20	N	<1	<1	2.2	--	--	--	--	--	--	0.066	15	--	<0.5	--	--
MW-71-035	12/15/20	N	<1	<1	1.3	--	3	790 J	--	<0.1	81	0.28	16	--	<0.5	3,000	--
MW-71-035	05/26/21	N	<1	<1	<0.1 J	--	--	--	--	--	--	0.2	15	--	<0.5	--	--
MW-71-035	12/16/21	N	<1	<1	<0.1	42	--	--	--	0.031 J	--	0.071	15	--	<0.5	--	--
MW-72-080	02/20/20	N	96	85	12	--	--	--	--	--	--	0.015	75	--	<2.5	--	--
MW-72-080	04/28/20	N	100	95	6.5	--	--	--	--	--	--	0.089	74	--	1.3	--	--
MW-72-080	09/29/20	N	79	75	6.8	--	--	--	--	--	--	0.086	81	--	1.4	--	--
MW-72-080	12/03/20	N	86	78	12 J	--	4.4	300	--	0.45 J	9.9 J	0.044	76	--	1.6	3,200 J	--
MW-72-080	02/18/21	N	70	72 J	11	--	--	--	--	--	--	0.12	82	--	1.8	--	--
MW-72-080	05/27/21	N	66	62	<0.1 J	--	--	--	--	--	--	0.05	81	--	1.3	--	--
MW-72-080	08/27/21	N	61	58	2.9 J	--	--	--	--	--	--	0.055	77	--	1.4	--	--
MW-72-080	12/09/21	N	71	66	4.4 J	--	--	--	--	--	--	0.031	72	--	1.5	--	--
MW-72BR-200	02/20/20	N	1.2	2.9	12	--	--	--	--	--	--	0.1	71	--	<0.5	--	--
MW-72BR-200	04/28/20	N	<1	2.1	6.5	--	--	--	--	--	--	0.2	73	--	<0.5	--	--
MW-72BR-200	09/29/20	N	<1	1.7	13	--	--	--	--	--	--	0.15	83	--	<0.5	--	--
MW-72BR-200	12/03/20	N	<1	<1	14 J	--	5	270	--	<0.1 J	4.3 J	0.12	77	--	<0.5	2,600 J	--
MW-72BR-200	02/18/21	N	<1	<1 J	14	--	--	--	--	--	--	0.12	79	--	<0.5	--	--
MW-72BR-200	05/27/21	N	<1	<1	1.3 J	--	--	--	--	--	--	0.13	75	--	<0.5	--	--
MW-72BR-200	05/27/21	FD	<1	<1	3.8 J	--	--	--	--	--	--	0.13	77	--	<0.5	--	--
MW-72BR-200	08/27/21	N	<1	3	5.7 J	--	--	--	--	--	--	0.1	80	--	<0.5	--	--
MW-72BR-200	12/09/21	N	<1	1.5	7.6 J	--	--	--	--	--	--	0.051	--	--	--	--	--
MW-73-080	02/20/20	N	21	19	<0.1	--	--	--	--	--	--	0.0094	33	--	3.7	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-69-195	09/29/20	N	--	--	--	--	--	--	20	--	--	--
MW-69-195	12/03/20	N	190	--	410	--	--	--	5.5	430	1,500	--
MW-69-195	02/15/21	N	--	--	--	--	--	--	4.7	--	--	--
MW-69-195	02/15/21	FD	--	--	--	--	--	--	4.9	--	--	--
MW-69-195	05/27/21	N	--	--	--	--	--	--	16	--	--	--
MW-69-195	05/27/21	FD	--	--	--	--	--	--	18	--	--	--
MW-69-195	08/26/21	N	--	--	--	--	--	--	17	--	--	--
MW-69-195	12/08/21	N	--	--	--	--	--	--	16	--	--	--
MW-70-105	11/30/20	N	98	--	840	--	--	--	2.9	240	1,900	--
MW-70-105	02/15/21	N	--	--	--	--	--	--	2.5	--	--	--
MW-70-105	05/17/21	N	--	--	--	--	--	--	3.3	--	--	--
MW-70-105	12/09/21	N	--	--	--	--	--	--	5.1	--	--	--
MW-70BR-225	11/30/20	N	47	--	3,900	--	--	--	3.2	720	8,300	--
MW-70BR-225	05/17/21	N	--	--	--	--	--	--	3.2	--	--	--
MW-70BR-225	12/09/21	N	--	--	--	--	--	--	3.4	--	--	--
MW-70BR-287	07/24/20	N	--	--	--	--	--	--	--	--	--	--
MW-70BR-287	07/24/20	N	--	--	--	--	--	--	--	--	--	--
MW-70BR-287	07/24/20	N	--	--	--	--	--	--	--	--	--	--
MW-70BR-287	08/21/20	N	50	<0.2	5,100	4.6	--	--	2	810	12,000	<1
MW-70BR-287	08/21/20	N	60	<0.2	5,100	4.3	--	--	1.9	820	12,000	<1
MW-70BR-287	08/21/20	N	43	<0.2	5,100	4	--	--	2.1	810	12,000	<1
MW-70BR-287	09/28/20	N	100	<0.2	5,100	10	--	--	1.8	790	11,000	<1 J
MW-70BR-287	11/18/20	N	74	<0.2	5,300	4.6	--	--	1.7	840	10,000	<1 J
MW-70BR-287	11/18/20	N	52	<0.2	5,200	3.9	--	--	1.4	820	11,000	<1 J
MW-70BR-287	11/18/20	N	65	<0.2	5,100	3.9	--	--	1.4	810	11,000	<1 J
MW-70BR-287	12/02/20	N	26	0.21	5,100	4.4	--	--	1.5	840	9,500	<1
MW-70BR-287	01/25/21	N	28	0.22	5,000	3.9	--	--	0.17	810	10,000	<1
MW-70BR-287	02/15/21	N	30	<0.22	5,000	4.3	--	--	0.59 J	800	10,000	<1 J
MW-70BR-287	02/15/21	FD	32	<0.22	5,000	4.4	--	--	1.5 J	810	11,000	<1 J
MW-70BR-287	05/17/21	N	71	<0.2	5,200	4.5	--	--	0.99	800	11,000	<1
MW-70BR-287	08/19/21	N	34	0.28	5,100	3.7	--	--	1.3	800	11,000	<1
MW-70BR-287	12/09/21	N	--	--	--	--	--	--	--	--	--	--
MW-71-035	05/01/20	N	--	--	--	--	--	--	0.19	--	--	--
MW-71-035	12/15/20	N	190	--	5,300	--	--	--	0.092	1,200	12,000	--
MW-71-035	05/26/21	N	--	--	--	--	--	--	<0.05	--	--	--
MW-71-035	12/16/21	N	--	<0.2	--	--	--	<5	<0.1	1,200	--	<1
MW-72-080	02/20/20	N	--	--	--	--	--	--	0.63	--	--	--
MW-72-080	04/28/20	N	--	--	--	--	--	--	1	--	--	--
MW-72-080	09/29/20	N	--	--	--	--	--	--	0.59	--	--	--
MW-72-080	12/03/20	N	46	--	5,000	--	--	--	1.3	690	10,000	--
MW-72-080	02/18/21	N	--	--	--	--	--	--	1	--	--	--
MW-72-080	05/27/21	N	--	--	--	--	--	--	0.85	--	--	--
MW-72-080	08/27/21	N	--	--	--	--	--	--	1.2	--	--	--
MW-72-080	12/09/21	N	--	--	--	--	--	--	1.2	--	--	--
MW-72BR-200	02/20/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-72BR-200	04/28/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-72BR-200	09/29/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-72BR-200	12/03/20	N	25	--	5,000	--	--	--	<0.1	700	9,400	--
MW-72BR-200	02/18/21	N	--	--	--	--	--	--	<0.05	--	--	--
MW-72BR-200	05/27/21	N	--	--	--	--	--	--	<0.05	--	--	--
MW-72BR-200	05/27/21	FD	--	--	--	--	--	--	<0.05	--	--	--
MW-72BR-200	08/27/21	N	--	--	--	--	--	--	<0.1	--	--	--
MW-72BR-200	12/09/21	N	--	--	--	--	--	--	--	--	--	--
MW-73-080	02/20/20	N	--	--	--	--	--	--	2.9	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-73-080	04/28/20	N	26	24	<0.1	--	--	--	--	--	--	0.0045	36	--	4.2	--	--
MW-73-080	09/30/20	N	18	21	0.29	--	--	--	--	--	--	0.0083	47	--	4.6 J	--	--
MW-73-080	12/03/20	N	11	11	<0.1 J	--	1.2	290	--	0.025 J	33 J	0.0057	36	--	4.1	1,100 J	--
MW-73-080	02/18/21	N	11	12 J	2	--	--	--	--	--	--	0.0068	37	--	4.3	--	--
MW-73-080	05/27/21	N	24	23	<0.1 J	--	--	--	--	--	--	0.0091	35	--	3.8	--	--
MW-73-080	05/27/21	FD	25	23	<0.1 J	--	--	--	--	--	--	0.01	35	--	3.8	--	--
MW-73-080	08/27/21	N	19	22	<0.1 J	--	--	--	--	--	--	0.0028	35	--	4.5	--	--
MW-73-080	12/09/21	N	9.7	11	<0.1 J	--	--	--	--	--	--	0.018	35	--	3.8	--	--
MW-74-240	04/30/20	N	<0.2	1.5	11	--	--	--	--	--	--	0.017	20	--	<0.5	--	--
MW-74-240	12/03/20	N	<0.2	<1	9.9 J	--	0.29	4.2	--	0.12 J	0.56 J	0.0043	26	--	<0.5	170 J	--
MW-74-240	06/07/21	N	<0.2	<1	6.6 J	--	--	--	--	--	--	0.0055 J	44	--	<0.5	--	--
MW-74-240	06/07/21	FD	<0.2	<1	6.8 J	--	--	--	--	--	--	0.0055 J	43	--	<0.5	--	--
MW-74-240	12/08/21	N	<0.2	<1	6.5	--	--	--	--	--	--	0.0074 J	46	--	<0.5	--	--
MW-75-033	01/30/20	N	27	30	2.9	61	0.81	120	3.10	0.6	25	0.19	16	8.5	1.8	670	4.5
MW-75-033	02/17/20	N	35	34	2.6	57 J	0.51	110	0.34 J	0.035	18	0.12	16	8.5	2	620	3.6
MW-75-033	03/16/20	N	31	31	2.1	53 J	0.52	100	0.17 J	0.14 J	19	0.035	13	7.7	1.9	560	3.3
MW-75-033	04/20/20	N	94	88	1.7	97	0.59	190	5.30	0.12 J	38	0.02	11	10	5.4	730	2.8
MW-75-033	05/18/20	N	54	51	1.1	86	0.56	190	0.57	0.05 J	39 J	0.002	11	11 J	7	810	2.8
MW-75-033	05/18/20	FD	54	50	1.1	83	0.55	190	0.56	0.044 J	40 J	0.0018	11	11 J	6.8	840	2.8
MW-75-033	06/15/20	N	19	20	0.85 J	87	0.65	200	1.40	0.049	42	0.0034	10	12 J	2.6	840	2.9
MW-75-033	07/21/20	N	22	24	0.85 J	91	0.6	170	0.61	<0.02 J	36	0.023	9.5	10 J	2.8	810	2.9
MW-75-033	08/17/20	N	30	29	0.78	80	1.4	230	4.90 J	3.80 J	40 J	0.018	9.8	10	2.6	780	3.2
MW-75-033	09/28/20	N	23	25	1.1 J	83	0.58 J	120 J	0.65 J	0.12 J	33 J	0.022	9.8	6.9	2.4	630	3.3
MW-75-033	10/19/20	N	28	64	7.3 J	170	0.59	150	5.70 J	4.10 J	31 J	0.9 J	8.1	11 J	2.3	760	24
MW-75-033	12/01/20	N	39	38	2.2	57	0.73 J	110 J	1.40	0.023 J	28 J	0.018	11	7.5 J	2.2	490	3.1
MW-75-033	12/01/20	FD	38	38	2.1	58	1 J	110 J	1.50	0.03 J	28 J	0.02	11	7.4 J	2.2	490	3.2
MW-75-033	02/16/21	N	34	35	0.88 J	51	0.6	90 J	0.24 J	0.031	20 J	0.018	12 J	6.9 J	1.9	510 J	3.7
MW-75-033	05/17/21	N	33	32	0.7	89	0.59	200	0.39	<0.02	38	0.017	9.4	9.2 J	1.8	560 J	3.1
MW-75-033	08/17/21	N	29	28	<0.1	64	0.57	160	0.22 J	<0.02	31 J	0.011	8.1	9.3 J	1.9	730 J	2.8
MW-75-033	11/29/21	N	42	39	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-75-117	01/30/20	N	5.1	5.4	<0.5	73	1	340	0.078	0.02	87	0.38	31	19	<2.5	3,000	1.1
MW-75-117	02/17/20	N	4.8	4.8	1.2	77 J	0.9	300	0.4 J	0.036	67	0.39	31	19	1.2	2,900	1.7
MW-75-117	03/16/20	N	5.3	4.7	<0.1	67 J	0.81	240	0.092 J	0.088 J	61	0.36	32	18	1.2	2,400	1.1
MW-75-117	03/16/20	FD	5.3	5.1	<0.1	67 J	0.8	240	0.059 J	0.042 J	60	0.38	34	18	1.2	2,300	1.2
MW-75-117	04/20/20	N	8	7.7	<0.1	67	0.8	200	0.29	0.081 J	49	0.36	36	18	1.5	2,400	1.4
MW-75-117	05/18/20	N	5.4	7.4	<0.1	66	0.8	190	0.58	0.15 J	47 J	0.3	38	18 J	1.4	2,600	1.6
MW-75-117	06/15/20	N	4.9	5.8	<0.1 J	62	0.85	180	0.48	0.12	43	0.26	39	17 J	1.4	2,300	1.6
MW-75-117	07/20/20	N	8.4	8.6	<0.1 J	69	0.82	160	0.17	<0.02	42 J	0.3 J	41	15 J	1.3	2,700	1.4
MW-75-117	08/17/20	N	1.6	3	<0.1	70	1.5	220	0.46 J	<0.02 J	54 J	0.34	40	18	1.5	2,400	1.6
MW-75-117	09/28/20	N	2.1	2.8	<0.1 J	83	0.93 J	230 J	0.28 J	<0.02 J	50 J	0.33	39	14	2	1,900	1.5
MW-75-117	10/20/20	N	5.6	5.5	1.3 J	73	1	210	0.7 J	<0.02	58 J	0.29	33	31 J	1.3	2,100	1.4
MW-75-117	12/01/20	N	7.8	8.2	1.1	68	1.1 J	180 J	0.37	<0.02	75 J	0.19	33	20 J	1.4	2,200	1.1
MW-75-117	02/16/21	N	6.5	6.7	<0.1 J	61	0.77	170 J	0.15 J	0.022	62 J	0.087	35 J	27 J	1.3	2,100 J	1.6
MW-75-117	05/17/21	N	13	13	<0.1	60	0.83	190	0.098	<0.02	42	0.059	42	14 J	1.2	2,100 J	1.9
MW-75-117	08/17/21	N	7.4	7	<0.1	64	0.88	240	0.033 J	<0.02	55 J	0.15	33	24 J	1.4	2,800 J	1.8
MW-75-117	11/29/21	N	10	10	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-75-202	01/30/20	N	<1	<5	<0.5	93	1.5	480	<0.1	0.025	60	1.90	58	23	<2.5	4,300	<5
MW-75-202	02/17/20	N	<1	<1	2.7	98 J	1.1	430	<0.1	0.046	49	2	61	22	<0.5	4,100	<1
MW-75-202	03/17/20	N	<1	<1	3.1	82 J	1.1	470	0.34 J	0.21 J	51	2.10	59	25	<0.5	3,800	<1
MW-75-202	04/21/20	N	<1	<1	4.2	98	1.1	440	0.17	0.2	41	2.60	62	23	<0.5	3,900	<1
MW-75-202	05/18/20	N	<1	2.2	3.7	93	1	400	0.16	0.19 J	52 J	2.70	61	25 J	<0.5	3,800	<1
MW-75-202	06/16/20	N	<1	<1	<0.1 J	100	1.1	380	0.21 J	0.21	62	2.50	67	25 J	<0.5	4,300	<1
MW-75-202	07/20/20	N	<1	1.1	2.5 J	81	1	380	0.077	0.036	51 J	2.20 J	59	21 J	<0.5	4,500	<1
MW-75-202	08/17/20	N	<1	<1	2.5	77	1.2	68	<0.02 J	<0.02 J	11 J	2	59	23	0.59	3,800	<1

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-73-080	04/28/20	N	--	--	--	--	--	--	3.9	--	--	--
MW-73-080	09/30/20	N	--	--	--	--	--	--	4.5	--	--	--
MW-73-080	12/03/20	N	100	--	2,900	--	--	--	3.2	400	5,800	--
MW-73-080	02/18/21	N	--	--	--	--	--	--	3.4	--	--	--
MW-73-080	05/27/21	N	--	--	--	--	--	--	3	--	--	--
MW-73-080	05/27/21	FD	--	--	--	--	--	--	3.5	--	--	--
MW-73-080	08/27/21	N	--	--	--	--	--	--	3.5	--	--	--
MW-73-080	12/09/21	N	--	--	--	--	--	--	3.5	--	--	--
MW-74-240	04/30/20	N	--	--	--	--	--	--	<0.05	--	--	--
MW-74-240	12/03/20	N	200	--	88	--	--	--	<0.1	61	480	--
MW-74-240	06/07/21	N	--	--	--	--	--	--	0.064	--	--	--
MW-74-240	06/07/21	FD	--	--	--	--	--	--	0.085	--	--	--
MW-74-240	12/08/21	N	--	--	--	--	--	--	0.27	--	--	--
MW-75-033	01/30/20	N	100	0.14	920	3.3	--	--	2	220	1,900	<1
MW-75-033	02/17/20	N	100	0.09 J	850	3.4	--	--	2.4	210	1,900	<10
MW-75-033	03/16/20	N	100	0.12	900	3.1	--	--	2.4 J	210	2,000	<1 J
MW-75-033	04/20/20	N	100	<0.1	1,300	2.4	--	--	2.4	290	3,200	<1
MW-75-033	05/18/20	N	100	<0.2	1,400	2.4	--	--	2.9	300	3,100	<1 J
MW-75-033	05/18/20	FD	99	<0.2	1,300	2.5	--	--	2.9	290	3,100	<1 J
MW-75-033	06/15/20	N	88	<0.2	1,500	2.3	--	--	1.7 J	260	3,300	<1
MW-75-033	07/21/20	N	81	<0.2	1,400	2.6	--	--	2.1 J	260	3,100	<1
MW-75-033	08/17/20	N	82	<0.2	1,300	2.7	--	--	1.1	250	2,900	<1 J
MW-75-033	09/28/20	N	83	<0.2	1,400	2.8	--	--	2.1	250	3,100	<1 J
MW-75-033	10/19/20	N	78	<0.2	1,100	2.2	--	--	2.1	220	2,600	<1 J
MW-75-033	12/01/20	N	91	<0.2	1,100	3.1	--	--	2.5	230	2,300	<1
MW-75-033	12/01/20	FD	91	<0.2	1,100	3.1	--	--	2.7	230	2,300	<1
MW-75-033	02/16/21	N	93	<0.2	1,000	3.1	--	--	2	220	2,100	<10
MW-75-033	05/17/21	N	81	<0.2	1,400	2.7	--	--	2.2	250	3,000	<1
MW-75-033	08/17/21	N	83	<0.2	1,300	2.5	--	--	2.2	240	3,000	<1
MW-75-033	11/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-75-117	01/30/20	N	73	0.09 J	4,200	3.2	--	--	2.1	640	8,500	<1
MW-75-117	02/17/20	N	76	0.11	4,000	3.3	--	--	2.2	610	8,400	<1
MW-75-117	03/16/20	N	74	0.11	3,700	3.3	--	--	1.8 J	570	8,200	<1 J
MW-75-117	03/16/20	FD	75	<0.1	3,800	3.4	--	--	1.8 J	580	8,300	<1 J
MW-75-117	04/20/20	N	75	<0.1	3,500	3.1	--	--	2.3	580	7,500	<1
MW-75-117	05/18/20	N	72	<0.2	3,400	3.5	--	--	2.6	580	7,200	<1 J
MW-75-117	06/15/20	N	73	--	3,300	3.5	--	--	2.5 J	550	7,300	<20
MW-75-117	07/20/20	N	70	<0.2	3,400	3.2	--	--	2.5	540	7,400	<1 J
MW-75-117	08/17/20	N	70	<0.2	3,600	3.4	--	--	2.4	520	7,800	<10 J
MW-75-117	09/28/20	N	72	<0.2	3,700	3.8	--	--	2.8	530	7,800	<1 J
MW-75-117	10/20/20	N	72	<0.2	3,800 J	3.3	--	--	2.2	550	7,800	<1
MW-75-117	12/01/20	N	75	<0.2	3,800	3.5	--	--	2.5	610	8,400	<1
MW-75-117	02/16/21	N	73	<0.22	3,800	3.6	--	--	1.8	570	7,600	<1
MW-75-117	05/17/21	N	74	<0.2	3,200	3.6	--	--	2.6	530	7,000	<1
MW-75-117	08/17/21	N	73	<0.2	3,700	3.1	--	--	2.3	540	7,500	<1
MW-75-117	11/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-75-202	01/30/20	N	50	0.15	5,800	3.2	--	--	0.82	1,200	12,000	<1
MW-75-202	02/17/20	N	52	0.09 J	5,500	3.7	--	--	0.62	1,100	12,000	<1
MW-75-202	03/17/20	N	57	0.07 J	5,700	2.9	--	--	0.44 J	1,100	13,000	<1 J
MW-75-202	04/21/20	N	61	0.06 J	5,800	2.9	--	--	<0.05	1,200	13,000	<1
MW-75-202	05/18/20	N	61	0.24	5,800	2.8	--	--	0.25	1,100	12,000	<1 J
MW-75-202	06/16/20	N	67	--	5,400	3.6	--	--	0.14	960	11,000	<50
MW-75-202	07/20/20	N	57	<0.2	5,600	2.9	--	--	0.72	1,100	12,000	<20 J
MW-75-202	08/17/20	N	58	0.29	6,000	3.2	--	--	0.56	1,100	12,000	<1 J

Appendix B
January 2020 to December 2021 Analytical Results
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Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-75-202	09/28/20	N	<1	<1	1.8 J	76	1 J	440 J	<0.1 J	<0.1 J	59 J	1.80	54	21	<0.5	3,200	<1
MW-75-202	10/19/20	N	<1	<1	1.8 J	72	1.2	400	<0.02	<0.02	56 J	1.50 J	48	56 J	<0.5	4,700	<1
MW-75-202	12/01/20	N	<1	<1	1.8	71	1.2 J	340 J	0.33	<0.02	70 J	1.50	47	29 J	<0.5	3,200	<1
MW-75-202	02/16/21	N	<1	<1	<0.1 J	66	0.98	320 J	0.059 J	0.022	44 J	0.98	62 J	37 J	<0.5	3,300 J	1.2
MW-75-202	05/17/21	N	<1	<1	<0.1	64	1.1	550	0.038	0.043	49	1.50	52	20 J	<0.5	4,300 J	<1
MW-75-202	08/17/21	N	<1	<1	<0.1	61	0.97	750	0.032 J	0.022	54 J	1.50	45	30 J	<0.5	3,800 J	1.4
MW-75-202	08/17/21	FD	<1	<1	<0.1	59	0.98	620	0.032 J	0.025	54 J	1.50	44	27 J	<0.5	3,900 J	1.2
MW-75-202	11/29/21	N	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-75-202	11/29/21	FD	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-75-267	01/30/20	N	<1	<5	<0.5	79	2.5	350	<0.1	<0.1	17	0.93	120	61	<2.5	6,100	<5
MW-75-267	01/30/20	FD	<1	<5	<0.5	81	2.6	380	0.11	<0.1	18	0.95	120	66	3.1	6,300	<5
MW-75-267	02/18/20	N	<1	<1	<0.5	82 J	1.8	330	0.19 J	0.11	13	0.9	130	62	<2.5	6,400	<1
MW-75-267	03/17/20	N	<1	<1	2.4	79 J	2.3	350	0.95 J	0.26 J	14	1.10	120	73	<0.5	5,700	<1
MW-75-267	04/21/20	N	<1	<1	3.8	82	1.8	360	0.25	0.23	14	1.40	98	60	<2.5	6,700	<1
MW-75-267	05/18/20	N	<1	<1	3.7	94	2.2	380	0.47	0.36 J	19 J	1.80	90	67 J	<2.5	7,500	<1
MW-75-267	06/16/20	N	<1	<1	<0.1 J	93	2	360	0.59 J	0.45	19	2.20	71	63 J	<0.5	6,500	<1
MW-75-267	06/16/20	FD	<1	<1	<0.1 J	92	2.2	390	0.57 J	0.49	21	2.10	71	69 J	<0.5	6,800	<1
MW-75-267	07/21/20	N	<1	<1	4.7 J	93	1.9	340	0.48	0.47 J	17	2.30	74	57 J	<0.5	6,600	<1
MW-75-267	08/17/20	N	<1	<1	4	72	2.9	370	0.49 J	0.38 J	27 J	1.80	83	580	0.65	5,200	<1
MW-75-267	09/28/20	N	<1	<1	3.9 J	71	2.7 J	310 J	0.4 J	<0.1 J	21 J	1.40	90	69	<0.5	5,500	<1
MW-75-267	10/19/20	N	<1	<1	3.2 J	71	2.4	290	0.37 J	0.25 J	15 J	1.20 J	90	97 J	<0.5	6,700	<1
MW-75-267	12/01/20	N	<1	<1	2.3	67	3 J	270 J	0.28	0.22 J	18 J	1.10	110	86 J	<0.5	4,900	<1
MW-75-267	02/16/21	N	<1	<1	<0.1 J	62	3.4	240 J	0.14 J	0.065	11 J	0.78	130 J	79 J	<0.5	6,500 J	<1
MW-75-267	05/17/21	N	<1	<1	<0.1	68	2.1	400	0.27	0.19	13	1.40	100	53 J	<0.5	6,600 J	<1
MW-75-267	05/17/21	FD	<1	<1	<0.1	68	2	400	0.19	0.18	13	1.40	100	53 J	<0.5	6,000 J	<1
MW-75-267	08/17/21	N	<1	<1	<0.1	59	1.7	350	0.54 J	0.25	15 J	1.50	67	54 J	<0.5	4,200 J	<1
MW-75-267	11/29/21	N	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-75-337	01/30/20	N	<1	<5	<0.5	65	0.63	260	1	0.5	14	0.87	190	72	3.2	8,300	<5
MW-75-337	02/17/20	N	<1	1.1	<0.5	67 J	2.1	210	0.5 J	0.42	9.2	0.87	190	62	<2.5	7,500	<1
MW-75-337	03/16/20	N	<1	<1	4.6	65 J	2.6	250	6 J	0.58 J	8	0.95	200	74	<0.5	6,800	<1
MW-75-337	04/20/20	N	<1	<1	<0.5	64	2.2	250	1.50 J	0.57 J	6	0.83	200	68	<2.5	7,100	<1
MW-75-337	04/20/20	FD	<1	<1	<0.5	63	2.3	260	1.10 J	0.53 J	6.1	0.82	210	68	<2.5	7,200	<1
MW-75-337	05/18/20	N	<1	<1	<0.5	65	2.5	240	0.79	0.51 J	6.5 J	0.8	210	72 J	<2.5	8,000	<1
MW-75-337	06/15/20	N	<1	<1	<0.1 J	59	3.1	230	0.77	0.44	8	0.69	230	68 J	<0.5	8,600	<1
MW-75-337	07/21/20	N	<1	<1	4.4 J	62	2.2	210	0.35	0.28 J	5	0.61	220	66 J	<0.5	9,400	<1
MW-75-337	07/21/20	FD	<1	<1	4.3 J	62	2.9	230	0.74	0.35 J	7.1	0.62	230	70 J	<0.5	10,000	<1
MW-75-337	08/17/20	N	<1	1.1	4.7	60	3.9	220	0.6 J	0.48 J	8 J	0.59	230	65	1.2	7,700	<1
MW-75-337	08/17/20	FD	<1	1.1	4.5	58	3.4	240	1.10 J	0.49 J	9.1 J	0.59	220	66	1.2	7,300	<1
MW-75-337	09/28/20	N	<1	<1	4.7 J	58	4.9 J	220 J	0.58 J	0.28 J	8.7 J	0.59	230	85	0.53	7,800	<1
MW-75-337	10/20/20	N	<1	<1	4.6 J	66	2.3	140	1.60 J	0.84 J	5 J	0.58	200	100 J	<0.5	8,200	<1
MW-75-337	12/01/20	N	<1	<1	5	54	3.7 J	180 J	0.77	0.4 J	8.1 J	0.6	220	98 J	<0.5	6,000	<1
MW-75-337	02/16/21	N	<1	<1	6 J	57	4	160 J	1.10 J	0.35	5.8 J	0.66	230 J	66 J	<0.5	8,500 J	<1
MW-75-337	05/17/21	N	<1	<1	3.9	55	2.5	260	0.42	0.26	4.4	0.46	240	58 J	0.6	8,600 J	<1
MW-75-337	08/17/21	N	<1	1.4	<0.1	51	2.1	240	0.45 J	0.26	4.4 J	0.47	230	69 J	0.52 J	8,000 J	<1
MW-75-337	11/29/21	N	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-76-039	01/29/20	N	44	43	0.38	69	0.66	160	0.63 J	0.05	26 J	0.003	15	8.3	1.7	550	1.7
MW-76-039	01/29/20	FD	44	45	0.21	71	0.65	170	0.95 J	0.053	26 J	0.003	16	8.8	1.9	570	1.7
MW-76-039	02/20/20	N	18	28 J	0.6 J	78	0.57	180	0.46 J	2 J	23	0.15 J	16	9.9	1.6	550	4.2 J
MW-76-039	02/20/20	FD	16	15 J	0.2 J	65	0.55	160	0.26 J	0.17 J	20	0.076 J	17	8	1.6	480	1.9 J
MW-76-039	03/17/20	N	120	110	0.31	57 J	0.45	130	0.1 J	0.086 J	19	0.0022	19	8	2.5	480	2.4
MW-76-039	04/21/20	N	35	34	<0.1	72	0.48	170	0.25	0.11	23	0.0048	14	9.3	1.7	540	2.3
MW-76-039	05/26/20	N	26	24	<0.1 J	75	0.44	170	0.78 J	0.042 J	23 J	0.013	12 J	10 J	1.4	510	2
MW-76-039	06/16/20	N	<1	<1	<0.1 J	79	1.2	340	0.21 J	0.073	37	0.16	32	26 J	0.98	4,000	2.4
MW-76-039	07/21/20	N	26	29	<0.1 J	94	0.56	180	0.071	<0.02 J	26	0.0036	17	10 J	1.7	640	2

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Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-75-202	09/28/20	N	58	0.2	5,600	4	--	--	1.1	1,100	12,000	<1 J
MW-75-202	10/19/20	N	56	<0.2	5,700	3.7	--	--	0.98	1,100	13,000	<1 J
MW-75-202	12/01/20	N	62	<0.2	5,600	3.5	--	--	1.1	1,100	12,000	<1
MW-75-202	02/16/21	N	51	<0.22	5,700	3.7	--	--	0.64	1,100	12,000	<1
MW-75-202	05/17/21	N	62	<0.2	5,500	3.6	--	--	0.81	1,100	12,000	<1
MW-75-202	08/17/21	N	65	<0.2	5,600	3.1	--	--	0.9	1,000	13,000	<1
MW-75-202	08/17/21	FD	65	<0.2	5,600	3.5	--	--	0.89	1,100	12,000	<1
MW-75-202	11/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-75-202	11/29/21	FD	--	--	--	--	--	--	--	--	--	--
MW-75-267	01/30/20	N	33	0.11	8,300	4.9	--	--	0.39	1,300	15,000	<1
MW-75-267	01/30/20	FD	34	0.11	8,500	5.2	--	--	0.45	1,300	15,000	<1
MW-75-267	02/18/20	N	37	0.19	8,400	4	--	--	0.2	1,300	15,000 J	<20 J
MW-75-267	03/17/20	N	49	0.1	7,500	3.4	--	--	--	1,200	15,000	<1 J
MW-75-267	04/21/20	N	58	0.15	7,700	3.7	--	--	0.077	1,300	14,000	<1
MW-75-267	05/18/20	N	49	0.35	7,500	3.4	--	--	<0.05	1,200	15,000	<20 J
MW-75-267	06/16/20	N	55	0.22	7,500	3.3	--	--	0.073	1,200	14,000	<1
MW-75-267	06/16/20	FD	56	0.23	7,600	3.3	--	--	<0.05	1,200	14,000	<1
MW-75-267	07/21/20	N	60	0.24	7,300	3.5	--	--	0.25 J	1,200	14,000	<1
MW-75-267	08/17/20	N	54	0.39	8,300	4.4	--	--	0.074	1,400	14,000	<1 J
MW-75-267	09/28/20	N	52	0.28	7,600	4.9	--	--	<0.05	1,200	14,000	<1 J
MW-75-267	10/19/20	N	48	0.26	7,900	4.5	--	--	0.068	1,200	15,000	<50 J
MW-75-267	12/01/20	N	39	0.23	7,900	4.8	--	--	0.22	1,300	14,000	<1
MW-75-267	02/16/21	N	35	<0.22	7,900	4.2	--	--	0.14	1,200	16,000	<1
MW-75-267	05/17/21	N	43	0.26	7,700	3.9	--	--	0.18	1,200	14,000	<1
MW-75-267	05/17/21	FD	43	0.2	7,600	4.4	--	--	0.12	1,200	14,000	<1
MW-75-267	08/17/21	N	46	0.22	7,500	3.8	--	--	<0.1	1,200	14,000	<1
MW-75-267	11/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-75-337	01/30/20	N	74	0.17	10,000	7.7	--	--	0.066	1,600	19,000 J	<1
MW-75-337	02/17/20	N	66	0.14	9,700	6.9	--	--	<0.05	1,600	18,000 J	<1
MW-75-337	03/16/20	N	68	0.17	9,900	6.8	--	--	--	1,600	19,000 J	<1 J
MW-75-337	04/20/20	N	60	<0.1	10,000	4.8	--	--	<0.05	1,600	18,000	<1
MW-75-337	04/20/20	FD	60	<0.1	9,700	5	--	--	<0.05	1,700	18,000	<1
MW-75-337	05/18/20	N	53	0.35	10,000	5.3	--	--	<0.05	1,700	20,000 J	<1 J
MW-75-337	06/15/20	N	49	0.45	10,000	4.9	--	--	1.8 J	1,600	18,000 J	<1
MW-75-337	07/21/20	N	46	0.23	9,900	5.6	--	--	1.9 J	1,600	18,000 J	<1
MW-75-337	07/21/20	FD	46	0.23	9,700	5.7	--	--	0.071	1,700	18,000 J	<1
MW-75-337	08/17/20	N	50	0.23	11,000	5	--	--	<0.05	1,700	19,000	<1 J
MW-75-337	08/17/20	FD	50	0.24	9,900	6.4	--	--	<0.05	1,600	19,000	<1 J
MW-75-337	09/28/20	N	48	0.23	9,400	6.4	--	--	<0.05	1,600	18,000 J	<20 J
MW-75-337	10/20/20	N	61	2.1	9,500 J	6.5	--	--	<0.05	1,600	18,000	<1
MW-75-337	12/01/20	N	49	0.23	9,800	7	--	--	<0.1	1,700	17,000 J	<1
MW-75-337	02/16/21	N	54	<0.22	9,600	6.1	--	--	<0.05	1,600	22,000	<1
MW-75-337	05/17/21	N	44	<0.2	9,600	5.9	--	--	<0.05	1,600	18,000 J	<1
MW-75-337	08/17/21	N	44	0.2	10,000	4.4	--	--	<0.1	1,600	18,000	<1
MW-75-337	11/29/21	N	--	--	--	--	--	--	--	--	--	--
MW-76-039	01/29/20	N	85	<0.1	890	2.8	--	--	2.3	190	2,000	<1
MW-76-039	01/29/20	FD	86	<0.1	900	2.8	--	--	2.6	190	2,000	<1
MW-76-039	02/20/20	N	86	0.05 J	870	2.5	--	--	2.7 J	190	2,000	<1
MW-76-039	02/20/20	FD	91	0.05 J	870	2.6	--	--	2.6 J	190	2,000	<1
MW-76-039	03/17/20	N	94	0.11	850	3.1	--	--	2.9 J	190	1,900	<1 J
MW-76-039	04/21/20	N	79	0.11	1,000	2.5	--	--	2.4	210	2,300	<1
MW-76-039	05/26/20	N	75	<0.2	1,100	2.1	--	--	2.2	210	2,600	<1
MW-76-039	06/16/20	N	64	<0.2	5,100	2.8	--	--	0.6	780	11,000	<1
MW-76-039	07/21/20	N	90	<0.2	1,200	2.8	--	--	2 J	230	2,700	<10

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-76-039	08/18/20	N	57	55	<0.1	74	0.49	170	0.11 J	0.044 J	25 J	0.004	18	9.7	2	630	3.5
MW-76-039	09/29/20	N	72	<1	<0.1	58	0.8 J	120 J	0.24 J	<0.1 J	21 J	0.22	34	5 J	0.99	410 J	3.6
MW-76-039	10/21/20	N	86	86	1.3	65	0.59	120 J	0.41	0.15	20	0.0097	21	12	2.3	580	2.3
MW-76-039	12/02/20	N	110	110	1.1	55	0.67	110 J	<0.02	<0.02	20	0.013	21	6.9	2.4	460	2.7
MW-76-039	02/17/21	N	36	37	<0.1	61	0.39	110	0.27 J	<0.02 J	20	0.011	16	11 J	1.8	460	2.5
MW-76-039	02/17/21	FD	36	37	<0.1	54	0.39	110	0.27 J	0.033 J	20	0.011	15	9.8 J	1.8	490	2.4
MW-76-039	05/21/21	N	27	26	<0.1 J	77	0.51	240 J	0.12 J	0.063 J	28 J	0.0076	13	11 J	1.5	560 J	2.3
MW-76-039	08/18/21	N	3.2	3.3	<0.1 J	49	1.4	420 J	0.069 J	0.023 J	25 J	0.11	28	25	1	3,800 J	4.3
MW-76-039	12/02/21	N	130	140	<0.1 J	39	--	--	--	<0.02 J	--	0.01	27	--	2.8	--	--
MW-76-156	01/29/20	N	1.8	2	<0.5	68	1.5	480	<0.1	<0.1	69 J	0.22	31	27	<2.5	4,300	2.9
MW-76-156	02/20/20	N	1	2	2.3	62	1.6	440	<0.1	<0.1	44	0.22	31	25	0.83	3,200	2.9
MW-76-156	03/17/20	N	3.3	3.8	2.1	59 J	1.1	390	<0.02	<0.02	39	0.23	29	27	0.86	3,200	2.6
MW-76-156	04/21/20	N	<1	1.7	2.5	65	1.2	450	0.71	0.17	41	0.25	30	26	0.85	3,500	2.8
MW-76-156	05/26/20	N	<1	1.5	2.2 J	59	1.1	370	0.13 J	<0.02	35 J	0.26	29 J	31 J	0.81	4,300	2.7
MW-76-156	05/26/20	FD	<1	1.6	2.2 J	59	1.2	390	0.083 J	0.024 J	37 J	0.28	30 J	29 J	0.8	4,400	2.7
MW-76-156	06/16/20	N	<1	<1	<0.1 J	68	1.3	380	0.091 J	0.025	39	0.28	29	29 J	0.7	4,100	2.7
MW-76-156	07/21/20	N	1.7	2.4	<0.1 J	64	1.3	360	0.055	0.044 J	37	0.22	33	25 J	0.97	4,300	3.3
MW-76-156	08/18/20	N	1.4	1.5	2.3	57	2.6	390	<0.1	<0.1 J	45 J	0.18	33	24	1.1	3,200	3.8
MW-76-156	09/29/20	N	<1	69	0.3	69	2 J	350 J	0.24 J	<0.02 J	41 J	0.015	18	24 J	2.3	3,300 J	2.1
MW-76-156	10/21/20	N	2.5	3.6	2.3	56	1.5	310 J	0.12	0.052	39	0.14	31	45	1.1	4,600	3.8
MW-76-156	10/21/20	FD	2.9	3.5	2.4	55	1.6	320 J	0.17	0.041	41	0.14	30	42	1	4,100	3.8
MW-76-156	12/02/20	N	4.2	4.6	2.2	53	2.8 J	360 J	<0.1	<0.1	55 J	0.12	31	25 J	1.2	2,600	3.6
MW-76-156	02/17/21	N	2.9	3.3	<0.1	46	1	280	0.042 J	0.023 J	40	0.094	32	26 J	0.93	3,900	3.8
MW-76-156	05/21/21	N	<1	1.1	<0.1 J	56	1.3	490	0.11 J	0.047 J	36 J	0.16	31	32 J	0.79	4,000	3.8
MW-76-156	08/18/21	N	2.3	2.6	<0.1 J	47	1.4	410 J	<0.02 J	<0.02 J	27 J	0.11	28	25	1	4,800 J	4.6
MW-76-156	12/02/21	N	4	4.5	<0.1 J	47	--	--	--	0.058 J	--	0.092	31	--	1.1	--	--
MW-76-181	01/29/20	N	890	860	<0.5	91	1.5	570	<0.1	<0.1	96 J	0.93	33	28	<2.5	4,400	1.1
MW-76-181	02/20/20	N	1,000	970	1.6	91	1.6	580	<0.1	<0.1	79	0.86	34	29	1.6	3,900	1.4
MW-76-181	03/17/20	N	1,100	1,100	1.5	78 J	1.1	580	0.1 J	0.025 J	84	0.7	33	32	1.7	4,000	1.2
MW-76-181	04/21/20	N	720	700	1.6	100	1	550	0.48	0.08	74	0.79	35	28	<2.5	3,900	1.1
MW-76-181	05/26/20	N	1,200	1,100	1.7 J	70	0.95	540	0.31 J	<0.02	73 J	0.54	31 J	32 J	1.9	4,400	1.3
MW-76-181	06/16/20	N	710	660	<0.1 J	76	1.1	560	0.037 J	0.033	84	0.55	34	30 J	1.5	4,700	1.3
MW-76-181	07/21/20	N	1,100	1,100	<0.1 J	76	1.1	530	<0.02	<0.02	77	0.5	35	29 J	2	5,200	1.4
MW-76-181	08/18/20	N	800	760	1.7	70	2.8	570	<0.1	<0.1 J	99 J	0.5	34	29	1.8	4,300	1.7
MW-76-181	09/29/20	N	840	810	1.6	75	1.6 J	370 J	<0.1 J	<0.02 J	85 J	0.48	34	29 J	2	5,300 J	1.4
MW-76-181	10/21/20	N	1,300	1,200	1.5	73	1.4	450 J	<0.02	<0.02	83	0.39	30	63	2.1	5,800	1.5
MW-76-181	12/02/20	N	1,500	1,500	1.5	67	2.7	450 J	0.18 J	<0.1	90	0.31	29	32	2	4,500	1.3
MW-76-181	12/02/20	FD	1,500	1,600	1.4	68	1.7	580 J	0.31	<0.1	110	0.31	30	32	2	4,500	1.4
MW-76-181	02/17/21	N	1,500	1,600	<0.1	60	0.85	410	0.14 J	0.041 J	78	0.35	30	31 J	1.7	4,400	1.5
MW-76-181	05/21/21	N	1,500	1,500	<0.1 J	64	1.1	480 J	0.096 J	<0.02 J	76 J	0.2	29	34 J	2.2	4,000 J	1.8
MW-76-181	08/18/21	N	1,500	1,400	<0.1 J	65	1.3	570 J	0.097 J	<0.02 J	63 J	0.12	25	30	1.8	5,100 J	2
MW-76-181	12/02/21	N	1,500	1,500	1.5 J	67	--	--	--	0.052 J	--	0.089	27	--	1.7	--	--
MW-76-218	01/29/20	N	8.4	9.6	<0.5	95	2.5	290	<0.1	0.024	6.5 J	0.27	94	45	<2.5	5,400	1.3
MW-76-218	02/20/20	N	2.8	4.7	4.4	86	2.9	260	0.1	0.18	7.1	0.25	90	51	0.6	5,200	1.6
MW-76-218	03/17/20	N	51	45	4.2	79 J	1.9	250	0.39 J	0.049 J	8.1	0.26	81	52	<0.5	5,000	1.2
MW-76-218	04/21/20	N	2.1	4.2	4.6	87	2.1	260	0.3	0.12	6.1	0.25	87	46	<2.5	5,000	1.4
MW-76-218	05/26/20	N	<1	<1	5.1 J	84	1.8	240	0.047 J	<0.02	7.9 J	0.32	78 J	60 J	<0.5	5,500	<1
MW-76-218	06/16/20	N	4.8	5.5	<0.1 J	100	2	290	0.039 J	<0.02	14	0.36	70	56 J	0.57	3,900 J	1.4
MW-76-218	06/16/20	FD	5.5	5.6	<0.1 J	100	1.9	280	0.24 J	<0.02	14	0.36	70	53 J	0.7	5,800 J	1.3
MW-76-218	07/21/20	N	23	27	4.7 J	94	2	230	0.039	<0.02 J	8.8	0.34	87	45 J	0.57	6,200	1.1
MW-76-218	08/18/20	N	5.5	6.2	4.5	89	3.6	280	<0.1	<0.1 J	14 J	0.31	81	48	0.69	5,300	1.4
MW-76-218	09/29/20	N	17	16	4.5	77	2.8 J	230 J	<0.1 J	<0.1 J	12 J	0.27	88	51 J	0.63	4,200 J	1.4
MW-76-218	09/29/20	FD	17	16	4.5	80	2.7 J	220 J	<0.1 J	<0.1 J	11 J	0.26	87	50 J	0.58	6,000 J	1.4
MW-76-218	10/21/20	N	46	44	4.5	76	2.5	150 J	0.11	<0.1	6.6	0.25	90	82	0.71	6,700	1.8

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-76-039	08/18/20	N	91	<0.2	1,100	3.1	--	--	2.3	220	2,600	<10
MW-76-039	09/29/20	N	92	<0.2	990	3.1	--	--	2.4	210	2,400	<1 J
MW-76-039	10/21/20	N	95	<0.2	920	3.5	--	--	2.5	200	2,100	<1 J
MW-76-039	12/02/20	N	95	2.6	870	3.6	--	--	2.8	190	1,800	<10
MW-76-039	02/17/21	N	78	<0.22	950	2.8	--	--	2.8	190	2,000	<1
MW-76-039	02/17/21	FD	83	<0.22	940	2.8	--	--	2.6	190	1,900	<1
MW-76-039	05/21/21	N	79	0.29	1,200	2.8	--	--	2 J	230	2,600	<1
MW-76-039	08/18/21	N	49	<0.2	5,200	2.2	--	--	1.8	770	11,000	<20
MW-76-039	12/02/21	N	--	<0.2	--	--	--	<2.5	2.8	190	--	<1
MW-76-156	01/29/20	N	51	<0.1	5,300	2.8	--	--	1.6	840	11,000	<1
MW-76-156	02/20/20	N	47	0.09 J	5,100	3.6	--	--	1.3 J	840	11,000	<1
MW-76-156	03/17/20	N	51	0.09 J	5,200	2.8	--	--	1.6 J	820	11,000	<10 J
MW-76-156	04/21/20	N	53	0.06 J	5,500	2.6	--	--	1.3	870	12,000	<1
MW-76-156	05/26/20	N	51 J	<0.2	5,500	3.3	--	--	1.2	800	12,000	<1
MW-76-156	05/26/20	FD	34 J	<0.2	5,400	3.1	--	--	1.2	820	12,000	<1
MW-76-156	06/16/20	N	51	<0.2	5,400	2.9	--	--	1.2	770	11,000	<1
MW-76-156	07/21/20	N	50	<0.2	5,200	2.9	--	--	1.7 J	800	11,000	<1
MW-76-156	08/18/20	N	51	<0.2	5,700	3.1	--	--	1.8	780	11,000	<1
MW-76-156	09/29/20	N	55	<0.2	5,000	3	--	--	1.5	760	11,000	<1 J
MW-76-156	10/21/20	N	51	<0.2	5,200	3.4	--	--	1.7	810	12,000	<1 J
MW-76-156	10/21/20	FD	51	<0.2	5,100	3.4	--	--	1.7	800	11,000	<1 J
MW-76-156	12/02/20	N	53	<0.2	5,100	3.6	--	--	1.9	810	11,000	<1
MW-76-156	02/17/21	N	52	<0.22	5,200	3.3	--	--	2	820	11,000	<1
MW-76-156	05/21/21	N	52	<0.2	5,100	3.2	--	--	1.3 J	760	11,000	<50
MW-76-156	08/18/21	N	51	<0.2	5,100	3.1	--	--	1.8	770	11,000	<1
MW-76-156	12/02/21	N	--	<0.2	--	--	--	<5	2	780	--	<1
MW-76-181	01/29/20	N	71	<0.1	6,600	2.8	--	--	2.2	950	14,000	<1
MW-76-181	02/20/20	N	71	0.07 J	6,300	3.2	--	--	4.4 J	930	12,000	<1
MW-76-181	03/17/20	N	70	0.07 J	6,400	2.1	--	--	2.2 J	910	14,000	<1 J
MW-76-181	04/21/20	N	69	0.05 J	6,500	2.7	--	--	1.6	920	14,000	<1
MW-76-181	05/26/20	N	71	<0.2	6,500	3	--	--	2.6	940	14,000	<1
MW-76-181	06/16/20	N	67	<0.2	6,700	2.3	--	--	1.7	910	14,000	<1
MW-76-181	07/21/20	N	67	1.6	6,400	2.8	--	--	2.2	900	15,000	<1
MW-76-181	08/18/20	N	69	<0.2	6,900	2.9	--	--	2	910	14,000	<1
MW-76-181	09/29/20	N	72	<0.2	6,400	2.6	--	--	2.1	930	15,000	<1 J
MW-76-181	10/21/20	N	68	<0.2	6,400	3.3	--	--	2.3	900	13,000	<1 J
MW-76-181	12/02/20	N	70	<0.2	6,400	3.4	--	--	2.5	890	13,000	<1
MW-76-181	12/02/20	FD	69	<0.2	6,500	3.2	--	--	2.5	920	13,000	<1
MW-76-181	02/17/21	N	71	<0.22	7,000	3	--	--	2.8	940	13,000	<1
MW-76-181	05/21/21	N	70	<0.2	6,600	2.9	--	--	2.5 J	940	13,000	<1
MW-76-181	08/18/21	N	64	<0.2	6,500	2.7	--	--	2.3	870	14,000	<1
MW-76-181	12/02/21	N	--	<0.2	--	--	--	<5	2.3	870	--	<1
MW-76-218	01/29/20	N	40	<0.1	7,300	5	--	--	0.28	920	14,000	<1
MW-76-218	02/20/20	N	37	0.17	7,100	5.1	--	--	0.52 J	900	14,000	<1
MW-76-218	03/17/20	N	39	0.07 J	7,300	4.3	--	--	0.46 J	920	14,000	<1 J
MW-76-218	04/21/20	N	39	0.05 J	7,700	4.5	--	--	0.54	920	14,000	<1
MW-76-218	05/26/20	N	43	<0.2	7,300	4.9	--	--	<0.05	960	13,000	<1
MW-76-218	06/16/20	N	56	0.24	6,800	4.6	--	--	0.15	900	14,000	<1
MW-76-218	06/16/20	FD	66	0.22	6,600	3.9	--	--	0.14	870	14,000	<1
MW-76-218	07/21/20	N	46	<0.2	7,200	4	--	--	0.33 J	900	13,000	<1
MW-76-218	08/18/20	N	54	0.22	7,300	4.6	--	--	0.19	870	13,000	<1
MW-76-218	09/29/20	N	40	<0.2	7,100	4.6	--	--	0.77	900	14,000	<1 J
MW-76-218	09/29/20	FD	39	<0.2	7,100	5	--	--	0.68	910	15,000 J	<1 J
MW-76-218	10/21/20	N	39	<0.2	7,200	4.3	--	--	0.72	890	13,000 J	<1 J

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-76-218	12/02/20	N	81	71	4.2	67	3.2	300 J	<0.1	<0.1	14	0.24	86	57	0.63	6,200	1.8
MW-76-218	02/17/21	N	26	25	<0.1	61	1.8	170	0.1 J	0.03 J	6.2	0.2	93	57 J	0.65	5,900	2
MW-76-218	05/21/21	N	27	26	<0.1 J	76	1.9	380 J	0.05 J	0.044 J	13 J	0.37	61	70 J	0.89	5,100 J	1.8
MW-76-218	08/18/21	N	320	310	<0.1 J	70	2	390 J	0.023 J	<0.02 J	15 J	0.38	47	45	1.3	5,600 J	3.2
MW-76-218	08/18/21	FD	290	310	<0.1 J	73	1.9	370 J	0.034 J	<0.02 J	15 J	0.39	48	45	1.2	5,600 J	2.9
MW-76-218	12/02/21	N	270	280	3.9 J	66	--	--	--	<0.02 J	--	0.28	68	--	1	--	--
MW-77-046	01/30/20	N	1.1	3.3	1.4	39	2	130	2.10	0.43	150	0.24	93	35	4	2,300	3.2
MW-77-046	02/18/20	N	0.9	1.8	0.56	38 J	1.8	120	0.24 J	0.17	120	0.19	100	31	4.2	2,000	2.7
MW-77-046	05/26/20	N	0.48	<1	2.8 J	51	0.99	85	0.22 J	0.049 J	46 J	0.35	120 J	14 J	<0.5	1,600	8.5
MW-77-046	08/19/20	N	<0.2 J	<1	2.5	72	1.4	86 J	0.78	0.23 J	69	0.46	140	16	<0.5	1,500	7.1
MW-77-046	12/02/20	N	<1	<1	3.6	95	2.9	140 J	0.69 J	0.37	180	0.44	93	45	1.9	2,400	2.7
MW-77-046	02/17/21	N	<0.2	<1	0.8	41	1.1	58	0.49 J	0.28 J	76	0.2	130	22 J	0.58	1,200	1.7
MW-77-046	05/18/21	N	<0.2	<1	2.1 J	49	1	87	6.10 J	0.33 J	45 J	0.39	140	11 J	<0.5	1,100 J	6
MW-77-046	05/18/21	FD	<0.2	<1	2.1 J	49	0.99	87	6.70 J	0.43 J	44 J	0.38	140	11 J	<0.5	1,100 J	6.3
MW-77-046	08/18/21	N	<0.2	<1	1.7 J	58	1.3	100 J	4.80 J	0.22 J	58 J	0.44	120	17	<0.5	1,500 J	4.1
MW-77-046	12/02/21	N	<1	<1	<0.1 J	95	--	--	--	0.94 J	--	0.42	95	--	3	--	--
MW-77-102	02/18/20	N	0.57	<1	<0.1	51 J	1.4	290	0.14 J	0.032	37	0.064	4.1	17	<0.5	1,700	5
MW-77-102	05/26/20	N	0.62	1.1	<0.1 J	40	1	210	0.028 J	<0.02	29 J	0.04	3.8 J	17 J	<0.5	1,900	5
MW-77-102	08/19/20	N	0.61 J	1	<0.1	45	1.2	190 J	0.14	0.082 J	35	0.039	4.4	16	<0.5	1,600	5.8
MW-77-102	12/02/20	N	1.6	1.6	1.3	45	1.4	200 J	0.089	<0.02	42	0.017	3.9	15	<0.5	1,500	5.9
MW-77-102	02/17/21	N	0.61	1.5	<0.1	41	0.98	180	0.059 J	0.021 J	36	0.016	4.5	16 J	<0.5	1,300	5.9
MW-77-102	05/18/21	N	1.1 J	1.9	<0.1 J	40	1.1	230	0.16 J	0.033 J	29 J	0.022	4.4	14 J	<0.5	1,400 J	5.7
MW-77-102	08/18/21	N	0.55	<1	<0.1 J	39	1.2	58 J	0.029 J	<0.02 J	9 J	0.028	4.2	15	<0.5	1,600 J	5.6
MW-77-102	12/02/21	N	0.67	<1	<0.1 J	40	--	--	--	0.039 J	--	0.02	4.4	--	<0.5	--	--
MW-77-158	02/18/20	N	7.3	7	3.2	54 J	1.3	500	<0.1	<0.1	48	0.087	34	41	<2.5	4,700	3.4
MW-77-158	05/26/20	N	8.1	7	2.7 J	44	1.1	470	0.025 J	<0.02	45 J	0.076	29 J	50 J	0.51	6,200	2.7
MW-77-158	08/19/20	N	8.3	8.1	3	48	<0.5	100 J	<0.1	<0.1	12	0.08	31	40	0.56	4,400	3.1
MW-77-158	12/02/20	N	10	10	2.8	45	2.3	540 J	<0.1	<0.1	72	0.04	33	47	0.6	4,800	3
MW-77-158	02/17/21	N	7.7	7.9	<0.1	43	1	340	0.066 J	0.04 J	49	0.036	32	45 J	<0.5	4,400	3.1
MW-77-158	05/18/21	N	10 J	9.8	<0.1 J	44	1.2	640	0.11 J	0.044 J	47 J	0.029	28	40 J	0.62	4,100 J	2.8
MW-77-158	08/18/21	N	1.8	3.1	<0.1 J	46	2.6	580 J	0.1 J	0.026 J	31 J	0.079	34	38	<0.5	4,900 J	3.4
MW-77-158	12/02/21	N	7.1	7.7	<0.1 J	43	--	--	--	0.048 J	--	0.06	32	--	0.53	--	--
MW-77-158	12/02/21	FD	6.9	7.9	<0.1 J	44	--	--	--	<0.02 J	--	0.062	33	--	0.78	--	--
MW-77-187	02/18/20	N	1.6	2.2	3.9	53 J	2.5	130	<0.1	<0.1	3.5	0.076	260	46	<2.5	6,600	3.9
MW-77-187	05/26/20	N	<1	<1	4.3 J	50	2.4	120	1.20 J	<0.02	3.3 J	0.11	250 J	48 J	0.62	6,500	3.1
MW-77-187	08/19/20	N	<1	1.2	4.4	47	0.66	24 J	<0.1	<0.1	1.1	0.08	260	41	0.67	5,800	3.4
MW-77-187	12/02/20	N	4.1	4.8	3.2	40	4	130 J	<0.1	<0.1	4.7	0.048	250	53	0.72	6,300	3.1
MW-77-187	02/17/21	N	2.3	2.7	<0.1	40	2.1	84	0.034 J	0.03 J	3.3	0.042	260	47 J	0.76	6,200	3.2
MW-77-187	02/17/21	FD	2.4	2.9	<0.1	42	2.1	81	0.04 J	0.028 J	3	0.043	260	46 J	0.8	5,900	3.2
MW-77-187	05/18/21	N	<1	<1	<0.1 J	43	3.4	130	0.044 J	0.037 J	3 J	0.062	260	41 J	0.87	5,400 J	3.2
MW-77-187	08/18/21	N	1.1	3	<0.1 J	42	4	180 J	<0.1 J	<0.1 J	6.6 J	0.065	210	41	0.81	6,300 J	3.5
MW-77-187	12/02/21	N	2.5	3.1	<0.1 J	40	--	--	--	0.05 J	--	0.05	250	--	0.81	--	--
MW-78-070	02/19/20	N	3,100	3,300	0.96	35	0.9 J	120 J	0.35	0.072 J	21 J	0.0016	7.4	8.1 J	8.3	340	5.7
MW-78-070	05/21/20	N	3,100	3,100	0.84	34	0.64	91 J	0.76 J	0.1	21	0.003	6.4	10 J	8	320	6.7
MW-78-070	08/18/20	N	3,100	3,200	0.81	32	1	100	2.10 J	0.063 J	20 J	0.0054	6.7	8.6	8.2	350	7.1
MW-78-070	12/03/20	N	3,100	3,300	1.3	32	0.88	93 J	0.14 J	<0.02	21	<0.0005	7.2	8.8	8.2	320	6.4
MW-78-070	12/03/20	FD	3,100	3,400	1.4	33	0.9	92 J	0.13 J	<0.02	21	<0.0005	7.2	8.4	7.9	310	6.5
MW-78-070	02/18/21	N	2,300	2,600	0.82	32	0.68	82 J	0.4 J	<0.02	18	0.0036	6.1	6.9	7.4	280	6.5
MW-78-070	05/20/21	N	1,700 J	1,700	0.82	33	0.72	100	0.077 J	0.021	18 J	<0.0005	5.3	7.8 J	6.4	300 J	6.6
MW-78-070	08/19/21	N	3,500	4,300	0.71	35 J	0.65	110 J	0.058 J	<0.02	22 J	<0.0005	8.7	8	8.8	340 J	6.1
MW-78-070	12/15/21	N	4,400	4,500	0.85	40	--	--	--	<0.02 J	--	0.00063	13	--	9.2 J	--	--
MW-78-142	02/19/20	N	6,800	7,000	0.7	32	2.4 J	330 J	0.43	0.062 J	19 J	0.02	21	33 J	22	2,600	1.8
MW-78-142	05/21/20	N	6,100	6,400	<0.1	36	2.2	200 J	2.50 J	0.13	18	0.025	22	38 J	32	2,900	1.9
MW-78-142	08/18/20	N	5,700	5,800	<0.1	35	0.59	29	0.7 J	<0.02 J	2.1 J	0.013	24	31	36	2,300	2.3

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-76-218	12/02/20	N	40	0.2	7,300	4.5	--	--	0.73	930	13,000	<1
MW-76-218	02/17/21	N	36	<0.22	7,400	4.1	--	--	0.79	920	14,000	<1
MW-76-218	05/21/21	N	48	<0.2	6,900	4.1	--	--	0.67 J	900	11,000 J	<1
MW-76-218	08/18/21	N	43	<0.2	6,900	4	--	--	1.5	890	13,000	<1
MW-76-218	08/18/21	FD	42	<0.2	7,100	4	--	--	1.5	920	13,000 J	<1
MW-76-218	12/02/21	N	--	<0.2	--	--	--	<10	0.85	880	--	<50
MW-77-046	01/30/20	N	640	2.3	2,400	5.1	--	--	0.082	980	6,500	1
MW-77-046	02/18/20	N	650	2.2	2,400	4.8	--	--	0.06	970	6,300	1.1 J
MW-77-046	05/26/20	N	250	0.56	1,600	5.9	--	--	<0.05	390	3,600	<1
MW-77-046	08/19/20	N	310	0.8	1,800	6.6	--	--	0.063 J	500	4,300	<10
MW-77-046	12/02/20	N	850	2.9	3,000	5.5	--	--	<0.1	1,300	8,100	1.5
MW-77-046	02/17/21	N	390	1.5	1,900	5.8	--	--	0.11	610	4,400	<1
MW-77-046	05/18/21	N	280	0.41	1,500	6.7	--	--	<0.05	370	3,500	<1
MW-77-046	05/18/21	FD	280	0.4	1,500	6.7	--	--	<0.05	370	3,400	<1
MW-77-046	08/18/21	N	320	0.78	1,700	6.1	--	--	<0.1	510	3,900	<1
MW-77-046	12/02/21	N	--	--	--	--	--	--	<0.1	--	--	1.5
MW-77-102	02/18/20	N	160	0.11	2,300	3.4	--	--	0.54	580	4,900	<1 J
MW-77-102	05/26/20	N	150	<0.2	2,300	2.8	--	--	0.49	540	4,800	<1
MW-77-102	08/19/20	N	150	<0.2	2,200	3.2	--	--	0.63 J	520	5,000	<1
MW-77-102	12/02/20	N	170	<0.2	2,300	3.8	--	--	0.61	570	4,700	<1
MW-77-102	02/17/21	N	160	<0.22	2,300	3.2	--	--	0.71	590	5,200	<1
MW-77-102	05/18/21	N	150	<0.2	2,100	3.5	--	--	0.5	540	4,700	<1
MW-77-102	08/18/21	N	150	<0.2	2,200	3.1	--	--	0.52	550	4,700	<1
MW-77-102	12/02/21	N	--	--	--	--	--	--	0.59	--	--	<1
MW-77-158	02/18/20	N	49	0.07 J	6,100	2.8	--	--	1.5	1,200	13,000	<1 J
MW-77-158	05/26/20	N	45	<0.2	6,200	3.1	--	--	1.5	1,100	14,000	<50
MW-77-158	08/19/20	N	49	<0.2	6,200	2.9	--	--	1.6 J	1,200	14,000	<1
MW-77-158	12/02/20	N	52	0.22	6,100	3.6	--	--	1.5	1,200	13,000	<1
MW-77-158	02/17/21	N	54	<0.2	6,400	3.3	--	--	1.6	1,200	14,000	<1
MW-77-158	05/18/21	N	54	<0.2	6,000	3.2	--	--	1.4	1,200	13,000	<1
MW-77-158	08/18/21	N	55	<0.2	6,400	3.4	--	--	0.82	1,100	13,000	<1
MW-77-158	12/02/21	N	--	--	--	--	--	--	1.5	--	--	<1
MW-77-158	12/02/21	FD	--	--	--	--	--	--	1.5	--	--	<1
MW-77-187	02/18/20	N	46	0.14	7,400	7.3	--	--	1.1	930	13,000	<1 J
MW-77-187	05/26/20	N	46	<0.2	7,500	7.5	--	--	0.75	930	13,000 J	<1
MW-77-187	08/19/20	N	46	<0.2	7,300	7.4	--	--	1 J	940	13,000 J	<1
MW-77-187	12/02/20	N	56	<0.2	7,300	8.2	--	--	1.2	980	13,000 J	<1
MW-77-187	02/17/21	N	48	<0.22	7,600	7.7	--	--	1.3	960	14,000	<1
MW-77-187	02/17/21	FD	47	<0.22	7,600	7.8	--	--	1.3	950	14,000	<1
MW-77-187	05/18/21	N	48	<0.2	7,200	7.7	--	--	1.1	930	12,000	<1
MW-77-187	08/18/21	N	43	<0.2	6,700	6.6	--	--	1.4	920	12,000	<1
MW-77-187	12/02/21	N	--	--	--	--	--	--	1.2	--	--	<1
MW-78-070	02/19/20	N	110	0.12	450	1.5	--	--	10	300	1,400	<1 J
MW-78-070	05/21/20	N	110	<0.2	470	1.3	--	--	9.5	290	1,400	<1 J
MW-78-070	08/18/20	N	110	<0.2	460	1.6	--	--	9.5	290	1,400	<1
MW-78-070	12/03/20	N	120	<0.2	440	1.7	--	--	9.1	300	1,300	<10
MW-78-070	12/03/20	FD	120	<0.2	440	1.7	--	--	9.4	300	1,400	<1
MW-78-070	02/18/21	N	120	<0.22	450	1.6	--	--	9.1	280	1,300	<1
MW-78-070	05/20/21	N	130	<0.2	430	1.7	--	--	7.6	250	1,200	<1
MW-78-070	08/19/21	N	100	<0.2	460	1.6	--	--	11	320	1,400	<1
MW-78-070	12/15/21	N	--	<0.2	--	--	--	<2.5	12	370	--	<1
MW-78-142	02/19/20	N	93	0.12	3,800	3.3	--	--	8.8	930	8,400	<10 J
MW-78-142	05/21/20	N	110	<0.2	3,500	3.2	--	--	8.8	870	8,200	<1 J
MW-78-142	08/18/20	N	110	<0.2	3,200	3.2	--	--	9.9	850	7,700	<1

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-78-142	12/03/20	N	5,700	5,600	4	28	2.5	190 J	0.84 J	<0.02	19	0.0059	22	29	28	2,800	1.7
MW-78-142	02/18/21	N	5,400	5,800	4.3	30	1.8	200 J	1.30 J	0.11	18	0.0071	22	30	27	2,200	1.8
MW-78-142	05/20/21	N	5,600 J	5,400	<0.1	27	2.2	290	0.33 J	<0.02	16 J	0.0038	21	32 J	37	2,300 J	2.1
MW-78-142	05/20/21	FD	5,600 J	5,500	<0.1	28	2	290	0.35 J	0.035	16 J	0.0037	22	34 J	38	2,400 J	2.1
MW-78-142	08/19/21	N	5,200	6,400	<0.1	29 J	2	290 J	1.20 J	0.026	18 J	0.0082	21	28	38	2,700 J	1.9
MW-78-142	12/15/21	N	5,500	5,400	<0.1	31	--	--	--	0.031 J	--	0.0042	21	--	33 J	--	--
MW-79-058	02/21/20	N	1,800 J	980 J	2.5 J	260 J	0.77	210 J	2.90 J	2.60 J	42 J	0.24 J	5.9	16 J	11	400	7.4 J
MW-79-058	02/21/20	FD	620 J	1,700 J	1.1 J	190 J	0.76	210 J	1.40 J	0.48 J	41 J	0.11 J	6.2	14 J	10	380	1.3 J
MW-79-058	05/29/20	N	540	580	1.1	260	0.34	170	0.5	0.12	35	0.47	7.8	14	5.4	240	3.1
MW-79-058	05/29/20	FD	540	580	0.95	260	0.37	180	0.45	0.093	36	0.45	7.5	14	5.6	290	3
MW-79-058	08/18/20	N	2,000	2,000	0.68	180	0.78	200	0.12 J	0.025 J	42 J	0.11	7.5	16	10	400	4.1
MW-79-058	08/18/20	FD	2,000	2,000	0.74	180	0.71	180	0.14 J	<0.02 J	44 J	0.11	7.8	16	9.5	380	4
MW-79-058	12/03/20	N	2,700	2,900	1.3	130	0.95	170 J	0.084 J	<0.02	41	0.0087	7.8	14	11	370	3.7
MW-79-058	02/18/21	N	2,700	2,800	1.3	100	0.63	160 J	0.085 J	0.021	40	0.0022	6.8	12	10	340	3.7
MW-79-058	05/20/21	N	2,600 J	2,700	0.62	92	0.69	210	0.05 J	<0.02	40 J	0.0038	5.8	14 J	8.3	370 J	3.7
MW-79-058	08/19/21	N	2,600	2,700	<0.1	98 J	0.64	200 J	0.11 J	<0.02	45 J	<0.0005	10	13	10	350 J	3.7
MW-79-058	12/15/21	N	3,200	3,400	0.3	93	--	--	--	<0.02 J	--	0.00056	10	--	9.4 J	--	--
MW-79-102	02/21/20	N	3,400	3,300	2.3	44	2.1	170 J	0.064	0.065 J	18 J	0.0059	28	19 J	74	1,800	2.8
MW-79-102	05/29/20	N	3,000	3,000	1.4	72	1.8	160	0.55	<0.1	22	0.054	28	20	70	1,700	3.1
MW-79-102	08/18/20	N	3,500 J	3,600	2	52	2.1	150	0.091 J	<0.02 J	19 J	0.021	31	18	79	1,800	3.5
MW-79-102	12/03/20	N	3,400	3,600	4.6	41	2.3	120 J	0.056 J	<0.02	20	0.0041	28	22	74	1,700	2.9
MW-79-102	02/18/21	N	3,200	3,400	4.8	37	1.6	110 J	0.033 J	<0.02	19	0.0016	28	17	72	1,500	2.9
MW-79-102	05/20/21	N	3,500 J	3,500	1.2	36	1.6	190	0.034 J	<0.02	18 J	0.00052	30	20 J	75	1,900 J	3.2
MW-79-102	08/19/21	N	2,400	2,500	1.3	32 J	1.6	140 J	0.12 J	<0.02	17 J	0.017	28	16	67	1,900 J	3.4
MW-79-102	12/15/21	N	2,800	2,800	1.5	37	--	--	--	<0.02 J	--	0.0052	29	--	57 J	--	--
MW-80-057	02/24/20	N	750	770	2	41	1	100	0.3 J	0.079 J	12	0.0028	33	11 J	30	1,100	4.3
MW-80-057	05/21/20	N	800	780	1.1	79	0.84	96 J	0.26 J	0.11	17	0.005	32	16 J	28	1,200	4.1
MW-80-057	08/18/20	N	690	700	1.9	63	1.1	97	0.066 J	<0.02 J	15 J	0.08	33	11	34	1,000	3.5
MW-80-057	12/03/20	N	780	780	3.2	51	1.2	75 J	0.08 J	<0.02	14	0.013	29	10	32	940	4.3
MW-80-057	12/03/20	FD	770	790	3.3	51	1.2	77 J	0.052 J	<0.02	14	0.013	29	10	33	940	4.3
MW-80-057	02/18/21	N	680	740	1.6	46	0.72	73 J	0.033 J	<0.02	13	0.0073	30	8.5	34	870	4.5
MW-80-057	05/20/21	N	840 J	800	1.5	47	0.83	120	0.15 J	<0.02	14 J	0.0017	30	11 J	36	910 J	4.4
MW-80-057	08/19/21	N	680	760	1.2	50 J	0.82	95 J	0.058 J	<0.02	13 J	0.0018	34	9.5	41	1,300 J	4.3
MW-80-057	12/15/21	N	710	710	1.3	51	--	--	--	<0.02 J	--	0.0047	36	--	31 J	--	--
MW-80-082	02/24/20	N	1,900	1,900	1.7	41	1.3	230	0.091 J	0.059 J	19	0.00065	18	25 J	12	1,900	1.2
MW-80-082	02/24/20	FD	1,900	1,800	1.6	39	1.3	230	0.056 J	0.037 J	20	0.00061	17	25 J	12	1,800	1.2
MW-80-082	05/21/20	N	1,600	1,600	1.2	43	1	180 J	1.10 J	<0.02	22	0.0043	17	27 J	8.2	2,000	1.2
MW-80-082	05/21/20	FD	1,600	1,600	1.2	43	0.96	170 J	1 J	0.038	21	0.0044	17	27 J	7.8	2,000	1.2
MW-80-082	08/18/20	N	1,600	1,600	1.4	37	1.6	210	0.037 J	<0.02 J	23 J	0.01	20	21	15	1,600	1.2
MW-80-082	12/03/20	N	1,600	1,700	3.6	40	1.4	180 J	0.049 J	<0.02	23	0.00092	16	36	11	1,600	1
MW-80-082	02/18/21	N	1,800	1,900	4.2	39	0.93	160 J	0.034 J	<0.02	22	0.00074	16	21	12	1,500	<1
MW-80-082	02/18/21	FD	1,800	2,000	4.2	40	1	170 J	0.048 J	0.022	23	0.00092	17	21	13	1,400	<1
MW-80-082	05/20/21	N	2,100 J	2,100	0.76	38	1	260	0.02 J	<0.02	20 J	<0.0005	18	25 J	11	1,800 J	1.2
MW-80-082	08/19/21	N	1,300	1,600	<0.1	32 J	1	180 J	0.064 J	<0.02	18 J	<0.0005	24	19	29	1,800 J	1.5
MW-80-082	12/15/21	N	1,200	1,200	1.5	33	--	--	--	<0.02 J	--	0.00087	26	--	24 J	--	--
MW-81-043	01/08/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-81-043	01/28/20	N	1.8	3.8	1.9 J	320 J	0.9	170 B	1	0.6 J	46 J	0.6 J	24 J	11 J	1.8	1,200	4.7
MW-81-043	02/18/20	N	4.4	6.9	2.9	250 J	0.83	210	0.36 J	0.38	46	0.35	26	14	1.9	1,200	6.1
MW-81-043	03/18/20	N	2.1	3.7	2.9	220	0.89	180	2.20	0.16 J	44 J	0.32	25	12 J	2.1	1,200	4.8
MW-81-043	04/21/20	N	7.4	10	0.85	160	0.94	230	0.49	0.28	46	0.21	21	13	1.6	1,300	7.5
MW-81-043	05/21/20	N	2.4	4.9	1.4	190	0.96	180 J	1.80 J	0.38	59	0.32	27	16 J	1.3	1,500	7.3
MW-81-043	08/18/20	N	1.5	4.3	2.6	180	1.5	220	2.20 J	0.48 J	61 J	0.36	30	14	1.5	1,300	5.7
MW-81-043	12/03/20	N	7.8	8.7	3.4	120	1.1	170 J	3.20 J	0.028	58	0.22	29	18	3.2	1,100	8.6
MW-81-043	02/24/21	N	13	13	2	100 J	1.1	220	1.80 J	0.022	54	0.11	28	11 J	2.1	1,200 J	14

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-78-142	12/03/20	N	100	<0.2	3,400	3.5	--	--	8.7	860	7,600	<1
MW-78-142	02/18/21	N	93	<0.22	3,600	2.9	--	--	9	880	8,000	<1
MW-78-142	05/20/21	N	99	<0.2	3,400	3.5	--	--	9.1	880	7,600	<1
MW-78-142	05/20/21	FD	98	<0.2	3,400	3.2	--	--	9.3	870	7,300	<1
MW-78-142	08/19/21	N	98	<0.2	3,500	3.2	--	--	10	870	7,700	<20
MW-78-142	12/15/21	N	--	<0.2	--	--	--	<5	9.9	900	--	<1
MW-79-058	02/21/20	N	93	0.03 J	690	<1	--	--	10	380	1,900	<1
MW-79-058	02/21/20	FD	91	0.05 J	690	<1	--	--	10	380	2,000	<1
MW-79-058	05/29/20	N	85	<0.2	510	<1	--	--	4.6	270	1,600	<1
MW-79-058	05/29/20	FD	83	<0.2	520	<1	--	--	4.5	270	1,500	<10
MW-79-058	08/18/20	N	82	<0.2	690	<1	--	--	10	380	2,100	<1
MW-79-058	08/18/20	FD	82	<0.2	690	<1	--	--	10	390	2,100	<1
MW-79-058	12/03/20	N	86	<0.2	700	1	--	--	10	410	1,900	<1
MW-79-058	02/18/21	N	89	<0.22	710	<1	--	--	10	400	1,900	<10
MW-79-058	05/20/21	N	99	<0.2	670	<1	--	--	10	400	1,800	<1
MW-79-058	08/19/21	N	190	<0.2	700	<1	--	--	10	410	2,000	<1
MW-79-058	12/15/21	N	--	<0.2	--	--	--	<5	11	410	--	<5
MW-79-102	02/21/20	N	110	0.04 J	2,100	2.3	--	--	15	870	5,400	<1
MW-79-102	05/29/20	N	130	<0.2	2,200	2.2	--	--	6.9	880	5,300	<1
MW-79-102	08/18/20	N	130	<0.2	2,100	2.9	--	--	17	870	5,400	<1
MW-79-102	12/03/20	N	130	<0.2	2,200	2.9	--	--	16	880	5,400	<1
MW-79-102	02/18/21	N	130	<0.22	2,200	2.3	--	--	17	900	5,300	<1
MW-79-102	05/20/21	N	130	<0.2	2,100	2.9	--	--	17	870	5,200	<1
MW-79-102	08/19/21	N	170	<0.2	1,800	2.7	--	--	15	860	4,400	<1
MW-79-102	12/15/21	N	--	<0.2	--	--	--	<5	16	870	--	<1
MW-80-057	02/24/20	N	120	0.12	1,200	3.5	--	--	16	480	3,200	<1
MW-80-057	05/21/20	N	120	<0.2	1,400	2.8	--	--	22	490	3,400	<1 J
MW-80-057	08/18/20	N	130	0.99	1,300	3.1	--	--	17	490	3,200	<1
MW-80-057	12/03/20	N	130	<0.2	1,300	3.2	--	--	16	510	3,100	<1
MW-80-057	12/03/20	FD	120	<0.2	1,300	3.2	--	--	16	500	3,100	<1
MW-80-057	02/18/21	N	120	<0.22	1,300	2.9	--	--	17	490	3,200	<1
MW-80-057	05/20/21	N	110	<0.2	1,300	3	--	--	17	520	3,300	<1
MW-80-057	08/19/21	N	110	<0.2	1,300	3.3	--	--	16	490	3,200	<1
MW-80-057	12/15/21	N	--	<0.2	--	--	--	<5	17	520	--	<1
MW-80-082	02/24/20	N	100	0.13	2,500	2.5	--	--	10	520	5,800	<1
MW-80-082	02/24/20	FD	99	0.08 J	2,500	2.5	--	--	9.8	530	5,600	<1
MW-80-082	05/21/20	N	96	<0.2	2,500	2.3	--	--	8.2	480	5,200	<1 J
MW-80-082	05/21/20	FD	97	<0.2	2,600	2.2	--	--	8.3	480	5,400	<1 J
MW-80-082	08/18/20	N	100	<0.2	2,400	2.7	--	--	11	500	5,400	<1
MW-80-082	12/03/20	N	110	<0.2	2,500	2.3	--	--	8.8	520	5,300	<1
MW-80-082	02/18/21	N	100	<0.2	2,600	2.4	--	--	11	530	5,800	<1
MW-80-082	02/18/21	FD	98	<0.22	2,600	2.3	--	--	9.9	540	5,800	<1
MW-80-082	05/20/21	N	95	<0.2	2,600	2.5	--	--	9.9	540	5,600	<1
MW-80-082	08/19/21	N	110	<0.2	2,200	2.7	--	--	14	530	4,800	<1
MW-80-082	12/15/21	N	--	<0.2	--	--	--	<5	13	570	--	<1
MW-81-043	01/08/20	N	--	--	--	--	--	--	--	--	--	--
MW-81-043	01/28/20	N	120	0.08 J	1,800	4	--	--	0.74	360	3,800	<1 J
MW-81-043	02/18/20	N	130	0.07 J	1,700	<1	--	--	0.68	340	3,600	<1 J
MW-81-043	03/18/20	N	410	0.13	1,700	3.7	--	--	0.64	350	3,800	<1 J
MW-81-043	04/21/20	N	130	0.11	1,900	3.7	--	--	0.85	440	4,300	<10
MW-81-043	05/21/20	N	160	<0.2	2,000	4	--	--	0.62	430	4,600	<1 J
MW-81-043	08/18/20	N	170	<0.2	1,900	4.5	--	--	0.53	440	4,500	<1
MW-81-043	12/03/20	N	150	<0.2	1,900	4.9	--	--	0.62	450	4,100	<1
MW-81-043	02/24/21	N	120	<0.2	1,800	4.8	--	--	0.63	390	3,600	<1

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-81-043	05/18/21	N	8.8 J	9.5	1.1 J	95	0.94	210	0.16 J	0.16 J	49 J	0.14	26	11 J	1.2	1,100 J	12
MW-81-043	08/17/21	N	7.3	7.7	0.73	93	0.99	230	0.35 J	0.079	52 J	0.18	21	15 J	1.3	1,300 J	10
MW-81-043	12/13/21	N	8.7	9.2	0.75	110	--	--	--	<0.02 J	--	0.16	24	--	2.6	--	--
MW-81-098	01/28/20	N	<0.2	<1	<0.1 J	93 J	1.2	250 B	0.47	0.21 J	44 J	0.45 J	3.9 J	15 J	<0.5	1,800	1.7
MW-81-098	02/18/20	N	<0.2	<1	<0.1	87 J	1.1	280	0.17 J	0.092	40	0.28	3.6	15	<0.5	1,600	2.8
MW-81-098	03/18/20	N	0.31	<1	<0.1	69	1.2	270	0.13	0.075 J	37 J	0.23	3.1	16 J	<0.5	1,800	2.4
MW-81-098	04/21/20	N	<0.2	<1	<0.1	75	1.2	280	1.20	0.15	38	0.25	3.6	15	<0.5	1,500	2.8
MW-81-098	05/21/20	N	0.29	<1	<0.1	74	1.1	200 J	7.30 J	0.15	41	0.23	3.7	17 J	<0.5	1,900	2.8
MW-81-098	08/18/20	N	<1	<1	<0.1	73	1.8	260	1.20 J	0.023 J	45 J	0.16	3.8	15	<0.5	1,600	4.1
MW-81-098	08/18/20	FD	<1	1	<0.1	71	1.7	260	1.40 J	0.037 J	45 J	0.16	3.5	15	<0.5	1,500	3.7
MW-81-098	12/03/20	N	1.2	1.5	1	72	1.4	210 J	0.42 J	<0.02	45	0.12	3.1	18	<0.5	1,500	4.3
MW-81-098	02/24/21	N	1.4	1.5	<0.1	72 J	1.3	310	0.22 J	<0.02	42	0.11	3.2	18 J	<0.5	1,700 J	4.8
MW-81-098	05/18/21	N	2 J	2.3	<0.1 J	67	1.1	240	0.086 J	0.092 J	33 J	0.1	3.6	11 J	<0.5	1,600 J	4.5
MW-81-098	08/17/21	N	0.56	<1	<0.1	65	1.2	270	0.32 J	0.025	39 J	0.11	3.8	18 J	<0.5	1,500 J	4.4
MW-81-098	08/17/21	FD	0.59	<1	<0.1	63	1.1	250	0.27 J	0.036	36 J	0.11	3.5	15 J	<0.5	1,500 J	4.1
MW-81-098	12/13/21	N	1.2	1.7	<0.1	70	--	--	--	0.041 J	--	0.14	3.4	--	<0.5	--	--
MW-82-046	02/27/20	N	<1	1	16	76 J	2.2	210	4.40 J	3.80 J	260	0.18	30	24	0.67	3,800	2.5
MW-82-046	05/28/20	N	<1	1.2	32	68	2.2	160	7.70	6.60	210	0.48	67	23 J	0.72	3,100	2.1
MW-82-046	08/25/20	N	<1	1.1	15	64	1.4	120 J	4.50	4	240	0.27	21 J	20 J	1.5	2,000	2.3
MW-82-046	12/01/20	N	<0.2	1.2	15	57	1.9 J	140 J	3.80	3 J	230 J	0.17	12	20 J	4.7	1,700	1.3
MW-82-046	02/25/21	N	<1	<1	13	73	2	220	4.90 J	3.30	260	0.17	22	21 J	1.2	2,700 J	2.6
MW-82-046	05/18/21	N	<1	<1	21 J	64	1.9	170	6.40 J	5.40 J	200 J	0.27	55	17 J	1.9	2,700 J	1.9
MW-82-046	08/17/21	N	<0.2	<1	13	53	1.3	140	3.70 J	3	190 J	0.16	15	18 J	1.7	2,000 J	1.8
MW-82-046	12/16/21	N	<0.2	<1	15	61	--	--	--	2.90 J	--	0.17	11	--	2	--	--
MW-82-046	12/16/21	FD	<0.2	<1	15	59	--	--	--	3.20 J	--	0.17	11	--	1.8	--	--
MW-82-112	02/27/20	N	0.2 J	<1	<0.1	36 J	1.4	210	0.23 J	0.059 J	17	0.053	10	14	<0.5	2,100	5.6
MW-82-112	05/28/20	N	<0.2	<1	<0.1	35	1.5	180	0.54	0.073	18	0.072	7.6	16 J	<0.5	1,700	4.8
MW-82-112	08/25/20	N	<1	1.3	<0.1	35	1.4	130 J	0.089	0.042	17	0.053	9.6 J	18 J	<0.5	2,000	6.8
MW-82-112	12/01/20	N	0.44	1.1	2	34	1.7 J	160 J	0.28	<0.02	22 J	0.027	9.3	16 J	<0.5	1,400	6.5
MW-82-112	02/25/21	N	0.37	1.2	<0.1	34	1.5	220	0.098 J	0.021	19	0.024	9.1	15 J	<0.5	1,500 J	7.3
MW-82-112	05/18/21	N	<0.2	1.3	<0.1 J	30	1.2	160	0.27 J	0.11 J	15 J	0.031	6.7	12 J	<0.5	1,300 J	6.3
MW-82-112	08/17/21	N	0.28	<1	<0.1	29	1.4	180	0.051 J	<0.02	15 J	0.023	8.3	15 J	<0.5	1,600 J	6.6
MW-82-112	12/16/21	N	0.88	2	<0.1	35	--	--	--	<0.02	--	0.027	8.7	--	<0.5	--	--
MW-82-168	02/27/20	N	1.2 J	2.6	1.7	49 J	1.5	580	0.12 J	<0.1 J	84	0.25	18	37	<0.5	4,900	1.9
MW-82-168	05/28/20	N	1.9	3.9	1.9	57	1.1	480	0.12	0.048	79	0.31	20	46 J	0.74	4,300	2
MW-82-168	08/25/20	N	2.9	6.1	1.9	53	0.72	350 J	0.21	0.079	77	0.26	19 J	47 J	0.83	4,200	2.1
MW-82-168	12/01/20	N	4.7	6.5	1.7	49	1.4 J	440 J	2	0.094 J	100 J	0.16	17	48 J	0.74	3,100	1.5
MW-82-168	02/25/21	N	3.5	5.9	<0.1	49	1.5	740	0.23 J	<0.1	100	0.13	17	33 J	0.63	5,000 J	2.2
MW-82-168	05/18/21	N	3.1 J	5	<0.1 J	49	0.99	640	0.2 J	0.035 J	68 J	0.16	19	32 J	0.65	4,000 J	1.9
MW-82-168	08/17/21	N	<1	<1	<0.1	49	1	700	0.27 J	0.028	67 J	0.32	18	37 J	<0.5	4,200 J	2
MW-82-168	12/16/21	N	7	7.5	<0.1	48	--	--	--	0.031 J	--	0.14	15	--	<0.5	--	--
MW-82-198	02/27/20	N	<1	3.5	3.2	41 J	2.4	110	0.11 J	0.068 J	3	0.079	150	41	<0.5	6,700	2.5
MW-82-198	05/21/20	N	<1	9	3.9	46	1.8	93 J	1.90 J	0.19	4.8	0.23	81	61 J	0.69	5,800	2
MW-82-198	08/25/20	N	<1	2.7	3.2	39	1.6	71 J	0.2	<0.1	3.4	0.1	120 J	57 J	0.91	5,600	3.1
MW-82-198	12/01/20	N	<1	<1	2.3	35	3 J	90 J	0.33	<0.1	3.6 J	0.07	160	63 J	0.79	5,500	2.4
MW-82-198	02/25/21	N	<1	3.3	<0.1	40	2.6	130	4.80 J	0.27	3.4	0.059	160	47 J	0.58	6,700 J	3.1
MW-82-198	05/18/21	N	<1	1	<0.1 J	36	1.9	130	0.4 J	0.038 J	2.7 J	0.11	74	45 J	0.77	5,300 J	2.9
MW-82-198	08/17/21	N	<1	<1	<0.1	42	1.6	150	0.23 J	0.02	4.8 J	0.21	75	41 J	0.87	5,200 J	2.7
MW-82-198	12/16/21	N	<1	2.9	<0.1	34	--	--	--	0.12 J	--	0.057	140	--	<0.5	--	--
MW-83-090	02/19/20	N	49	47	0.26	77	0.35 J	150 J	0.14	0.046 J	24 J	<0.0005	3.2	8.9 J	3.6	230	2.8
MW-83-090	05/28/20	N	44	43	<0.1	84	0.31	150	0.29 J	0.12 J	28	0.002	3	9.5 J	2.7	230	2.6
MW-83-090	05/28/20	FD	44	43	0.21	84	0.3	140	0.63 J	0.05 J	27	0.001	3	9.4 J	2.9	220	2.6
MW-83-090	08/26/20	N	49	48	<0.1	89	0.41 J	140	0.14 J	<0.02	31 J	<0.0005	3.5	9.1 J	3.1	300 J	3
MW-83-090	12/09/20	N	54	50	<0.1	82	0.43	150	0.075	<0.02	28	<0.0005	3.2	11	2.8	250	2.6

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-81-043	05/18/21	N	170	<0.2	1,900	4.1	--	--	0.57	450	4,000	<1
MW-81-043	08/17/21	N	180	<0.2	2,000	3.8	--	--	0.53	480	4,400	<1
MW-81-043	12/13/21	N	--	--	--	--	--	--	0.48	--	--	<1
MW-81-098	01/28/20	N	160	0.06 J	2,500	2.4	--	--	0.22	590	5,300	<1 J
MW-81-098	02/18/20	N	160	0.08 J	2,400	3	--	--	0.33	580	5,200	<1 J
MW-81-098	03/18/20	N	170	0.14	2,300	1.7	--	--	0.4	590	5,200	<1 J
MW-81-098	04/21/20	N	180	0.06 J	2,500	2.3	--	--	0.25	600	5,200	<1
MW-81-098	05/21/20	N	170	<0.2	2,300	2.3	--	--	0.31	570	5,200	<1 J
MW-81-098	08/18/20	N	180	<0.2	2,200	2.5	--	--	0.38	560	5,300	<1
MW-81-098	08/18/20	FD	170	<0.2	2,300	2.8	--	--	0.36	550	5,200	<1
MW-81-098	12/03/20	N	180	<0.2	2,300	2.5	--	--	0.48	580	5,100	<1
MW-81-098	02/24/21	N	170	<0.2	2,300	2.9	--	--	0.51	570	5,200	<20
MW-81-098	05/18/21	N	180	<0.22	2,300	2.5	--	--	0.53	570	5,000	<20
MW-81-098	08/17/21	N	170	<0.2	2,300	2.4	--	--	0.53	580	5,000	<1
MW-81-098	08/17/21	FD	180	<0.2	2,300	2.6	--	--	0.45	570	5,200	<1
MW-81-098	12/13/21	N	--	--	--	--	--	--	0.58	--	--	<1
MW-82-046	02/27/20	N	1,300	7.7	3,400	2.4	--	--	<0.1	1,900	11,000	<10
MW-82-046	05/28/20	N	1,200	6.2	3,100	4.4 J	--	--	0.058 J	1,500	9,400	2.3 J
MW-82-046	08/25/20	N	1,300	6.8	2,600	2.1	--	--	0.19	1,600	8,300	3.5
MW-82-046	12/01/20	N	980	5.3	2,000	2.3	--	--	<0.1	1,500	7,200	2.1
MW-82-046	02/25/21	N	1,200	8.2	3,100	2.3	--	--	0.29	1,900	9,600	2.1
MW-82-046	05/18/21	N	1,200	5.4	2,800	4.1	--	--	0.15	1,500	8,400	2
MW-82-046	08/17/21	N	1,100	6.5	2,300	2.6	--	--	<0.1	1,500	7,100	<20
MW-82-046	12/16/21	N	--	--	--	--	--	--	<0.1	--	--	1.8
MW-82-046	12/16/21	FD	--	--	--	--	--	--	<0.1	--	--	1.8
MW-82-112	02/27/20	N	82	0.12	2,400	3	--	--	0.63	660	5,300	<1
MW-82-112	05/28/20	N	120	<0.2	2,300	2.5 J	--	--	0.29 J	550	4,900	<1
MW-82-112	08/25/20	N	100	<0.2	2,300	3.2	--	--	0.68	580	5,200	<1
MW-82-112	12/01/20	N	93	<0.2	2,400	3.3	--	--	0.74	610	5,700	<20
MW-82-112	02/25/21	N	89	<0.2	2,400	3.4	--	--	0.76	630	5,200	<20
MW-82-112	05/18/21	N	130	<0.2	2,100	2.5	--	--	0.51	530	4,500	<1
MW-82-112	08/17/21	N	100	<0.2	2,300	2.8	--	--	0.62	590	4,900	<1
MW-82-112	12/16/21	N	--	--	--	--	--	--	0.72	--	--	<1
MW-82-168	02/27/20	N	63	0.13	6,000	2.8	--	--	1.4	1,200	13,000	<1
MW-82-168	05/28/20	N	64	<0.2	6,200	2.5 J	--	--	1.5 J	1,100	14,000	<1
MW-82-168	08/25/20	N	66	<0.2	6,100	2.8	--	--	1.9	1,100	14,000	<1
MW-82-168	12/01/20	N	65	<0.2	6,200	3	--	--	1.6	1,200	12,000	<1
MW-82-168	02/25/21	N	63	<0.22	6,300	2.7	--	--	1.5	1,100	12,000	<1
MW-82-168	05/18/21	N	67	<0.2	6,100	3.1	--	--	1.4	1,100	14,000 J	<1
MW-82-168	08/17/21	N	78	<0.2	6,000	2.7	--	--	0.77	990	13,000	<1
MW-82-168	12/16/21	N	--	--	--	--	--	--	1.6	--	--	<1
MW-82-198	02/27/20	N	43	0.09 J	6,700	5.8	--	--	1	1,100	13,000 J	<1
MW-82-198	05/21/20	N	55	0.28	6,200	4.6	--	--	0.63	1,000	13,000	<1 J
MW-82-198	08/25/20	N	39	<0.2	6,700	5.2	--	--	1.3	1,100	12,000 J	<1
MW-82-198	12/01/20	N	45	0.36	6,900	6.6	--	--	1.2	1,100	12,000 J	<1
MW-82-198	02/25/21	N	42	<0.2	7,100	6.1	--	--	1.2	1,100	14,000	<1
MW-82-198	05/18/21	N	34	<0.2	6,500	3.9	--	--	1.4	1,100	13,000	<1
MW-82-198	08/17/21	N	48	<0.2	6,100	4	--	--	1.1	1,000	12,000	<1
MW-82-198	12/16/21	N	--	--	--	--	--	--	1.2	--	--	<1
MW-83-090	02/19/20	N	100	0.05 J	500	1.6	--	--	4.9	160	1,300	<1 J
MW-83-090	05/28/20	N	91	<0.2	580	1.5 J	--	--	3.8 J	150	1,700	<1
MW-83-090	05/28/20	FD	89	<0.2	580	1.4 J	--	--	3.7 J	150	1,700	<1
MW-83-090	08/26/20	N	88	<0.2	600	1.7	--	--	3.9 J	150	1,700	<1 J
MW-83-090	12/09/20	N	88	<0.2	560	1.4	--	--	4.4	160	1,300	<1

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-83-090	12/09/20	FD	53	51	0.19	82	0.42	140	0.078	<0.02	27	<0.0005	3.2	10	2.8	260	2.7
MW-83-090	02/23/21	N	49	49	<0.1	80	0.5	210 J	0.36	<0.1	39 J	0.00099	3.5	9.4 J	3.5	260	2.8
MW-83-090	05/25/21	N	44	44	<0.1 J	93	0.29	170 J	0.69 J	0.094 J	29 J	0.0049 J	3.5	12 J	2.7	230 J	2.9
MW-83-090	05/25/21	FD	44	44	<0.1 J	90	0.28	170 J	0.79 J	0.078 J	29 J	0.0039 J	3.2	11 J	2.7	240 J	2.8
MW-83-090	08/23/21	N	52	55	<0.1	78	0.28	140	0.42 J	0.032 J	25 J	<0.0005	2.9	9.2 J	1.9	230	3
MW-83-090	12/16/21	N	67	65	0.3	--	--	--	--	--	--	0.0035	4	--	3.1	--	--
MW-83-180	01/29/20	N	7.7	7.8	1.3	49	1.7	330	0.14	0.022	24 J	0.0011	33	19	0.72	2,400	8.7
MW-83-180	02/19/20	N	8.4	8.3	1.4	50	1.6 J	280 J	0.042	0.043 J	20 J	0.00085	34	18 J	0.63	2,200	9
MW-83-180	03/17/20	N	8.8	7.7	0.7	47 J	1.4	280	0.035 J	0.033 J	20	<0.0005	31	22	0.59	2,300	8.1
MW-83-180	04/23/20	N	7.9	8.1	1.1	56	1.7	280	0.4	0.34 J	20	0.0077	34	19	0.58	2,200	8.7
MW-83-180	05/28/20	N	9.1	9.4	4.6	50	1.4	240	0.055	<0.02	19	0.0011	35	21 J	0.7	2,300	9.4
MW-83-180	06/15/20	N	6	5.6	<0.1 J	45	1.2	210	0.48	<0.02	17	0.0025	30	18 J	0.7	2,000	8.9
MW-83-180	07/22/20	N	8.5	8.8	0.5	51	1.5	250	0.033	<0.02	19 J	0.00094	35	20 J	0.59	2,800	9.3
MW-83-180	08/26/20	N	8.4	8.8	1.2	52	1.5 J	200	0.1 J	0.052 J	21 J	0.00057	37	23 J	0.65	2,300 J	9.8
MW-83-180	09/29/20	N	9.4	9.3	1.2	52	1.1 J	230 J	0.061 J	<0.02 J	18 J	0.0036	37	17 J	0.6	2,200 J	8.8
MW-83-180	10/21/20	N	9.8	10	4.7	52	1.7	210 J	0.035	<0.02	20	0.0012	34	28	0.64	2,900	9.7
MW-83-180	12/09/20	N	9.6	8.6	0.84	51	1.2	220	0.023	<0.02	21	<0.0005	36	19	0.61	1,900	9.5
MW-83-180	02/23/21	N	4.7	6.8	<0.1	47	1.9	370 J	0.46	<0.1	26 J	<0.0005	34	20 J	0.68	2,600	8.8
MW-83-180	05/25/21	N	5.1	5.4	<0.1 J	46	1.2	290 J	1.20 J	<0.02 J	18 J	0.00077	31	24 J	0.67	1,900 J	9.2
MW-83-180	08/23/21	N	3.9	7.3	<0.1	47	1.2	270	0.38 J	0.09 J	16 J	<0.0005	30	30 J	0.66	2,200	9.9
MW-83-180	12/16/21	N	6.2	8.4	<0.1	--	--	--	--	--	--	0.0011	33	--	0.54	--	--
MW-83-225	02/19/20	N	450	450	4.3	44	2.2 J	390 J	0.62	<0.02 J	22 J	0.0042	49	29 J	0.57	3,400	5.5
MW-83-225	05/28/20	N	510	490	3.9	43	1.7	320	0.59	<0.02	21	0.0044	49	30 J	0.67	3,400	6
MW-83-225	08/26/20	N	460	420	3.8	46	1.8 J	250	0.49 J	0.44 J	22 J	0.0042	55	31 J	0.58	4,400 J	6.6
MW-83-225	12/09/20	N	420	360	<0.1	40	1.7	290	0.27	<0.02	22	0.0029	50	30	0.6	2,600	5.7
MW-83-225	02/23/21	N	400	390	<0.1	37	3.1	530 J	0.54	<0.1	33 J	0.0019	51	26 J	0.57	4,700 J	5.8
MW-83-225	02/23/21	FD	390	380	<0.1	36	2.4	410 J	0.58	<0.1	26 J	0.0019	49	25 J	0.73	3,400 J	5.6
MW-83-225	05/25/21	N	400	390	<0.1 J	42	2.2	300 J	1 J	0.25 J	23 J	0.0032	51	32 J	0.61	3,100 J	6.3
MW-83-225	08/23/21	N	370	420	<0.1	38	1.5	350	1.10 J	0.082 J	15 J	0.0038	45	28 J	1.6	3,400	6.6
MW-83-225	12/16/21	N	250	220	<0.1	--	--	--	--	--	--	0.0053	47	--	<0.5	--	--
MW-83-245	02/19/20	N	1.7	2.3	5.5	120	2.5 J	390 J	0.024	0.024 J	13 J	0.088	63	43 J	<0.5	4,200	2.1
MW-83-245	05/22/20	N	4.5	4.9	<0.1	96	1.9	340	3.40 J	0.025 J	12 J	0.064	65	55 J	<0.5	5,800 J	2.3
MW-83-245	08/26/20	N	9.2	10	5.7	110	3.9 J	310	<0.1 J	<0.1	15 J	0.073	73	60 J	<0.5	5,700 J	2.2
MW-83-245	12/09/20	N	19	16	<0.1	100	1.7	290	0.025	<0.02	11	0.068	68	58	<0.5	3,400	3.1
MW-83-245	02/23/21	N	23	21	<0.1	85	3	490 J	<0.1	<0.1	19 J	0.08	64	42 J	<0.5	4,600	2.6
MW-83-245	05/25/21	N	14	13	<0.1 J	150	1.9	460 J	<0.1	<0.1 J	4.5 J	<0.0005	68	140 J	0.67	4,100 J	6.1
MW-83-245	08/23/21	N	17	17	<0.1	110	1.7	370	0.11 J	0.021 J	3.1 J	0.0019	60	87 J	<0.5	4,400	5.1
MW-83-245	12/16/21	N	3.6	4.1	<0.1	--	--	--	--	--	--	0.042	64	--	<0.5	--	--
MW-84-057	01/27/20	N	31	29	1.2	44	0.53	68	0.87 J	0.05 J	12	0.0022	19	6.4	5.2	240 J	6.7
MW-84-057	02/19/20	N	32	31	1.4	46	0.51 J	90 J	0.55	0.093 J	15 J	0.0034	20	7.8 J	5.3	280	7.7
MW-84-057	03/18/20	N	29	29	1.2	45 J	0.43	80	0.22 J	0.13 J	14	0.0029	19	7.4	5	260	7.4
MW-84-057	03/18/20	FD	29	29	1.2	44 J	0.43	82	0.37 J	0.12 J	14	0.0033	18	7.8	4.8	270	7.4
MW-84-057	04/22/20	N	30	30	1.3	47	0.38	78	0.23 J	0.089 J	13	0.0034 J	19	8.1	5.2	280	7.7
MW-84-057	04/22/20	FD	30	30	1.2	45	0.37	76	0.3 J	0.055 J	13	0.0026 J	18	8	5.1	270	7.5
MW-84-057	05/28/20	N	27	28	1.2	49	0.43	83	0.42	0.048	15	0.0089	18	8 J	4.2	310	7.7
MW-84-057	06/17/20	N	26	26	1.2 J	52	0.44	83	0.37	0.076	15	0.0032	17	7.9	4	280	7.8
MW-84-057	07/22/20	N	24	27	1.2	53	0.48	82	0.81	0.026	15 J	<0.0005	18	7.8 J	4	290	7.7
MW-84-057	08/21/20	N	28	28	1.2	54	0.23	80	1.60	0.075	17	0.0023	19	9	4.1	300	8.7
MW-84-057	09/29/20	N	0.42	<1	<0.1	220	0.44 J	290 J	0.045 J	<0.02 J	65 J	0.06	7.3	11 J	0.9	630 J	4.1
MW-84-057	10/20/20	N	28	27	1.2 J	49	0.42	73	0.42 J	<0.02	13 J	<0.0005	17	7.9 J	4.2	230	7.5
MW-84-057	12/10/20	N	31	32	1.2	45	0.32	72 J	0.57 J	0.046 J	15	0.00082	18	8.6	5	250	8.9
MW-84-057	02/19/21	N	32	34	1.6	47	0.42	64 J	0.5	<0.02	14	0.0021	19	6.1	4.8	200	8.2
MW-84-057	05/24/21	N	27	28	0.67 J	56	0.39	96 J	0.73 J	0.11 J	16 J	0.0047	17	8.5 J	3.9	240 J	8.6
MW-84-057	08/20/21	N	23	26	1.1	56	0.37	97	0.076 J	0.02 J	16 J	<0.0005	12	8 J	3.4	300 J	8.6

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Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-83-090	12/09/20	FD	89	<0.2	560	1.5	--	--	4.5	160	1,300	<1
MW-83-090	02/23/21	N	84	<0.2	560	1.8	--	--	4.9	150	1,200	<1
MW-83-090	05/25/21	N	88	<0.2	580	1.5	--	--	3.9	150	1,400	<1
MW-83-090	05/25/21	FD	83	<0.2	580	1.4	--	--	4	150	1,400	<1
MW-83-090	08/23/21	N	96	<0.2	550	1.3	--	--	4.5	150	1,600	<1
MW-83-090	12/16/21	N	--	--	--	--	--	--	5	--	--	--
MW-83-180	01/29/20	N	39	<0.1	3,500	4.6	--	--	0.51	480	7,500	<1
MW-83-180	02/19/20	N	41	0.05 J	3,400	4.8	--	--	0.5	490	7,200	<1 J
MW-83-180	03/17/20	N	39	0.06 J	3,500	3.9	--	--	0.58 J	490	7,600	<1 J
MW-83-180	04/23/20	N	34	0.05 J	3,700	4.3	--	--	0.53	500	7,500	<1
MW-83-180	05/28/20	N	38	<0.2	3,700	5.2 J	--	--	0.55 J	500	7,800	<1
MW-83-180	06/15/20	N	44	<0.2	3,300	4.4	--	--	0.68 J	460	7,100	<1
MW-83-180	07/22/20	N	36	<0.2	3,500	5	--	--	0.64	500	7,800	<1
MW-83-180	08/26/20	N	36	<0.2	3,500	4.4	--	--	0.6	500	8,200	<10 J
MW-83-180	09/29/20	N	40	<0.2	3,400	4.4	--	--	0.66	480	7,400	<1 J
MW-83-180	10/21/20	N	37	<0.2	3,500	4.5	--	--	0.54	500	7,900	<20 J
MW-83-180	12/09/20	N	34	<0.2	3,600	4.7	--	--	0.61	500	6,800	<1
MW-83-180	02/23/21	N	36	<0.2	3,700	4.6	--	--	0.66	490	7,300	<1
MW-83-180	05/25/21	N	41	<0.2	3,400	4.6	--	--	0.69	470	6,900	<1
MW-83-180	08/23/21	N	37	<0.2	3,600	4.1	--	--	0.6	490	7,400	<1
MW-83-180	12/16/21	N	--	--	--	--	--	--	0.55	--	--	--
MW-83-225	02/19/20	N	34	0.04 J	5,100	5	--	--	0.62	700	11,000	<1 J
MW-83-225	05/28/20	N	31	<0.2	5,300	4.7 J	--	--	0.68 J	680	11,000	<1
MW-83-225	08/26/20	N	31	<0.2	5,000	4.5	--	--	0.64	670	11,000	<1 J
MW-83-225	12/09/20	N	30	<0.2	5,100	4.4	--	--	0.57	680	9,900	<1
MW-83-225	02/23/21	N	33	<0.2	5,200	4.6	--	--	0.75	690	10,000	<1
MW-83-225	02/23/21	FD	32	<0.2	5,100	4.5	--	--	0.73	700	11,000	<1
MW-83-225	05/25/21	N	31	<0.2	5,100	4.2	--	--	0.7	690	10,000	<1
MW-83-225	08/23/21	N	35	<0.2	5,100	4.2	--	--	0.72	710	10,000	<1
MW-83-225	12/16/21	N	--	--	--	--	--	--	0.55	--	--	--
MW-83-245	02/19/20	N	30	0.04 J	6,400	4.9	--	--	0.13	670	12,000	<1 J
MW-83-245	05/22/20	N	25	<0.2	6,700	5	--	--	0.12	670	14,000	<1
MW-83-245	08/26/20	N	24	<0.2	6,500	3.9	--	--	0.099	670	15,000 J	<1 J
MW-83-245	12/09/20	N	23	<0.2	6,600	4.1	--	--	0.18	660	12,000 J	<1
MW-83-245	02/23/21	N	29	<0.22	6,700	4.3	--	--	0.29	690	13,000	<1
MW-83-245	05/25/21	N	210	0.28	6,200	4.5	--	--	0.22	630	12,000	<1
MW-83-245	08/23/21	N	89	0.21	6,200	4	--	--	<0.1	630	12,000	<1
MW-83-245	12/16/21	N	--	--	--	--	--	--	<0.1	--	--	--
MW-84-057	01/27/20	N	86	0.11	360	1.9	--	--	9.9	210	1,100	<1 J
MW-84-057	02/19/20	N	89	0.04 J	340	1.7	--	--	11	210	1,100	<1 J
MW-84-057	03/18/20	N	84	<0.1	360	1.7	--	--	11 J	200	1,100	<10 J
MW-84-057	03/18/20	FD	85	<0.1	360	1.8	--	--	11 J	200	1,100	<1 J
MW-84-057	04/22/20	N	80	<0.1	390	1.7	--	--	10	210	1,100	<1
MW-84-057	04/22/20	FD	81	<0.1	370	1.9	--	--	9.5	200	1,100	<1
MW-84-057	05/28/20	N	77	<0.2	410	2.3 J	--	--	8.2 J	190	1,100	<1
MW-84-057	06/17/20	N	82	<0.2	430	1.9	--	--	7.6 J	180	1,200	<1
MW-84-057	07/22/20	N	78	<0.2	440	2	--	--	8.2	180	1,100	<10
MW-84-057	08/21/20	N	79	<0.2	430	2.1	--	--	8.7	170	1,200	<1
MW-84-057	09/29/20	N	51	<0.2	1,700	3	--	--	1.2	230	4,000	<1 J
MW-84-057	10/20/20	N	81	<0.2	390 J	2.1	--	--	9.1	180	1,100	<1
MW-84-057	12/10/20	N	82	<0.2	480	2	--	--	11	260	1,000	<10
MW-84-057	02/19/21	N	90	<0.22	360	2.1	--	--	11	210	1,100	<1
MW-84-057	05/24/21	N	80	<0.2	450	2.3	--	--	7.6	180	1,100	<1
MW-84-057	08/20/21	N	77	<0.2	510	2	--	--	7.4	170	1,200	<1

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-84-057	11/29/21	N	27	27	0.9	--	--	--	--	--	--	0.0018	12	--	3.7	--	--
MW-84-095	01/27/20	N	1.2	1.3	<0.1	220	0.55	250	0.25 J	0.055 J	48	0.06	6.3	12	0.88	640 J	3.7
MW-84-095	02/19/20	N	0.53	<1	0.3	220	0.82 J	120 J	0.25	<0.1 J	21 J	0.052	7.1	19 J	0.8	780	3.8
MW-84-095	03/18/20	N	1.5	1.2	<0.1	220 J	0.44	330	0.78 J	0.053 J	58	0.02	6.3	14	0.87	760	4.1
MW-84-095	04/22/20	N	2.1	2.6	<0.1	220	0.43	320	0.52	0.059 J	55	0.021	5.9	13	1	830	4.5
MW-84-095	05/28/20	N	2.1	2.2	<0.1	220	0.47	310	2	0.028	61	0.028	6.5	15 J	0.88	730	4.7
MW-84-095	05/28/20	FD	2.1	2.2	<0.1	230	0.49	300	2	0.066	59	0.027	6.8	13 J	0.95	690	4.7
MW-84-095	06/17/20	N	1.7	1.7	<0.1 J	240	0.51	300	2.60	0.055	57	0.048	7	13	0.91	790	4.7
MW-84-095	07/22/20	N	2.7	3.1	<0.1	220	0.59	290	1.20	0.048	58 J	0.023	6.4	13 J	0.92	780	4.9
MW-84-095	08/20/20	N	2.9	2.8	<0.1	220	0.72 J	310	1.20	0.83 J	67	0.018	6.5	15	0.98	860	5.2
MW-84-095	08/20/20	FD	3 J	2.7	<0.1	200	0.47 J	320	1.20	0.25 J	67	0.018	6.4	15	1	860	5
MW-84-095	09/29/20	N	2.9	3.6	<0.1	230	0.52 J	240 J	1.60 J	0.12 J	58 J	0.024	6.2	11 J	0.95	690 J	4.8
MW-84-095	10/20/20	N	3.3	3.1	<0.1 J	210	0.5	300	0.31 J	<0.02	56 J	0.026	5.2	16 J	1	730	4.5
MW-84-095	12/10/20	N	3.4	3.7	<0.1	220	0.38	270 J	1.90 J	0.084 J	64	0.028	5.3	14	0.91	750	5.2
MW-84-095	12/10/20	FD	3.4	3.6	<0.1	210	0.36	270 J	2.20 J	0.074 J	63	0.027	5	14	0.9	750	5
MW-84-095	02/19/21	N	3.3	3.7	1.1	230	0.43	260 J	0.6	<0.02	64	0.034	5.3	12	1.1	740	4.8
MW-84-095	05/24/21	N	3.3	3.5	<0.1 J	250	0.45	460 J	1.30 J	0.19 J	69 J	0.017	5.3	17 J	0.86	760 J	7.4
MW-84-095	08/20/21	N	2.6	3.5	<0.1	180	0.41	320	0.76 J	<0.02 J	54 J	<0.0005	5.4	16 J	0.9	600 J	5.1
MW-84-095	11/29/21	N	3.4	4.2	<0.1	--	--	--	--	--	--	0.0058	5.4	--	0.86	--	--
MW-84-132	01/27/20	N	<0.2	<1	<0.1	100	1.3	240	0.16 J	0.12 J	24	0.12	29	21	0.76	1,800 J	4.2
MW-84-132	02/19/20	N	0.26	<1	0.46	99	1.4 J	290 J	0.061	0.079 J	27 J	0.079	29	19 J	0.73	1,700	4.8
MW-84-132	03/18/20	N	0.5	<1	<0.1	80 J	0.97	280	0.044 J	0.043 J	30	0.054	24	20	0.76	1,600	4.9
MW-84-132	04/22/20	N	0.57	<1	<0.1	92	1.1	270	0.66	0.064 J	25	0.041	29	19	0.95	1,700	6.1
MW-84-132	05/28/20	N	0.44	1	0.32	88	1	240	0.95	0.06	28	0.035	26	22 J	0.82	1,700	6
MW-84-132	06/17/20	N	0.53	<1	0.43 J	92	1.1	260	0.054	<0.02	30	0.037	24	18	0.88	1,500	5.7
MW-84-132	07/22/20	N	0.79	1	<0.1	90	1.2	250	0.029	<0.02	29 J	0.022	28	19 J	0.88	2,000	6.2
MW-84-132	08/21/20	N	1.1	2.1	<0.1	88	0.96	230	0.035	0.034	33	0.019	29	21	0.95	1,700	6.5
MW-84-132	09/29/20	N	1.2	1.3	<0.1	84	0.88 J	250 J	0.08 J	<0.02 J	33 J	0.011	28	16 J	1.1	1,300 J	6.6
MW-84-132	10/20/20	N	1.4	1.5	<0.1 J	79	1.1	250	0.33 J	<0.02	29 J	0.013	23	23 J	1	1,600	6
MW-84-132	12/10/20	N	2	2.1	<0.1	74	1.1	200 J	0.22 J	0.17 J	26	0.0046	28	20	1.1	1,800	7.4
MW-84-132	02/19/21	N	2.3	2.8	2.4	70	1	200 J	0.053	0.025	31	0.0046	27	19	1.1	1,500	7.6
MW-84-132	05/24/21	N	2.2	3	<0.1 J	73	0.94	320 J	3.10 J	0.095 J	32 J	0.0067	23	22 J	1.2	1,500 J	7.5
MW-84-132	08/20/21	N	2.6	3.6	<0.1	76	0.83	300	0.047 J	0.026 J	33 J	<0.0005	18	18 J	0.84	1,500 J	8.2
MW-84-132	11/29/21	N	2.4	2.6	<0.1	--	--	--	--	--	--	0.00074	16	--	1.1	--	--
MW-84-193	01/27/20	N	43	39	4.9	58	1.8	180	0.16 J	0.037 J	11	0.037	46	32	<2.5	3,200 J	6.7
MW-84-193	02/19/20	N	63	56	1.5	54	1.9 J	210 J	0.16	0.031 J	11 J	0.019	47	30 J	1	2,700	7.5
MW-84-193	03/18/20	N	51	43	0.78	50 J	1.7	210	0.12 J	0.044 J	12	0.019	45	32	0.89	2,600	6.8
MW-84-193	04/22/20	N	62	61	1.2	57	1.6	210	1.70	0.17 J	9.4	0.028	48	30	<2.5	2,700	8.1
MW-84-193	05/22/20	N	42	40	<0.1	55	1.4	160	0.56 J	0.11 J	9.6 J	0.016	50	30 J	0.98	3,400 J	8.2
MW-84-193	06/17/20	N	40	39	5.3 J	57	1.7	190	0.29	<0.02	10	0.0082	49	29	1.1	2,600	8.6
MW-84-193	07/22/20	N	52	54	1.1	56	1.8	190	0.084	<0.02	10 J	0.0065	55	30 J	0.93	3,400	8.8
MW-84-193	08/20/20	N	54 J	48	1.1	54	1.1	190	0.22	0.15 J	13	0.0051	54	32	1.1	2,700	9
MW-84-193	09/29/20	N	48	45	1.5	59	1.8 J	190 J	<0.1 J	<0.02 J	12 J	0.016	54	29 J	1	2,500 J	8.1
MW-84-193	10/20/20	N	51	45	2.7 J	49	1.9	190	0.29 J	<0.02	11 J	0.0026	47	41 J	0.98	3,400	8
MW-84-193	12/10/20	N	74	64	0.81	46	1.6	150 J	0.4 J	<0.02 J	12	0.0019	47	32	1.1	2,800	8.6
MW-84-193	02/19/21	N	86	87	5.8	47	1.5	150 J	0.093	<0.02	12	0.00085	50	30	1.2	2,400	8.7
MW-84-193	05/24/21	N	52	49	<0.1 J	49	1.6	230 J	0.05 J	0.07 J	9.7 J	0.0011	51	35 J	1.2	2,700 J	9.1
MW-84-193	08/20/21	N	23	25	<0.1	40	1.5	170	0.057 J	0.021 J	6.3 J	0.0012	50	28 J	0.95	2,400 J	11
MW-84-193	11/29/21	N	14	15	2.2	--	--	--	--	--	--	0.082	58	--	1.1	--	--
MW-85-129	02/18/20	N	150	150	0.79	72 J	0.6	130	0.37 J	0.1	27	0.0034	3.1	11	9.9	280	7.6
MW-85-129	02/18/20	FD	150	150	0.81	72 J	0.59	140	0.41 J	0.084	27	0.0031	2.9	11	9.5	290	7.6
MW-85-129	05/20/20	N	130 J	120	0.51	64	0.42	110	0.34	0.069	27	0.0029	2.7	10 J	9.6	300	6.8
MW-85-129	08/21/20	N	140	140	0.76	70	0.19	130	0.17	<0.02	29	<0.0005	2.9	10	10	270	8.1
MW-85-129	12/09/20	N	140	130	0.56	69	0.47	120	0.1	<0.02	28	<0.0005	3	9.1	9.3	230	7.6

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-84-057	11/29/21	N	--	--	--	--	--	--	8.7	--	--	--
MW-84-095	01/27/20	N	54	0.15	1,700	3.1	--	--	1.1	230	3,800	<1 J
MW-84-095	02/19/20	N	55	0.1	1,700	2.9	--	--	0.98	230	3,600	<10
MW-84-095	03/18/20	N	56	<0.1	1,700	2.9	--	--	1.1 J	240	3,700	<1 J
MW-84-095	04/22/20	N	52	<0.1	1,800	2.5	--	--	2.1	250	3,900	<1
MW-84-095	05/28/20	N	49	<0.2	1,800	2.8 J	--	--	1.1 J	250	4,400	<1
MW-84-095	05/28/20	FD	54	<0.2	1,800	3.1 J	--	--	1.3 J	250	4,600	<1
MW-84-095	06/17/20	N	55	<0.2	1,800	2.9	--	--	1.1 J	250	4,600	<1
MW-84-095	07/22/20	N	50	<0.2	1,700	3.2	--	--	1.3	250	4,300	<1
MW-84-095	08/20/20	N	52	<0.2	1,700	2.6	--	--	1.4	240	4,500	<1
MW-84-095	08/20/20	FD	52	<0.2	1,800	2.4	--	--	1.2	240	4,400	<1
MW-84-095	09/29/20	N	54	<0.2	1,700	3	--	--	1.2	230	4,000	<1 J
MW-84-095	10/20/20	N	53	<0.2	1,800 J	2.6	--	--	1.2	240	4,200	<1
MW-84-095	12/10/20	N	50	<0.2	1,700	3.3	--	--	1.4	240	3,500	<1
MW-84-095	12/10/20	FD	49	<0.2	1,700	3	--	--	1.3	240	3,600	<1
MW-84-095	02/19/21	N	54	<0.2	1,800	2.9	--	--	1.3	240	3,400	<1
MW-84-095	05/24/21	N	50	<0.2	1,900	3.1	--	--	1.1	250	4,100	<1
MW-84-095	08/20/21	N	52	<0.2	1,700	2.8	--	--	1.3	230	3,900	<1
MW-84-095	11/29/21	N	--	--	--	--	--	--	1.3	--	--	--
MW-84-132	01/27/20	N	53	0.15	3,000	4.2	--	--	0.39	370	6,000	<10 J
MW-84-132	02/19/20	N	57	0.05 J	2,700	3.9	--	--	0.47	350	5,600	<1 J
MW-84-132	03/18/20	N	52	<0.1	2,600	3.1	--	--	0.59 J	340	5,400	<1 J
MW-84-132	04/22/20	N	39	<0.1	3,000	3.7	--	--	0.72	380	5,700	<1
MW-84-132	05/28/20	N	51	<0.2	2,700	3.5 J	--	--	0.8 J	340	5,800	<1
MW-84-132	06/17/20	N	51	<0.2	2,600	3.7	--	--	0.77 J	320	5,700	<1
MW-84-132	07/22/20	N	50	<0.2	2,700	3.4	--	--	0.84	340	5,700	<1
MW-84-132	08/21/20	N	50	<0.2	2,700	3.8	--	--	0.74	340	6,100	<1
MW-84-132	09/29/20	N	52	<0.2	2,500	3.5	--	--	1	310	5,400	<1 J
MW-84-132	10/20/20	N	51	<0.2	2,700 J	4	--	--	0.83	340	5,700	<1
MW-84-132	12/10/20	N	48	<0.2	3,700	3.6	--	--	0.94	480	5,500	<1
MW-84-132	02/19/21	N	49	<0.22	2,800	3.9	--	--	1	360	5,800	<1
MW-84-132	05/24/21	N	51	<0.2	2,600	3.7	--	--	0.91	320	5,100	<1
MW-84-132	08/20/21	N	51	<0.2	2,600	3.4	--	--	1.1	330	5,600	<1
MW-84-132	11/29/21	N	--	--	--	--	--	--	1.1	--	--	--
MW-84-193	01/27/20	N	46	0.07 J	4,100	4.7	--	--	1	530	8,000	<1 J
MW-84-193	02/19/20	N	44	0.03 J	4,000	4.4	--	--	1.1	550	8,400	<1 J
MW-84-193	03/18/20	N	47	<0.1	4,100	3.8	--	--	0.95 J	530	7,800	<1 J
MW-84-193	04/22/20	N	46	<0.1	4,400	3.4	--	--	1.6	560	8,300	<1
MW-84-193	05/22/20	N	43	<0.2	4,100	5	--	--	0.93	530	8,600	<1
MW-84-193	06/17/20	N	45	<0.2	4,100	4.2	--	--	0.99 J	520	8,200	<1
MW-84-193	07/22/20	N	43	<0.2	4,100	4.1	--	--	1	530	8,200	<1
MW-84-193	08/20/20	N	44	<0.2	4,000	4	--	--	1.1	520	8,400	<1
MW-84-193	09/29/20	N	45	<0.2	3,900	4.2	--	--	0.89	490	8,200	<1 J
MW-84-193	10/20/20	N	43	<0.2	3,900 J	4.1	--	--	0.95	510	8,400	<1
MW-84-193	12/10/20	N	43	<0.2	5,500	4.3	--	--	1.1	740	7,900	<1
MW-84-193	02/19/21	N	44	<0.2	4,100	3.6	--	--	1.1	530	8,200	<1
MW-84-193	05/24/21	N	48	<0.2	4,000	4.4	--	--	0.97	510	8,000	<1
MW-84-193	08/20/21	N	47	<0.2	3,900	3.7	--	--	0.84	530	7,700	<1
MW-84-193	11/29/21	N	--	--	--	--	--	--	0.93	--	--	--
MW-85-129	02/18/20	N	160	0.06 J	370	0.52	--	--	17	220	1,200	<1 J
MW-85-129	02/18/20	FD	160	0.06 J	370	<0.5	--	--	18	220	1,200	<1 J
MW-85-129	05/20/20	N	140	<0.2	380	0.62	--	--	18 J	220	1,300	<1 J
MW-85-129	08/21/20	N	160	<0.2	380	0.67	--	--	22	220	1,300	<1
MW-85-129	12/09/20	N	150	<0.2	400	0.71	--	--	22	230	1,200	<10

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-85-129	02/22/21	N	130	130	0.62	65 J	0.39	120	0.12	0.025 J	24	<0.0005	2.7	8.9 J	11	290 J	7.3
MW-85-129	05/21/21	N	120	110	0.32 J	71	0.45	140 J	0.21 J	0.22 J	27 J	<0.0005	2.8	9.9 J	9.6	260 J	7.6
MW-85-129	08/20/21	N	130	130	0.41	56	0.43	110	0.16 J	0.035 J	21 J	<0.0005	4.2	10 J	8.2	250 J	7.5
MW-85-129	11/30/21	N	130	140	0.65	--	--	--	--	--	--	<0.0005	5	--	9.6	--	--
MW-85-217	02/18/20	N	1,100	1,100	6.5	29 J	2.2	260	0.46 J	0.2	11	0.045	93	31	6.5	3,500	7
MW-85-217	05/20/20	N	870 J	850	1.1	29	1.9	160	1.90	0.025	11	0.032	97	33 J	4.8	3,300	6.2
MW-85-217	08/21/20	N	1,100	970	1.9	27	1.8	170	1.10	0.034	12	0.014	100	30	5.7	2,800	6.7
MW-85-217	12/09/20	N	1,000	930	1.6	27	1.8	170	0.24	<0.02	11	0.0051	100	30	5.4	2,200	6.5
MW-85-217	02/22/21	N	1,100	37	1.1	25 J	3	290	<0.1	<0.1	14	0.002	95	27 J	6.9	3,100 J	6.6
MW-85-217	05/21/21	N	900	850	<0.1 J	26	2	250 J	1.40 J	0.041 J	10 J	0.0054	95	32 J	5	2,500 J	6.7
MW-85-217	08/20/21	N	520	580	<0.1	25	1.7	230	1.10 J	0.032 J	8.7 J	0.0022	81	27 J	3.9	3,000 J	6.7
MW-85-217	11/30/21	N	490	500	<0.1	--	--	--	--	--	--	0.003	86	--	3.4	--	--
MW-85-237	02/18/20	N	2,100	1,900	5.5	55 J	2.5	460	0.031 J	0.045	15	0.044	77	38	2.8	4,200	4.1
MW-85-237	05/20/20	N	1,300 J	1,300	<0.1	49	2.2	250	0.11	0.027	14	0.041	83	44 J	2.6	4,000	4.3
MW-85-237	08/21/20	N	2,300	2,200	6.2	50	2.6	340	<0.1	<0.1	19	0.023	86	42	2.8	3,500	4.3
MW-85-237	12/09/20	N	2,100	2,000	<0.1	47	1.9	280	0.058	<0.02	13	0.0099	86	43	2.8	3,000	3.8
MW-85-237	02/22/21	N	2,100	2,100	<0.1	47 J	3.4	520	0.31	<0.1	21	0.0093	80	39 J	2.8	3,800 J	4
MW-85-237	05/21/21	N	390	370	<0.1 J	43	2.1	290 J	1.20 J	0.055 J	10 J	0.046	98	36 J	2.7	2,500 J	6
MW-85-237	08/20/21	N	1,400	1,500	<0.1	44	1.9	350	0.097 J	0.036 J	10 J	0.015	76	34 J	3	3,900 J	5.3
MW-85-237	11/30/21	N	240	250	<0.1	--	--	--	--	--	--	0.012	85	--	2.4	--	--
MW-86-030	02/27/20	N	<0.2	<1	5.5	140 J	0.33	83	1.80 J	1.40 J	25	0.31	8.7	5.1	<0.5	170	<1
MW-86-030	05/28/20	N	<0.2	<1	7.8	92	0.36	42	4.10	0.96	14	0.15	18	4.3 J	<0.5	210	2.1
MW-86-030	08/25/20	N	<0.2	<1	2.5	98	0.14	83 J	1.70	<0.02	30	0.16	9.2 J	5.2 J	0.74	120	<1
MW-86-030	12/01/20	N	<0.2	<1	3	110	0.19 J	89 J	1.50	0.61 J	31 J	0.34	8.2	5.2 J	<0.5	120	<1
MW-86-030	02/24/21	N	<0.2	<1	3.9	120 J	0.29	110	1.10 J	1	34	0.44	7.3	4.9 J	<0.5	180 J	<1
MW-86-030	05/18/21	N	<0.2	<1	5.1 J	99	0.22	87	0.62 J	0.47 J	29 J	0.32	12	3.6 J	1.1	170 J	<1
MW-86-030	08/18/21	N	<0.2	<1	1.6 J	87	0.28	84 J	0.15 J	0.042 J	29 J	0.063	10	4	1.1	220 J	<1
MW-86-030	08/18/21	FD	<0.2	<1	1.7 J	87	0.28	89 J	0.059 J	0.045 J	30 J	0.072	10	4.1	0.69	190 J	<1
MW-86-030	12/14/21	N	<0.2	<1	2.6	95	--	--	--	0.033 J	--	0.42	8	--	<0.5	--	--
MW-86-066	02/27/20	N	<0.2	<1	1.1	78 J	0.77	210	0.33 J	0.42 J	35	1.10	22	12	<0.5	1,500	<1
MW-86-066	05/28/20	N	<0.2	<1	1.1	80	0.75	230	0.39	0.39	49	0.76	26	13 J	<0.5	1,200	<1
MW-86-066	08/25/20	N	<0.2	<1	0.63	79	0.62	150 J	0.62	0.4	43	0.72	31 J	12 J	<0.5	950	<1
MW-86-066	12/01/20	N	<0.2	<1	2	100	1.1 J	190 J	0.25	0.23 J	57 J	1	21	14 J	<0.5	1,200	<1
MW-86-066	02/24/21	N	<0.2	<1	<0.1	86 J	0.86	240	0.13 J	0.098	46	0.79	25	13 J	<0.5	1,000 J	1.3
MW-86-066	02/24/21	FD	<0.2	<1	<0.1	83 J	0.89	240	0.12 J	0.11	48	0.77	25	16 J	<0.5	1,100 J	1.3
MW-86-066	05/18/21	N	<0.2	<1	<0.1 J	67	0.75	220	0.22 J	0.16 J	41 J	0.64	28	10 J	<0.5	1,200 J	1
MW-86-066	05/18/21	FD	<0.2	<1	<0.1 J	67	0.69	210	0.21 J	0.17 J	41 J	0.64	28	11 J	<0.5	1,100 J	1
MW-86-066	08/18/21	N	<0.2	<1	<0.1 J	76	0.83	230 J	0.034 J	0.021 J	42 J	0.72	22	12	<0.5	1,300 J	1.6
MW-86-066	12/14/21	N	<0.2	<1	<0.1	91	--	--	--	<0.02 J	--	0.76	16	--	<0.5	--	--
MW-86-120	02/27/20	N	<1	<1	<0.1	63 J	0.89	260	0.18 J	0.11 J	56	0.98	41	16	<0.5	3,100	<1
MW-86-120	05/28/20	N	<1	<1	1.3	52	0.81	260	0.79	<0.02	67	0.52	37	22 J	<0.5	2,900	1
MW-86-120	08/25/20	N	<1	1	<0.1	51	0.69	180 J	0.24	0.044	67	0.45	41 J	25 J	<0.5	3,100	1.4
MW-86-120	12/01/20	N	<1	<1	3.1	55	1.1 J	170 J	0.033	0.69 J	66 J	0.62	51	16 J	<0.5	1,900	<1
MW-86-120	02/24/21	N	<1	<1	<0.1	47 J	0.95	320	0.18 J	<0.02	68	0.45	35	16 J	<0.5	2,700 J	1.3
MW-86-120	05/18/21	N	1.1 J	1.3	<0.1 J	39	0.79	270	0.11 J	0.039 J	57 J	0.25	35	22 J	<0.5	2,400 J	1.2
MW-86-120	08/18/21	N	<1	<1	<0.1 J	36	0.93	270 J	0.21 J	0.058 J	52 J	0.26	33	16	<0.5	2,600 J	1.7
MW-86-120	12/14/21	N	<1	<1	<0.1	42	--	--	--	<0.02 J	--	0.37	33	--	<0.5	--	--
MW-86-140	02/27/20	N	<1	1.3	1.4	67 J	0.9	430	0.24 J	0.064 J	58	1.50	44	24	<0.5	4,600	<1
MW-86-140	05/22/20	N	<1	<1	<0.1	63	0.73	320	0.64 J	0.11 J	51 J	1.40	41	24 J	<0.5	3,800 J	<1
MW-86-140	08/25/20	N	<1	<1	1.4	74	1.1	250 J	0.21	0.14	60	1.10	44 J	24 J	0.59	3,900	<1
MW-86-140	12/01/20	N	<1	<1	0.93	63	1.1 J	350 J	0.066	0.088 J	79 J	1	39	28 J	<0.5	3,200	<1
MW-86-140	02/24/21	N	<1	<1	<0.1	56 J	1.2	480	0.16 J	<0.1	69	1	36	23 J	<0.5	3,100 J	<1
MW-86-140	05/18/21	N	<1	<1	<0.1 J	51	0.86	380	0.15 J	0.06 J	50 J	0.69	39	22 J	<0.5	3,900 J	<1
MW-86-140	08/18/21	N	<1	<1	<0.1 J	49	1	350 J	1.20 J	0.53 J	41 J	0.87	31	23	<0.5	2,700 J	1.3

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-85-129	02/22/21	N	150	<0.2	400	0.65	--	--	15	230	1,200	<1
MW-85-129	05/21/21	N	150	<0.2	390	0.62	--	--	18 J	230	1,300	<1
MW-85-129	08/20/21	N	130	<0.2	380	0.56	--	--	16	220	1,200	<5
MW-85-129	11/30/21	N	--	--	--	--	--	--	16	--	--	--
MW-85-217	02/18/20	N	55	0.05 J	3,600	4.8	--	--	6.9	1,000	8,200	<1 J
MW-85-217	05/20/20	N	54	<0.2	3,800	4.1	--	--	5.1 J	950	8,800	<1 J
MW-85-217	08/21/20	N	54	<0.2	3,700	4.8	--	--	7.3	950	8,600	<1
MW-85-217	12/09/20	N	54	<0.2	3,700	4.8	--	--	7.1	990	7,900	<1
MW-85-217	02/22/21	N	49	<0.2	3,800	4.7	--	--	5.7	990	8,100	<1
MW-85-217	05/21/21	N	53	<0.2	3,700	4.6	--	--	5.7 J	920	8,400	<1
MW-85-217	08/20/21	N	51	<0.2	4,000	4.3	--	--	4.5	830	7,800	<1
MW-85-217	11/30/21	N	--	--	--	--	--	--	2	--	--	--
MW-85-237	02/18/20	N	44	0.05 J	5,700	5	--	--	3.6	870	11,000	<1 J
MW-85-237	05/20/20	N	48	<0.2	5,100	3.8	--	--	3.4 J	850	11,000	<1 J
MW-85-237	08/21/20	N	43	<0.2	5,600	4.6	--	--	3.9	860	12,000 J	<1
MW-85-237	12/09/20	N	43	<0.2	5,700	4.5	--	--	4	860	11,000	<1
MW-85-237	02/22/21	N	41	<0.2	5,800	5.1	--	--	2.8	870	11,000	<1
MW-85-237	05/21/21	N	54	<0.2	4,400	4.9	--	--	2.7 J	800	9,500	<1
MW-85-237	08/20/21	N	44	<0.2	5,300	4.5	--	--	3	820	10,000	<1
MW-85-237	11/30/21	N	--	--	--	--	--	--	1.6	--	--	--
MW-86-030	02/27/20	N	310	1.1	160	1	--	--	<0.1	180	860	1.6
MW-86-030	05/28/20	N	350	1.7	120	3.4 J	--	--	--	120	760	3.4
MW-86-030	08/25/20	N	230	0.29	130	1	--	--	0.17	300	910	1.2
MW-86-030	12/01/20	N	300	0.64	150	1.4	--	--	<0.1	270	900	1.5
MW-86-030	02/24/21	N	250	0.75	140	1.4	--	--	<0.05	260	880	1.3
MW-86-030	05/18/21	N	300	0.59	130	1.8	--	--	<0.05	280	910	1.1
MW-86-030	08/18/21	N	310	0.24	120	1.4	--	--	<0.1	240	870	1.9
MW-86-030	08/18/21	FD	320	0.23	120	1.4	--	--	<0.1	250	860	2.1
MW-86-030	12/14/21	N	--	--	--	--	--	--	<0.1	--	--	1.5
MW-86-066	02/27/20	N	170	0.11	1,800	2.2	--	--	<0.1	400	4,200	<1
MW-86-066	05/28/20	N	150	0.24	2,000	2.3 J	--	--	--	420	4,400	<10
MW-86-066	08/25/20	N	160	0.21	1,900	2.2	--	--	0.11	390	4,300	<10
MW-86-066	12/01/20	N	160	<0.2	2,100	2.4	--	--	<0.1	460	4,300	<1
MW-86-066	02/24/21	N	150	0.33	1,900	2.4	--	--	<0.05	400	4,000	<1
MW-86-066	02/24/21	FD	150	0.3	1,900	2.3	--	--	<0.05	400	3,400	<1
MW-86-066	05/18/21	N	150	<0.2	1,900	2.5	--	--	0.25	410	4,100	<1
MW-86-066	05/18/21	FD	160	<0.2	1,900	2.3	--	--	0.29	400	4,000	<1
MW-86-066	08/18/21	N	150	<0.2	2,000	2	--	--	<0.1	430	4,600	<1
MW-86-066	12/14/21	N	--	--	--	--	--	--	0.53	--	--	<1
MW-86-120	02/27/20	N	96	0.06 J	3,600	3	--	--	0.29	1,000	8,600	<1
MW-86-120	05/28/20	N	88	<0.2	3,400	3.1 J	--	--	0.64 J	1,000	8,300	<1
MW-86-120	08/25/20	N	89	<0.2	3,500	3	--	--	0.83	1,000	8,400	<1
MW-86-120	12/01/20	N	100	<0.2	3,600	3.4	--	--	0.3	1,100	8,400	<1
MW-86-120	02/24/21	N	95	<0.2	3,700	2.9	--	--	0.42	1,000	8,300	<1
MW-86-120	05/18/21	N	90	<0.2	3,400	3.2	--	--	1.1	1,000	8,100	<1
MW-86-120	08/18/21	N	87	<0.2	3,500	3.1	--	--	0.67	1,000	8,200	<1
MW-86-120	12/14/21	N	--	--	--	--	--	--	0.41	--	--	<1
MW-86-140	02/27/20	N	79	0.07 J	5,200	2.4	--	--	0.17	1,000	12,000	<1
MW-86-140	05/22/20	N	67	<0.2	4,900	3.5	--	--	0.48	950	11,000	<1
MW-86-140	08/25/20	N	82	<0.2	4,700	3	--	--	0.52	930	11,000 J	<1
MW-86-140	12/01/20	N	74	<0.2	5,300	3.4	--	--	0.58	1,000	11,000	<1
MW-86-140	02/24/21	N	75	<0.2	5,300	3.6	--	--	0.48	960	11,000	<1
MW-86-140	05/18/21	N	83	<0.2	4,600	3	--	--	0.82	920	10,000	<1
MW-86-140	08/18/21	N	97	0.79	4,000	3.1	--	--	0.15	840	8,600	<1

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-86-140	12/14/21	N	<1	<1	<0.1	55	--	--	--	<0.02 J	--	0.73	34	--	<0.5	--	--
MW-87-109	01/27/20	N	28	27	0.74	98	0.44	90	1.30 J	1 J	13	0.032	10	7.8	6.8	290	3.2
MW-87-109	02/25/20	N	24	23	0.6	110	0.4	120	1.70 J	0.055 J	16	0.00074	9.4	9.3 J	5.4	330	3.2
MW-87-109	03/18/20	N	26	25	0.62	98 J	0.36	110	0.39 J	0.062 J	16	0.0022	9	9	5.9	310	3.1
MW-87-109	04/23/20	N	20	19	0.54	150	0.41	130	2.60	0.22 J	19	0.0074	7.8	10	4.1	340	2.8
MW-87-109	05/29/20	N	21	22	0.37	130	0.32	120	3.70	0.12	21	0.0049	8.3	10	4.6	350	3.1
MW-87-109	06/15/20	N	22	34	0.48 J	120	0.37	120	1	0.12	18	0.0049	8.6	12 J	4.7	340	3.1
MW-87-109	07/22/20	N	24	25	0.68	120	0.39	120	2.10	0.12	18 J	0.0072	8.6	9.4 J	4.7	340	3.4
MW-87-109	08/26/20	N	27	27	0.53	140	0.61 J	97	0.62 J	0.32 J	19 J	0.0011	8.2	10 J	5.7	340 J	3.6
MW-87-109	09/30/20	N	24	25	0.3	140	0.38	120	0.87	0.04 J	20 J	0.00072	8	10	5.2 J	340	3.3
MW-87-109	10/20/20	N	25	25	0.62 J	140	0.38	110	1.80 J	0.53 J	16 J	0.014	8.3	11 J	5.9	350	3.1
MW-87-109	12/17/20	N	28	27	0.43	120	0.23	120	1	<0.02	16 J	0.0044	8.3	8.8 J	5.3	320	3.4
MW-87-109	02/25/21	N	24	24	0.32	150	0.34	130	1.60 J	<0.02	18	0.0016	7.7	12 J	4.5	340 J	3.2
MW-87-109	05/20/21	N	33 J	32	0.4	120	0.33	140	0.13 J	<0.02	17 J	<0.0005	8	11 J	5.2	330 J	3.4
MW-87-109	08/23/21	N	27	28	<0.1	120	0.32	120	0.24 J	0.039 J	17 J	0.00092	6.8	10 J	4.1	290	3.5
MW-87-109	11/30/21	N	18	20	<0.1	--	--	--	--	--	--	<0.0005	5.5	--	2.9	--	--
MW-87-139	01/27/20	N	9.5	8.3	<0.1	270	0.68	370	0.038 J	<0.02	66	0.0072	4.4	16	0.89	800 J	3.2
MW-87-139	02/18/20	N	6.6	6	<0.1	260 J	<0.5	410	<0.1	<0.1	67	0.0072	5.4	17	0.86	1,200	3.7
MW-87-139	03/18/20	N	7.3	6.3	<0.1	250 J	0.63	430	0.035 J	<0.02	77	0.0027	4.7	16	0.85	950	3
MW-87-139	04/23/20	N	4.8	4.2	<0.1	250	0.8	430	0.85	0.068 J	72	0.037	5.2	16	0.9	1,000	3.1
MW-87-139	05/29/20	N	6.2	6.8	0.42	170	0.33	220	0.69	0.08	49	0.013	9.9	30	0.59	740	5.5
MW-87-139	06/15/20	N	6.6	6.5	<0.1 J	250	0.6	410	0.12	0.09	73	0.0021	5.1	16 J	0.92	990	3.3
MW-87-139	07/22/20	N	5.9	6.5	<0.1	260	0.63	410	1.20	0.051	72 J	0.034	5.4	16 J	0.9	940	3.4
MW-87-139	08/26/20	N	9.7	9.4	<0.1	280	0.64 J	330	0.89 J	0.24 J	91 J	<0.0005	5.2	18 J	0.98	1,200 J	3.9
MW-87-139	09/30/20	N	9.9	10	<0.1	270	0.64	400	0.16	0.04 J	83 J	0.0011	4.9	17	0.95 J	1,000	3.7
MW-87-139	10/20/20	N	<0.2	1.3	0.34 J	200	0.45	280	0.35 J	0.2 J	49 J	0.33	2.9	35 J	<0.5	550	<1
MW-87-139	12/17/20	N	10	9.9	<0.1	250	0.65	430	0.17	0.078	74 J	0.0041	4.7	16 J	0.72	960	3.8
MW-87-139	02/26/21	N	9.5	9.4	<0.1	280	0.64	370	0.059 J	<0.02	79	<0.0005	4.7	19 J	0.87	1,000	3.2
MW-87-139	05/20/21	N	12 J	11	<0.1	260	0.47	570	0.099 J	<0.02	80 J	<0.0005	4.2	20 J	0.88	860 J	3.2
MW-87-139	08/23/21	N	11	11	<0.1	260	0.44	490	0.14 J	0.026 J	74 J	0.0032	3.9	19 J	0.71	680	3.7
MW-87-139	11/30/21	N	9.8	9.9	<0.1	--	--	--	--	--	--	<0.0005	4.7	--	1.1	--	--
MW-87-192	01/27/20	N	0.44	<1	<0.1	91	1.3	220	0.59 J	0.35 J	24	0.046	27	18	0.96	2,000 J	5.7
MW-87-192	02/18/20	N	0.58	<1	<0.1	95 J	1.4	310	0.14 J	0.049	28	0.026	26	19	0.94	1,900	6.5
MW-87-192	03/18/20	N	0.57	<1	<0.1	87 J	1.1	260	0.04 J	0.089 J	27	0.03	26	18	1	1,700	5.7
MW-87-192	04/22/20	N	0.76	<1	<0.1	90	1.1	260	0.082	0.021 J	24	0.016	25	16	1.2	1,700	6.5
MW-87-192	05/29/20	N	0.66	<1	<0.1	90	1.1	220	0.035	<0.02	30	0.014	25	18	1.1	1,700	6.4
MW-87-192	06/17/20	N	0.54	<1	<0.1 J	92	1.2	240	0.091	<0.02	25	0.017	26	16	0.93	1,600	6.3
MW-87-192	07/22/20	N	0.75	1.2	<0.1	93	1.2	240	0.056	<0.02	26 J	0.015	27	17 J	1.1	1,900	6.7
MW-87-192	08/26/20	N	1	1.1	<0.1	85	1.3 J	180	0.075 J	0.027 J	31 J	0.011	25	22 J	1	2,400 J	6.7
MW-87-192	09/30/20	N	0.77	1.2	<0.1	84	1.4	220	0.18	0.039 J	29 J	0.0064	27	18	1.8 J	1,700	6.8
MW-87-192	10/20/20	N	0.87	<1	<0.1 J	82	1.1	230	0.43 J	0.17 J	24 J	0.0086	25	23 J	1.1	2,000	6.4
MW-87-192	12/17/20	N	1.1	1.3	<0.1	69	1.2	260	0.021	<0.02	26 J	0.0033	26	17 J	1.1	1,600	7.1
MW-87-192	02/26/21	N	1.1	1.4	<0.1	72	1.3	200	0.04 J	0.033	29	0.0015	26	16 J	1.1	1,900	7.3
MW-87-192	05/20/21	N	1.5 J	1.5	<0.1	71	1.1	290	0.09 J	0.059	28 J	<0.0005	23	21 J	1.1	1,600 J	7.5
MW-87-192	08/23/21	N	1.4	2.1	<0.1	73	0.97	260	0.061 J	0.045 J	25 J	<0.0005	20	21 J	2.6	1,500	8.2
MW-87-192	11/30/21	N	1.7	2.2	<0.1	--	--	--	--	--	--	<0.0005	22	--	1.3	--	--
MW-87-275	01/27/20	N	<1	<1	3.8	76	1.5	230	<0.02 J	<0.02	19	0.02	42	24	1	2,700 J	4
MW-87-275	02/18/20	N	<1	<1	0.79	83 J	1.6	300	0.071 J	<0.02	21	0.0092	41	23	0.85	2,300	4.2
MW-87-275	03/18/20	N	<1	<1	<0.1	71 J	1.6	280	0.039 J	0.15 J	23	0.093	41	23	0.66	2,200	3.3
MW-87-275	04/22/20	N	<1	<1	<0.1	72	1.4	270	0.16	0.066 J	19	0.0069	43	22	1	2,300	3.9
MW-87-275	05/29/20	N	<1	<1	<0.1	70	1.7	300	0.11	<0.1	28	0.017	42	26	0.82	2,400	3.9
MW-87-275	06/17/20	N	0.86	1.1	3.7 J	70	1.5	240	0.13	<0.02	20	0.0062	43	22	1.1	2,300	4.2
MW-87-275	07/22/20	N	0.85	1.1	<0.1	74	1.6	240	0.1	<0.02	20 J	0.021	47	20 J	0.9	1,900	4.3
MW-87-275	07/22/20	FD	<1	1.1	<0.1	74	1.6	240	0.06	<0.02	20 J	0.023	45	21 J	0.92	2,700	4.2

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-86-140	12/14/21	N	--	--	--	--	--	--	0.78	--	--	<1
MW-87-109	01/27/20	N	77	0.06 J	530	2.4	--	--	7.7	180	1,300	<1 J
MW-87-109	02/25/20	N	77	0.04 J	570	2.1	--	--	7.8	170	1,400	<1
MW-87-109	03/18/20	N	77	<0.1	530	2.2	--	--	9.4 J	170	1,400	<1 J
MW-87-109	04/23/20	N	73	0.03 J	680	1.9	--	--	6.3	170	1,600	<1
MW-87-109	05/29/20	N	79	<0.2	680	1.9	--	--	6.9	170	1,800	<1
MW-87-109	06/15/20	N	79	<0.2	630	2.2	--	--	7.2 J	160	1,600	<1
MW-87-109	07/22/20	N	72	<0.2	610	2.1	--	--	7.9	160	1,600	<1
MW-87-109	08/26/20	N	73	<0.2	610	2.2	--	--	7.9 J	160	1,600	<1 J
MW-87-109	09/30/20	N	68	<0.2	660	2	--	--	7.3	160	1,800	<1
MW-87-109	10/20/20	N	73	<0.2	590 J	2.6	--	--	7.6	170	1,500	<1
MW-87-109	12/17/20	N	74	0.35	580	2.3	--	--	8.5	170	1,400	<1
MW-87-109	02/25/21	N	71	<0.2	710	2.3	--	--	7.3	170	1,500	<1
MW-87-109	05/20/21	N	74	<0.2	610	2.6	--	--	6.3	170	1,400	<10
MW-87-109	08/23/21	N	71	<0.2	610	2.3	--	--	8.5	170	1,600	<1
MW-87-109	11/30/21	N	--	--	--	--	--	--	5.1	--	--	--
MW-87-139	01/27/20	N	49	0.06 J	2,200	2.6	--	--	1.2	330	5,000	<1
MW-87-139	02/18/20	N	48	0.07 J	2,200	2.7	--	--	1.1	350	5,100	<1 J
MW-87-139	03/18/20	N	48	<0.1	2,200	2.3	--	--	1.1 J	340	4,900	<1 J
MW-87-139	04/23/20	N	46	0.33	2,500	2.5	--	--	1.3	360	5,000	<1
MW-87-139	05/29/20	N	92	<0.2	1,500	2.1	--	--	1.2	250	3,600	<1
MW-87-139	06/15/20	N	50	<0.2	2,400	2.6	--	--	1.2 J	340	5,400	<1
MW-87-139	07/22/20	N	46	<0.2	2,300	2.5	--	--	1.4	350	5,500	<1
MW-87-139	08/26/20	N	47	<0.2	2,200	2.4	--	--	1.2 J	350	5,800	<1 J
MW-87-139	09/30/20	N	48	<0.2	2,200	2.6	--	--	1.2	340	5,400	<1
MW-87-139	10/20/20	N	120	0.44	1,400 J	2.1	--	--	0.11	220	3,700	<1
MW-87-139	12/17/20	N	50	0.3	2,100	2.3	--	--	1.2	350	4,700	<1
MW-87-139	02/26/21	N	44	<0.2	2,300	2.7	--	--	1.3	340	4,200	<1
MW-87-139	05/20/21	N	46	<0.2	2,100	2.8	--	--	1.1	340	4,400	<1
MW-87-139	08/23/21	N	49	<0.2	2,200	2.4	--	--	1.3	360	5,400	<1
MW-87-139	11/30/21	N	--	--	--	--	--	--	1.3	--	--	--
MW-87-192	01/27/20	N	50	0.05 J	2,800	3.9	--	--	0.66	340	5,500	<1
MW-87-192	02/18/20	N	49	0.05 J	2,700	3.7	--	--	0.79	340	5,700	<1 J
MW-87-192	03/18/20	N	47	<0.1	2,800	3.1	--	--	0.73 J	340	5,700	<1 J
MW-87-192	04/22/20	N	44	<0.1	2,800	3	--	--	0.88	350	5,400	<1
MW-87-192	05/29/20	N	45	<0.2	2,700	3.4	--	--	0.7	330	5,700	<1
MW-87-192	06/17/20	N	50	<0.2	2,800	3.7	--	--	0.7 J	340	6,200	<1
MW-87-192	07/22/20	N	48	<0.2	2,700	3.6	--	--	0.78	340	5,800	<1
MW-87-192	08/26/20	N	48	<0.2	2,600	3.3	--	--	0.86 J	330	5,900	<1 J
MW-87-192	09/30/20	N	47	<0.2	2,700	3.7	--	--	0.87	340	5,700	<1
MW-87-192	10/20/20	N	55	<0.2	2,800 J	3.7	--	--	0.81	340	5,700	<1
MW-87-192	12/17/20	N	47	<0.2	2,700	3.1	--	--	0.94	340	5,300	<1
MW-87-192	02/26/21	N	44	<0.2	2,800	3.7	--	--	0.94	340	5,400	<1
MW-87-192	05/20/21	N	47	<0.2	2,600	4	--	--	0.98	330	5,100	<1
MW-87-192	08/23/21	N	48	<0.2	2,700	3.5	--	--	1	330	5,700	<1
MW-87-192	11/30/21	N	--	--	--	--	--	--	1.1	--	--	--
MW-87-275	01/27/20	N	44	0.04 J	3,500	4.5	--	--	0.77	430	7,100	<1
MW-87-275	02/18/20	N	22	0.05 J	3,400	4.4	--	--	0.59	450	6,800	<1 J
MW-87-275	03/18/20	N	43	<0.1	3,600	4.2	--	--	0.59 J	460	7,400	<1 J
MW-87-275	04/22/20	N	29	<0.1	3,600	4.1	--	--	0.69	470	7,300	<1
MW-87-275	05/29/20	N	42	<0.2	3,500	4.7	--	--	0.73	450	8,000	<1
MW-87-275	06/17/20	N	46	<0.2	3,500	4	--	--	0.7 J	440	7,600	<50
MW-87-275	07/22/20	N	42	<0.2	3,400	4.4	--	--	0.77	440	7,700	<1
MW-87-275	07/22/20	FD	40	<0.2	3,400	4.5	--	--	0.82	440	7,600	<1

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-87-275	08/26/20	N	<1	1	<0.1	79	1.4 J	180	0.14 J	0.052 J	23 J	0.026	48	27 J	0.87	2,800 J	4.4
MW-87-275	08/26/20	FD	<1	<1	<0.1	81	1.4 J	180	0.13 J	<0.02	23 J	0.026	48	24 J	0.94	2,200 J	4.3
MW-87-275	09/30/20	N	<1	<1	<0.1	71	1.5	230	0.12 J	<0.02 J	22 J	0.023	46	24	2.3 J	2,300	4.3
MW-87-275	09/30/20	FD	<1	<1	<0.1	71	1.4	230	0.17 J	0.095 J	21 J	0.023	45	22	1.3 J	2,100	4.3
MW-87-275	10/20/20	N	0.95	1.1	0.82 J	66	1.4	230	0.13 J	<0.02	19 J	0.0042	41	27 J	1	2,400	3.9
MW-87-275	10/20/20	FD	0.93	1.1	0.96 J	64	1.5	230	0.3 J	<0.02	20 J	0.0044	42	28 J	0.97	2,400	3.9
MW-87-275	12/17/20	N	1.1	1.3	<0.1	61	1.5	270	0.029	<0.02	21 J	0.003	45	22 J	1	2,000	4.5
MW-87-275	02/26/21	N	1	1.5	<0.1	60	1.6	200	0.063 J	0.061	23	0.00061	43	20 J	1	2,100	4.1
MW-87-275	05/20/21	N	1.1 J	1.2	<0.1	60	1.4	290	0.02 J	<0.02	20 J	0.0072	44	26 J	0.91	2,100 J	4.6
MW-87-275	08/23/21	N	<1	1.5	<0.1	58	1.3	270	0.21 J	0.025 J	19 J	0.028	41	19 J	0.72	1,800	5.1
MW-87-275	11/30/21	N	1.3	1.8	<0.1	--	--	--	--	--	--	<0.0005	43	--	1.1	--	--
MW-88-107	01/29/20	N	49	50	1.6	55	0.5	72	0.2	0.034 J	12 J	0.015	12	10	4.4	300	8.6
MW-88-107	02/25/20	N	59	54	1.5	53	0.43	70	0.29 J	0.044 J	9.6	0.015	10	9.6 J	4.4	290	9.9
MW-88-107	05/28/20	N	69	70	1.5	57	0.41	77	0.27	<0.02	12	0.0077	10	10 J	4	310	8.6
MW-88-107	08/19/20	N	76	75	1.6	51	0.5	67 J	1.50	0.095 J	11	0.009	11	9.6	4	310	9
MW-88-107	12/10/20	N	89	88	1.9	47	0.3	61 J	0.26 J	0.088 J	9.3	0.0027	8.7	9.4	4.5	260	13
MW-88-107	02/24/21	N	81	80	1.6	54 J	0.49	75	0.42 J	0.021	12	0.00074	9.2	9 J	3.9	290 J	12
MW-88-107	05/19/21	N	120	110	1.5	51	0.4	95	0.076 J	0.024	12 J	0.00066	8.7	11 J	4.3	280	11
MW-88-107	08/20/21	N	120	130	3.8 J	50	0.42	100	0.17 J	0.024 J	14 J	<0.0005	9.4	13 J	3.8	330 J	14
MW-88-107	08/20/21	FD	120	130	1 J	50	0.42	100	0.22 J	0.072 J	14 J	<0.0005	9.3	14 J	4.4	270 J	13
MW-88-107	12/08/21	N	130	140	1.7	--	--	--	--	--	--	0.002 J	--	--	--	--	--
MW-89-183	02/19/20	N	0.89	1.7	<0.1	180	0.79 J	400 J	0.23	0.078 J	66 J	0.0021	7.8	15 J	1.9	1,100	3.1
MW-89-183	05/20/20	N	0.76 J	<1	<0.1	160	0.72	270	1.40	0.052	65	0.004	10	16 J	2.7	990	3.5
MW-89-183	08/19/20	N	0.83	1.3	<0.1	150	0.73	290 J	0.52	0.048 J	64	0.0019	9.5	15	2.7	1,200	4
MW-89-183	12/10/20	N	0.72	1.1	<0.1	130	0.66	300 J	0.38 J	0.075 J	66	0.016	8.1	15	2.4	1,100	3.6
MW-89-183	02/24/21	N	0.64	2.1	<0.1	150 J	0.78	420	0.87 J	0.072	75	0.0071	7.4	14 J	2.2	1,500 J	3.6
MW-89-183	05/19/21	N	1	1.4	<0.1	120	0.79	400	0.1 J	<0.02	59 J	<0.0005	9.7	16 J	3.1	1,100	3.9
MW-89-183	08/25/21	N	0.93	1.5	<0.1	130	0.63	310	0.32 J	0.031 J	48	<0.0005 J	8.3	21 J	2.8	1,300	4.3
MW-89-183	12/06/21	N	0.98	1.2 J	<0.1	--	--	--	--	--	--	<0.0005 J	7	--	2.5	--	--
MW-89-273	02/19/20	N	0.86	1.7	4	32	1.4 J	140 J	0.15	0.058 J	7.9 J	0.0017	43	17 J	3.3	1,500	13
MW-89-273	05/20/20	N	0.58 J	1.9	3.3	36	1.2	100	2.80	0.057	8.6	0.0039	42	23 J	3.5	1,600	14
MW-89-273	08/19/20	N	0.61	1	3.5	32	1.2	100 J	0.03	0.025 J	8.6	<0.0005	39	18	3.9	1,600	17
MW-89-273	12/10/20	N	0.47	<1	3.3	30	1.1	100 J	0.52 J	0.064 J	8.8	0.0008	35	18	3.5	1,400	16
MW-89-273	02/24/21	N	0.43	<1	3.1	31 J	1.2	140	0.72 J	<0.02	8.2	0.00084	36	18 J	3.5	1,200 J	16
MW-89-273	05/19/21	N	0.58	<1	3	29	1.1	150	0.045 J	<0.02	7.7 J	0.00058	34	17 J	3.6	1,600	16
MW-89-273	08/25/21	N	0.51	<1	1.2	32	0.92	120	0.08 J	0.064 J	6.1	<0.0005 J	33	26 J	3.7	1,600	17
MW-89-273	12/06/21	N	0.52	1.4 J	3.5	--	--	--	--	--	--	0.0018 J	32	--	3.7	--	--
MW-90-031	02/25/20	N	<1	1.6	<0.1	120	2.1	360	9.30 J	9.70 J	250	0.35	16	19 J	0.68	3,600	2.2
MW-90-031	05/26/20	N	<1	<1	3.7 J	97	1.4	300	8.80 J	8.80 J	220 J	0.3	14 J	17 J	<0.5	3,600	1.9
MW-90-031	08/18/20	N	<1	<1	<0.1	100	1.5	210	11 J	6.90 J	180 J	0.3	16	16	0.56	2,900	2.3
MW-90-031	12/02/20	N	<1	<1	3.7	110	3.4 J	270 J	10	9.80 J	280 J	0.32	17	17 J	0.58	2,600	2.2
MW-90-031	02/17/21	N	<1	<1	<0.1	100	1.5	240	8.70 J	8.90 J	250	0.3	16	17 J	<0.5	3,400	2.3
MW-90-031	05/25/21	N	<1	<1	<0.1 J	88	1.7	520 J	8 J	8.80 J	250 J	0.26	16	23 J	<0.5	2,300 J	2.1
MW-90-031	08/18/21	N	<1	<1	<0.1 J	73	1.7	350 J	6.70 J	7.10 J	190 J	0.27	13	16	<0.5	2,900 J	2.8
MW-90-031	12/08/21	N	<1	<1	<0.1	97	--	--	--	7	--	0.25	18	--	<0.5	--	--
MW-91-045	01/28/20	N	<0.2	<1	3.6 J	320 J	0.54	85 B	0.45	0.27 J	32 J	0.27 J	9.8 J	8.5 J	<0.5	480	<1
MW-91-045	02/26/20	N	<0.2	<1	5.4	200 J	0.61	65	0.41 J	0.14 J	20	0.17	9.8	7 J	<0.5	440	<1
MW-91-045	05/19/20	N	<0.2	<1	6.1	150	0.43	45	0.71 J	0.13 J	15	0.12	10	7.3 J	<0.5	440	<1
MW-91-045	05/19/20	FD	<0.2	<1	5.8	140	0.46	48	2.50 J	0.073 J	16	0.12	10	6.9 J	<0.5	450	<1
MW-91-045	08/20/20	N	<0.2 J	<1	6.1	200	0.52	68	0.19	0.12 J	27	0.19	8.9	6.9	<0.5	410	<1
MW-91-045	12/08/20	N	<0.2	<1	6.9	150	0.6	46	0.68 J	0.095 J	17	0.14	9.1	4.1	<0.5	300 J	1.5
MW-91-045	02/23/21	N	<0.2	<1	6.4	120	0.44	40 J	0.13	0.038 J	13 J	0.11	7.5	4.2 J	0.82	330	2
MW-91-045	05/26/21	N	<0.2	<1	6.5	100	0.59	37	0.49 J	<0.02	13 J	0.088	9.2 J	4.3 J	<0.5	290	1.7
MW-91-045	06/08/21	N	<0.2	<10	<10	96	--	42	--	--	13.5	<0.1	<20	4.03	<10	285	<10

Appendix B
January 2020 to December 2021 Analytical Resul
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Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-87-275	08/26/20	N	48	<0.2	3,400	4.2	--	--	0.67 J	430	7,700	<1 J
MW-87-275	08/26/20	FD	45	<0.2	3,400	4	--	--	0.69 J	430	7,500	<1 J
MW-87-275	09/30/20	N	44	<0.2	3,400	4.3	--	--	0.74	440	7,800	<50
MW-87-275	09/30/20	FD	45	<0.2	3,500	3.7	--	--	0.64	440	7,400	<1
MW-87-275	10/20/20	N	44	<0.2	3,400 J	4.1	--	--	0.78	440	7,600	<1
MW-87-275	10/20/20	FD	47	<0.2	3,400 J	4.3	--	--	0.73	440	7,400	<1
MW-87-275	12/17/20	N	46	<0.2	3,400	4.3	--	--	0.83	440	7,300	<1
MW-87-275	02/26/21	N	39	<0.2	3,300	4	--	--	0.8	430	6,400	<1
MW-87-275	05/20/21	N	45	<0.2	3,400	4.6	--	--	0.79	460	7,100	<1
MW-87-275	08/23/21	N	47	<0.2	3,700	4.1	--	--	0.76	460	7,500	<1
MW-87-275	11/30/21	N	--	--	--	--	--	--	1	--	--	--
MW-88-107	01/29/20	N	140	<0.1	350	0.96	--	--	9.1	170	1,000	<1
MW-88-107	02/25/20	N	140	0.05 J	360	0.81	--	--	10	170	1,100	<1
MW-88-107	05/28/20	N	140	<0.2	380	1 J	--	--	10 J	180	1,100	<1
MW-88-107	08/19/20	N	140	<0.2	360	1.1	--	--	11 J	170	1,100	<1
MW-88-107	12/10/20	N	140	<0.2	350	1.1	--	--	11	170	1,100	<1
MW-88-107	02/24/21	N	130	<0.2	380	1.2	--	--	10	170	1,100	<1
MW-88-107	05/19/21	N	130	<0.2	420	1.1	--	--	11	180	1,200	<1
MW-88-107	08/20/21	N	130	<0.2	490	1	--	--	12	200	1,300	<1
MW-88-107	08/20/21	FD	120	<0.2	490	1	--	--	12	200	1,300	<1
MW-88-107	12/08/21	N	--	--	--	--	--	--	--	--	--	--
MW-89-183	02/19/20	N	55	0.08 J	2,100	2.9	--	--	2.2	460	4,700	<1 J
MW-89-183	05/20/20	N	50	<0.2	2,100	3.4	--	--	2.6	490	5,100	<10 J
MW-89-183	08/19/20	N	51	<0.2	2,100	3	--	--	3.3 J	480	5,200	<1
MW-89-183	12/10/20	N	51	<0.2	2,100	3.6	--	--	2.8	500	4,300	<1
MW-89-183	02/24/21	N	53	<0.2	2,100	3.4	--	--	2.6	480	4,400	<1
MW-89-183	05/19/21	N	53	<0.2	2,000	3.8	--	--	2.9	490	4,400	<1
MW-89-183	08/25/21	N	50	<0.2	2,100	3.2	--	--	2.7 J	490	5,000	<1
MW-89-183	12/06/21	N	--	--	--	--	--	--	2.8	--	--	--
MW-89-273	02/19/20	N	63	0.06 J	2,000	4.8	--	--	2.9	470	4,400	<1 J
MW-89-273	05/20/20	N	58	<0.2	2,100	4.5	--	--	2.1 J	490	4,500	<1 J
MW-89-273	08/19/20	N	55	<0.2	2,100	4.6	--	--	2.8 J	480	4,600	<1
MW-89-273	12/10/20	N	57	<0.2	2,100	5.1	--	--	3	490	4,500	<1
MW-89-273	02/24/21	N	57	<0.2	2,100	5.6	--	--	2.7	480	4,500	<1
MW-89-273	05/19/21	N	62	<0.2	2,100	5	--	--	2.8	480	4,200	<1
MW-89-273	08/25/21	N	59	<0.2	2,100	4.8	--	--	2.8 J	460	4,300	<1
MW-89-273	12/06/21	N	--	--	--	--	--	--	2.7	--	--	--
MW-90-031	02/25/20	N	820	8.9	4,400	1.6	--	--	0.082	1,600	11,000	1.7
MW-90-031	05/26/20	N	830	9.7	3,900	1.7	--	--	0.14	1,500	10,000	1.5
MW-90-031	08/18/20	N	810	9.4	3,900	1.7	--	--	0.094	1,500	9,900	1.7
MW-90-031	12/02/20	N	870	10	4,100	2.1	--	--	<0.1	1,600	9,800	2
MW-90-031	02/17/21	N	910	13	4,600	1.7	--	--	0.11	1,700	10,000	1.7
MW-90-031	05/25/21	N	840	9	3,400	1.5	--	--	<0.05	1,500	8,600	<20
MW-90-031	08/18/21	N	820	9.2	3,300	1.6	--	--	<0.1	1,500	8,200	2.5
MW-90-031	12/08/21	N	--	--	--	--	--	--	<0.1	--	--	1.8
MW-91-045	01/28/20	N	180	0.16	810	2.7	--	--	0.17	120	1,700	<1 J
MW-91-045	02/26/20	N	170	<0.1	610	2.9	--	--	0.1	140	1,400	<1
MW-91-045	05/19/20	N	160	<0.2	470	2.7	--	--	<0.05	130	1,200	<1
MW-91-045	05/19/20	FD	150	<0.2	470	2.7	--	--	<0.05	130	1,200	<1
MW-91-045	08/20/20	N	170	<0.2	580	2.6	--	--	<0.05	120	1,400	<1
MW-91-045	12/08/20	N	160	<0.2	450	3	--	--	0.53	110	1,100	<1
MW-91-045	02/23/21	N	150	<0.2	390	3.2	--	--	0.44	110	960	<1
MW-91-045	05/26/21	N	150	<0.2	350	3.5	--	--	0.19	100	890	<1
MW-91-045	06/08/21	N	--	--	391	2.81	--	--	<0.1	113	986	--

Appendix B
January 2020 to December 2021 Analytical Results
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Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-91-045	08/24/21	N	<0.2	<1	5.1	110	0.44	36	0.51 J	<0.02 J	13	0.089 J	9.4	5.5 J	<0.5	310	2.1
MW-91-045	12/14/21	N	<0.2	<1	7 J	--	--	--	--	--	--	0.144	<10 J	--	<10 J	--	--
MW-91-120	01/28/20	N	4.4	6.8	1 J	36 J	1.1	210 B	0.46	0.083 J	26 J	0.26 J	16 J	13 J	0.99	2,400	<1
MW-91-120	02/26/20	N	<0.2	<1	<0.1	35 J	1.4	230	0.82 J	0.068 J	38	0.48	23	11 J	<0.5	2,000	<1
MW-91-120	05/19/20	N	<0.2	2	<0.1	43	1.1	220	0.94 J	0.076 J	80	1.40	26	15 J	<0.5	2,500	1.3
MW-91-120	08/20/20	N	<0.2	<1	<0.1	41	1.2	200	0.058	<0.02 J	100	1.80	32	15	<0.5	1,900	2
MW-91-120	12/08/20	N	2.3	2.4	<0.1	33	1.1	190	0.055 J	<0.02	56	0.35	14	14	<0.5	1,800 J	<1
MW-91-120	02/23/21	N	<0.2	1.8	<0.1	31	1	230 J	0.27	0.054 J	37 J	0.24	21	13 J	<0.5	2,300	<1
MW-91-120	05/26/21	N	<0.2	<1	<0.1	33	1.3	180	1.10 J	<0.02	87 J	1.10	23 J	14 J	<0.5	1,900	2.1
MW-91-120	06/08/21	N	<1	<10	<10	31.5	--	203	--	--	82.8	1.13	<20	11.2	<10	1,840	<10
MW-91-120	08/24/21	N	<0.2	<1	<0.1	33	0.94	190	0.064 J	<0.02 J	67	1 J	25	18 J	<0.5	2,100	1.7
MW-91-120	12/14/21	N	7.67	<10	<10	--	--	--	--	--	--	0.162	<100 J	--	<100 J	--	--
MW-91-170	01/28/20	N	1.3	1.8	3.5 J	64 J	1.3	120 B	0.13	0.16 J	5.4 J	0.2 J	190 J	17 J	<2.5	3,200	<1
MW-91-170	02/26/20	N	<1	3.6	<0.1	55 J	1.7	140	0.48 J	0.24 J	4.6	0.14	180	16 J	0.81	3,400	1.1
MW-91-170	02/26/20	FD	<1	3.4	<0.1	56 J	1.6	130	0.73 J	0.22 J	4.2	0.14	180	16 J	0.78	3,300	1
MW-91-170	05/19/20	N	<0.2	<1	<0.1	67	1.2	130	0.26 J	0.061 J	5.8	0.27	120	17 J	<0.5	3,600	<1
MW-91-170	08/20/20	N	<0.2	<1	<0.1	66	1.3	130	0.057	<0.02 J	7.5	0.28	110	16	<0.5	2,200	<1
MW-91-170	12/08/20	N	2.1	2.5	<0.1	62	1.4	120	0.071 J	0.026 J	6.3	0.26	170	20	<0.5	2,500 J	<1
MW-91-170	02/23/21	N	1.6	2	<0.1	48	2.4	200 J	0.51	<0.1	6.8 J	0.14	180	14 J	0.95	2,900	1.4
MW-91-170	05/26/21	N	<1	<1	<0.1	55	1.6	130	1.60 J	0.041	6.3 J	0.31	110 J	16 J	0.56	2,400	1.1
MW-91-170	06/08/21	N	<1	<10	<10	51.9	--	161	--	--	6.72	0.261	80.5	13.2	<10	2,550	<10
MW-91-170	08/24/21	N	<1	<1	<0.1	55	1	150	0.14 J	0.2 J	5.1	0.27 J	94	24 J	<0.5	2,900	1.1
MW-91-170	12/14/21	N	1.66	<10	<10	--	--	--	--	--	--	0.256	130 J	--	<100 J	--	--
MW-91-320	01/28/20	N	<1	<1	<0.5 J	190 J	3.2	310 B	0.55	0.53 J	27 J	0.78 J	39 J	64 J	<2.5	7,600	<1
MW-91-320	02/26/20	N	<1	3.1	3.1	160 J	3.6	350	0.82 J	0.59 J	24	0.8	39	78 J	<2.5	10,000	<1
MW-91-320	05/19/20	N	<1	<1	<0.5	130	3	390	0.73 J	0.53 J	22	1	43	79 J	<2.5	9,200	<1
MW-91-320	08/20/20	N	<1	<1	6.4	120	4.4	300	0.99	1 J	25	0.98	51	76	<0.5	7,300	<1
MW-91-320	12/08/20	N	<0.2	<1	5.2	91	4	370	0.81 J	0.8 J	29	0.9	54	78	<0.5	6,400 J	<1
MW-91-320	02/23/21	N	<1	<1	6.2	77	4.4	480 J	0.93	0.81 J	29 J	0.96	56	75 J	<0.5	8,500	<1
MW-91-320	05/26/21	N	<1	<1	<0.1	72	4.7	370	1.90 J	2	28 J	1.70	46 J	76 J	<0.5	8,400	<1
MW-91-320	06/08/21	N	<2	<10	<10	69.1	--	421	--	--	24.1	1.89	41.4	61.5	<10	7,310	<10
MW-91-320	08/24/21	N	<1	<1	<0.1	77	2.5	410	0.77 J	0.66 J	13	1.50 J	60	89 J	<0.5	7,900	<1
MW-91-320	12/14/21	N	<2	<10	<10	--	--	--	--	--	--	1.42	<100 J	--	<100 J	--	--
MW-92-037	01/28/20	N	<0.2	<1	21 J	14 J	0.54	8.1 B	0.34	0.057 J	1.2 J	0.0074 J	14 J	4.1 J	<0.5	290	<1
MW-92-037	02/26/20	N	<1	<1	22	18 J	0.61	7.5	0.33 J	0.053 J	1.1	0.0068	14	5 J	<0.5	300	<1
MW-92-037	05/19/20	N	0.25	<1	21	22	0.43	7.6	0.19 J	0.045 J	0.99	0.0094	15	5.1 J	<0.5	390	<1
MW-92-037	08/20/20	N	<0.2	<1	25	35	0.59	8.9	0.44	0.056 J	1.3	0.013	17	5.2	<0.5	310	<1
MW-92-037	12/08/20	N	<0.2	<1	22	60	0.58	9.5	0.14 J	0.032 J	1.3	0.02	16	3.6	<0.5	300 J	<1
MW-92-037	02/23/21	N	<0.2	<1	21	53	0.55	10 J	0.091	<0.02	1.4 J	0.027	16	4.2 J	<0.5	340	<1
MW-92-037	05/26/21	N	0.5	<1	12	99	0.71	19	0.15 J	0.045	2.8 J	0.057	26 J	4.5 J	<2.5	480	1.2
MW-92-037	05/26/21	FD	0.49	<1	12	97	0.82	19	0.2 J	0.042	3.2 J	0.057	25 J	4.3 J	<0.5	440	1.2
MW-92-037	06/08/21	N	<0.2	<10	13.7 J	75.9	--	18.8	--	--	2.8	<0.1	<20	3.33	<10	429	<10
MW-92-037	08/24/21	N	0.21	<1	19	45	0.51	8.9	0.069 J	0.041 J	1.3	0.022 J	16	5 J	<0.5	330	<1
MW-92-037	12/14/21	N	<0.2	<1	22.2 J	--	--	--	--	--	--	0.0327	12.9 J	--	<10 J	--	--
MW-92-072	01/28/20	N	<0.2	<1	17 J	60 J	0.64	15 B	0.079	0.089 J	1.4 J	0.014 J	20 J	8.1 J	0.61	410	7
MW-92-072	01/28/20	FD	<0.2	<1	17 J	62 J	0.66	15 B	0.085	0.094 J	1.5 J	0.015 J	20 J	7.8 J	0.56	410	6.7
MW-92-072	02/26/20	N	<0.2	<1	18	54 J	0.75	17	0.11 J	0.027 J	1.3	0.013	21	8.9 J	0.58	460	6.4
MW-92-072	05/19/20	N	<0.2	<1	17	53	0.56	14	0.08 J	0.04 J	1.2	0.011 J	22	9.2 J	0.57	450	6.7
MW-92-072	05/19/20	FD	<0.2	<1	17	55	0.54	14	0.068 J	0.068 J	1.2	0.017 J	22	9.4 J	<0.5	450	6.7
MW-92-072	08/20/20	N	<0.2	<1	19	60	0.91	16	0.11	0.058 J	1.7	0.012	24	9.7	0.61	450	7.7
MW-92-072	12/08/20	N	<0.2	<1	17	71	0.69	15	0.035 J	<0.02	1.5	0.016	21	8.5	0.7	380 J	7.4
MW-92-072	02/23/21	N	<0.2	<1	17	69	0.57	16 J	0.03	0.022 J	1.4 J	0.017	21	8.8 J	0.8	420	8.3
MW-92-072	05/26/21	N	<0.2	<1	16	65	0.72	16	0.026 J	<0.02	1.5 J	0.014	22 J	8.7 J	<0.5	450	6.1
MW-92-072	06/08/21	N	<0.2	<10	17.6 J	63.3	--	19.5	--	--	1.54	<0.1	<20	8.45	<10	456	<10

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Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-91-045	08/24/21	N	150	<0.2	360	3.2	--	--	0.19	100	910	<1
MW-91-045	12/14/21	N	--	--	--	--	0.303	--	--	--	--	--
MW-91-120	01/28/20	N	130	0.11	3,000	2.4	--	--	1.8	770	6,400	<1 J
MW-91-120	02/26/20	N	150	<0.1	2,900	2	--	--	0.54	890	7,200	<1
MW-91-120	05/19/20	N	170	<0.2	2,700	2.3	--	--	0.66	910	7,000	<1
MW-91-120	08/20/20	N	170	<0.2	2,600	2.4	--	--	0.82	880	6,600	<1
MW-91-120	12/08/20	N	140	<0.2	2,900	2.2	--	--	1.2	850	6,700	<1
MW-91-120	02/23/21	N	140	<0.22	3,000	2.4	--	--	0.89	850	7,100	<1
MW-91-120	05/26/21	N	160	<0.2	2,600	2.7	--	--	1.2	850	5,800	<1
MW-91-120	06/08/21	N	--	--	3,180	1.41	--	--	1.16	869	4,820	--
MW-91-120	08/24/21	N	150	<0.2	2,600	2.5	--	--	0.83	850	6,500	<1
MW-91-120	12/14/21	N	--	--	--	--	1.3	--	--	--	--	--
MW-91-170	01/28/20	N	43	0.08 J	3,900	6	--	--	0.85	640	8,000	<1 J
MW-91-170	02/26/20	N	40	<0.1	3,700	5.4	--	--	0.93	620	7,700	<1
MW-91-170	02/26/20	FD	41	<0.1	3,800	5.5	--	--	0.84	640	7,900	<1
MW-91-170	05/19/20	N	51	0.21	3,600	4.2	--	--	0.39	600	8,000	<1
MW-91-170	08/20/20	N	55	<0.2	3,400	4.2	--	--	0.39	580	7,600	<1
MW-91-170	12/08/20	N	47	<0.2	3,800	5	--	--	0.72	630	7,700	<1
MW-91-170	02/23/21	N	42	<0.2	3,800	5.8	--	--	1.3	630	8,200	<1
MW-91-170	05/26/21	N	52	<0.2	3,500	4.1	--	--	0.78	590	7,200	<1
MW-91-170	06/08/21	N	--	--	3,970	2.84	--	--	0.857	618	6,660	--
MW-91-170	08/24/21	N	55	<0.2	3,500	3.9	--	--	0.2	590	7,500	<1
MW-91-170	12/14/21	N	--	--	--	--	0.655	--	--	--	--	--
MW-91-320	01/28/20	N	75	0.2	11,000	6.9	--	--	<0.05	1,400	19,000 J	<20 J
MW-91-320	02/26/20	N	69	<0.1	11,000	5.2	--	--	<0.1	1,500	19,000 J	<1
MW-91-320	05/19/20	N	70	0.31	10,000	3.7	--	--	0.21	1,600	20,000	<1
MW-91-320	08/20/20	N	64	0.27	10,000	4.9	--	--	<0.05	1,600	19,000	<1
MW-91-320	12/08/20	N	61	0.26	11,000	5.1	--	--	<0.05	1,600	20,000	<1
MW-91-320	02/23/21	N	53	0.3	11,000	4.5	--	--	0.059	1,800	21,000	<1
MW-91-320	05/26/21	N	100	0.27	10,000	4.8	--	--	<0.05	1,700	19,000	<1
MW-91-320	06/08/21	N	--	--	11,900	2.28	--	--	<0.5	1,870	17,200	--
MW-91-320	08/24/21	N	66	0.27	12,000	2.9	--	--	<0.1	1,800	19,000	<1
MW-91-320	12/14/21	N	--	--	--	--	<2	--	--	--	--	--
MW-92-037	01/28/20	N	130	0.07 J	370	4.2	--	--	<0.05	81	870	<1 J
MW-92-037	02/26/20	N	120	<0.1	360	4.1	--	--	<0.1	83	870	<10
MW-92-037	05/19/20	N	110	<0.2	340	4.1	--	--	<0.05	94	870	<10
MW-92-037	08/20/20	N	130	0.22	350	4.4	--	--	<0.05	81	870	<10
MW-92-037	12/08/20	N	120	<0.2	390	4.1	--	--	0.067	83	930	<1
MW-92-037	02/23/21	N	140	<0.2	370	4.8	--	--	<0.05	89	890	<10
MW-92-037	05/26/21	N	270	0.38	460	7.5	--	--	<0.05	120	1,300	<1
MW-92-037	05/26/21	FD	270	0.37	460	7.4	--	--	<0.05	120	1,300	<1
MW-92-037	06/08/21	N	--	--	494	6.18	--	--	<0.1	111	1,310	--
MW-92-037	08/24/21	N	140	0.24	330	4.4	--	--	<0.1	80	810	<5
MW-92-037	12/14/21	N	--	--	--	--	<0.1	--	--	--	--	--
MW-92-072	01/28/20	N	110	0.06 J	560	4.8	--	--	0.68	95	1,200	<1 J
MW-92-072	01/28/20	FD	120	0.05 J	570	4.8	--	--	0.67	95	1,200	<1 J
MW-92-072	02/26/20	N	120	<0.1	540	4.7	--	--	0.65	94	1,200	<1
MW-92-072	05/19/20	N	120	<0.2	530	4.7	--	--	0.65 J	95	1,200	<1
MW-92-072	05/19/20	FD	120	<0.2	520	4.4	--	--	0.37 J	94	1,200	<1
MW-92-072	08/20/20	N	120	<0.2	540	4.9	--	--	0.44	97	1,200	<1
MW-92-072	12/08/20	N	110	<0.2	600	4.6	--	--	0.77	100	1,300	<1
MW-92-072	02/23/21	N	110	<0.2	570	5.2	--	--	0.57	97	1,200	<1
MW-92-072	05/26/21	N	120	<0.2	570	5.3	--	--	0.1	98	1,200	<1
MW-92-072	06/08/21	N	--	--	615	4.41	--	--	<0.1	106	1,300	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-92-072	08/24/21	N	<0.2	<1	16	72	0.59	16	0.032 J	<0.02 J	1.4	0.014 J	23	14 J	<0.5	540	7.2
MW-92-072	12/14/21	N	<0.2	<1	17.1 J	--	--	--	--	--	--	0.0194	19 J	--	<10 J	--	--
MW-92-102	01/28/20	N	<0.2	<1	9.9 J	120 J	0.91	17 B	0.058	0.03 J	1.6 J	0.0096 J	42 J	10 J	0.57	700	5.1
MW-92-102	02/26/20	N	<0.2	<1	10	110 J	1.1	22	0.31 J	0.087 J	1.5	0.0084	41	12 J	<0.5	820	5.2
MW-92-102	05/19/20	N	<0.2	<1	9.4	110	0.83	20	0.19 J	0.033 J	1.8	0.01	42	13 J	<0.5	840	3
MW-92-102	08/20/20	N	<0.2	<1	10	120	0.98	19	0.31	0.031 J	1.8	0.0097	47	12	<0.5	760	6.2
MW-92-102	12/08/20	N	1.3	1.4	18	100	1	15	0.18 J	0.03 J	1.3	0.0067	46	11	0.74	660 J	13
MW-92-102	02/23/21	N	2.9	2.9	15	95	0.81	18 J	0.038	0.033 J	1.2 J	0.0051	42	10 J	0.82	770	13
MW-92-102	05/26/21	N	0.3	<1	13	86	1.1	18	0.05 J	0.058	1.5 J	0.01	48 J	10 J	<0.5	710	7.3
MW-92-102	06/08/21	N	<0.2	<10	11.6 J	74.7	--	22.2	--	--	1.53	<0.1	38.1	9.88	<10	706	<10
MW-92-102	06/08/21	FD	<0.2	<10	11.1 J	76.2	--	22	--	--	1.55	<0.1	37.4	9.89	<10	695	<10
MW-92-102	08/24/21	N	1	1.3	0.55 J	4.8 J	0.77	16	<0.02 J	<0.02 J	1.1	<0.0005 J	1.5 J	11 J	<0.5	560	1 J
MW-92-102	08/24/21	FD	1	1.1	14 J	85 J	0.77	17	0.043 J	<0.02 J	1.2	0.005 J	45 J	13 J	0.77	700	12 J
MW-92-102	12/14/21	N	4.85	5.18 J	18.7 J	--	--	--	--	--	--	<0.01	33.3 J	--	<10 J	--	--
MW-92-122	01/28/20	N	<1	<1	4.6 J	92 J	3.5	59 B	0.25	0.28 J	5.4 J	0.19 J	210 J	31 J	<2.5	4,000	<1
MW-92-122	02/26/20	N	<1	<1	4.4	91 J	3.2	71	0.44 J	0.14 J	3.9	0.2	220	30 J	<0.5	3,300	<1
MW-92-122	05/19/20	N	<1	<1	1.9	93	2.6	65	0.33 J	0.27 J	4.7	0.15	230	37 J	<0.5	4,300	<1
MW-92-122	08/20/20	N	<1	3.8	3.8	96	2.9	76	2.40	0.27 J	7	0.17	230	36	<0.5	3,200	<1
MW-92-122	12/08/20	N	<1	<1	5.3	88	2.4	55	0.49 J	0.14 J	4.8	0.13	230	41	<0.5	2,900 J	<1
MW-92-122	02/23/21	N	<1	<1	3.1	93	3.8	85 J	0.66	0.2 J	6.2 J	0.14	200	34 J	<0.5	3,800	<1
MW-92-122	05/26/21	N	<1	<1	2.3	96	3.3	60	0.23 J	0.19	4.5 J	0.17	200 J	28 J	<0.5	3,200	<1
MW-92-122	06/08/21	N	<1	<10	<10	98.1	--	80	--	--	4.76	0.188	174	30.4	<10	3,270	<10
MW-92-122	08/24/21	N	<1	<1	<0.1	100	2.4	77	0.16 J	0.16 J	3.5	0.19 J	210	46 J	<0.5	4,400	<1
MW-92-122	12/14/21	N	<1	<10	10.4 J	--	--	--	--	--	--	0.188	180 J	--	<100 J	--	--
MW-93-050	06/03/20	N	0.29	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-93-050	06/18/20	N	2.2	2.4	0.71 J	42	0.62	91	0.65 J	0.12	27 J	0.59	38	9	1.6	580	1.7
MW-93-050	07/21/20	N	0.81	1	<0.1 J	65	0.58	130	0.18	<0.02 J	33	0.17	27	11 J	1.2	790	1.5
MW-93-050	08/19/20	N	3.2 J	3.2	<0.1	70	0.54	130 J	0.48	<0.02	38	0.038	25	11	1.3	840	2
MW-93-050	09/29/20	N	3.5	3.6	<0.1	70	0.51 J	140 J	0.21 J	0.072 J	37 J	0.0024	24	7.6 J	1.5	690 J	2.2
MW-93-050	10/21/20	N	4.5	4.5	1.2	66	0.73	130 J	0.11	0.06	33	0.0049	25	14	1.7	830	2.3
MW-93-050	11/16/20	N	6.3	6.2 J	<0.1	53	1	110 J	1	<0.02	32	0.0051	28	11	1.8	680	2.1
MW-93-050	12/09/20	N	7.9	7.4	<0.1	59	0.82	130	0.14	<0.02	31	0.0033	26	6.8	1.4	610	2.6
MW-93-050	02/15/21	N	8.3	8	<0.1 J	60	0.5	100	0.51 J	0.026	29 J	0.0055 J	23 J	8.7 J	1.4	690 J	2.7
MW-93-050	05/18/21	N	12 J	11	<0.1 J	54	0.49	120	0.24 J	<0.02 J	28 J	<0.0005	30	8.2 J	1.6	500 J	2.8
MW-93-050	08/19/21	N	12	13	<0.1	58 J	0.5	140 J	0.18 J	0.046	35 J	0.0015	22	9.5	1.5	580 J	2.8
MW-93-050	12/13/21	N	17	19	<0.1	--	--	--	--	--	--	0.0053	--	--	--	--	--
MW-93-213	06/04/20	N	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-93-213	06/18/20	N	<1	<1	4.4 J	99	1	230	2.60 J	0.41	43 J	0.85	89	20	<0.5	2,400	<1
MW-93-213	07/21/20	N	<1	<1	<0.1 J	110	1.1	280	0.43	0.095 J	52	1	80	22 J	0.8	4,000	<1
MW-93-213	08/19/20	N	<1	2.6	<0.1	96	1.8	350 J	4.90	0.88 J	56	0.83	77	22	0.91	3,300	1.3
MW-93-213	09/29/20	N	<1	<1	0.62	90	0.65 J	130 J	0.59 J	0.36 J	40 J	0.84	99	19 J	<0.5	2,300 J	<1
MW-93-213	10/21/20	N	4.3	4.6	1	69	1.3	260 J	0.13	0.048	57	0.42	71	35	1.3	4,200	<1
MW-93-213	11/16/20	N	2	2.8 J	<0.1	64	1.4	270 J	1.10	0.057 J	65	0.33	68	26	1.2	3,100	<1
MW-93-213	12/09/20	N	8.3	7.8	<0.1	56	0.85	260	0.59	<0.02	60	0.17	68	18	1	2,400	<1
MW-93-213	02/15/21	N	4.7	5.8	<0.1 J	50	0.8	230	0.59 J	0.066	59 J	0.14 J	69 J	27 J	1.2	2,700	<1
MW-93-213	02/15/21	FD	4.7	5.6	<0.1 J	53	0.78	240	0.39 J	0.095	59 J	0.15 J	70 J	24 J	1.1	2,700	<1
MW-93-213	05/18/21	N	<1	<1	<0.1 J	55	0.92	260	0.11 J	0.025 J	40 J	0.33	71	19 J	1.3	3,000 J	<1
MW-93-213	08/19/21	N	<1	1.5	<0.1	55 J	0.84	320 J	0.13 J	0.025	55 J	0.25	66	18	0.99	3,300 J	<1
MW-93-213	12/13/21	N	4.7	6.8	<0.1	--	--	--	--	--	--	0.14	--	--	--	--	--
MW-95-113	06/10/20	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-95-113	06/18/20	N	0.32	<1	0.62 J	38	0.28	97	0.8 J	0.097	26 J	0.22	9	10	4.9	140	3.6
MW-95-113	07/21/20	N	0.44	1.2	0.59 J	40	0.26	100	0.19	0.049 J	26	0.049	6.4	10 J	5.5	140	4.1
MW-95-113	08/19/20	N	0.76	1.8	0.71	42	0.31	96 J	2.80	0.66 J	27	0.04	4.9	12	5.3	150	5.8
MW-95-113	09/30/20	N	1.4	1.6	0.51	42	0.31	100	2.10	0.11 J	30 J	0.019	4.5	9.7	5.2 J	140	6.2

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-92-072	08/24/21	N	120	<0.2	580	4.5	--	--	0.26	100	1,200	<1
MW-92-072	12/14/21	N	--	--	--	--	0.469	--	--	--	--	--
MW-92-102	01/28/20	N	110	0.05 J	1,000	5.6	--	--	0.49	130	2,100	<1 J
MW-92-102	02/26/20	N	110	<0.1	1,000	5.4	--	--	0.42	140	2,100	<1
MW-92-102	05/19/20	N	120	<0.2	1,000	5.1	--	--	0.1	130	2,100	<1
MW-92-102	08/20/20	N	110	<0.2	1,000	5.3	--	--	0.27	130	2,100	<1
MW-92-102	12/08/20	N	120	<0.2	1,000	5.7	--	--	0.95	130	2,000	<1
MW-92-102	02/23/21	N	120	<0.2	960	6	--	--	0.76	130	1,900	<1
MW-92-102	05/26/21	N	120	0.28	930	6	--	--	0.2	130	1,800	<1
MW-92-102	06/08/21	N	--	--	1,060	5.09	--	--	0.238	132	2,090	--
MW-92-102	06/08/21	FD	--	--	1,080	5	--	--	<0.1	133	2,000	--
MW-92-102	08/24/21	N	110	<0.2	950	5.6	--	--	0.84	130	1,900	<1
MW-92-102	08/24/21	FD	130	<0.2	940	5.4	--	--	0.86	130	1,900	<1
MW-92-102	12/14/21	N	--	--	--	--	1.23	--	--	--	--	--
MW-92-122	01/28/20	N	84	0.05 J	4,800	7.5	--	--	0.062	350	9,400	<1 J
MW-92-122	02/26/20	N	91	<0.1	4,700	7	--	--	<0.1	360	8,900	<1
MW-92-122	05/19/20	N	110	<0.2	4,500	6.7	--	--	<0.05	370	9,400	<1
MW-92-122	08/20/20	N	97	<0.2	4,800	7	--	--	<0.05	380	9,600	<1
MW-92-122	12/08/20	N	91	<0.2	5,000	7.5	--	--	0.069	380	8,700	<1
MW-92-122	02/23/21	N	100	0.25	4,800	7.8	--	--	<0.05	380	8,300	<1
MW-92-122	05/26/21	N	120	0.34	4,600	7.6	--	--	<0.05	390	8,700	<1
MW-92-122	06/08/21	N	--	--	5,100	5.18	--	--	<0.2	412	8,720	--
MW-92-122	08/24/21	N	110	0.2	4,700	6.6	--	--	<0.1	410	8,500	<1
MW-92-122	12/14/21	N	--	--	--	--	<0.5	--	--	--	--	--
MW-93-050	06/03/20	N	--	--	--	--	--	--	--	--	--	--
MW-93-050	06/18/20	N	130	<0.2	990	2.6	--	--	1.6 J	210	2,200	<1
MW-93-050	07/21/20	N	110	<0.2	1,300	2.5	--	--	1.3 J	220	2,800	<1
MW-93-050	08/19/20	N	100	<0.2	1,300	2.4	--	--	2.1 J	220	3,000	<1
MW-93-050	09/29/20	N	100	<0.2	1,300	2.3	--	--	2	210	3,000	<1 J
MW-93-050	10/21/20	N	110	<0.2	1,200	2.2	--	--	2.1	210	2,700	<1 J
MW-93-050	11/16/20	N	110	<0.2	1,200	2.4	--	--	2.3	200	2,500	<1 J
MW-93-050	12/09/20	N	100	<0.2	1,300	2.5	--	--	2	220	2,600	<1
MW-93-050	02/15/21	N	93	<0.22	1,300	2.6	--	--	2.2	210	2,600	<1 J
MW-93-050	05/18/21	N	110	<0.2	1,100	3.1	--	--	2.6	200	2,400	<1
MW-93-050	08/19/21	N	100	<0.2	1,300	2.8	--	--	2.6	220	2,900	<1
MW-93-050	12/13/21	N	--	--	--	--	--	--	--	--	--	--
MW-93-213	06/04/20	N	--	--	--	--	--	--	--	--	--	--
MW-93-213	06/18/20	N	65	0.31	4,200	3.6	--	--	0.43 J	630	8,600	<1
MW-93-213	07/21/20	N	59	0.21	4,600	3.7	--	--	0.74 J	800	9,600	<1
MW-93-213	08/19/20	N	57	0.2	4,600	2.9	--	--	1.3 J	820	10,000	<1
MW-93-213	09/29/20	N	79	0.54	3,600	4	--	--	<0.05	550	7,900	<1 J
MW-93-213	10/21/20	N	58	<0.2	4,600	4	--	--	1.7	830	11,000	<1 J
MW-93-213	11/16/20	N	58	<0.2	4,800	3.5	--	--	1.4	850	10,000	<1 J
MW-93-213	12/09/20	N	59	<0.2	4,800	3.6	--	--	1.8	900	10,000	<1
MW-93-213	02/15/21	N	56	<0.22	4,700	3.6	--	--	2	880	10,000	<1 J
MW-93-213	02/15/21	FD	56	<0.22	4,700	3.5	--	--	2.1	880	11,000	<1 J
MW-93-213	05/18/21	N	61	<0.2	4,200	3.8	--	--	1.7	710	8,800	<1
MW-93-213	08/19/21	N	60	<0.2	4,600	3.6	--	--	1.5	790	9,200	<1
MW-93-213	12/13/21	N	--	--	--	--	--	--	--	--	--	--
MW-95-113	06/10/20	N	--	--	--	--	--	--	--	--	--	--
MW-95-113	06/18/20	N	100	<0.2	310	0.56	--	--	5 J	150	1,000	<1
MW-95-113	07/21/20	N	110	<0.2	290	<0.5	--	--	5.7 J	150	950	<1
MW-95-113	08/19/20	N	120	<0.2	290	0.58	--	--	5.6 J	150	970	<1
MW-95-113	09/30/20	N	110	<0.2	290	<0.5	--	--	5.7	150	930	<1

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-95-113	10/20/20	N	1.4	2.1	0.87 J	40	0.25	89	0.95 J	0.9 J	23 J	0.017	3.9	13 J	5.4	140	6.6
MW-95-113	11/18/20	N	1.6	1.7 J	0.93	39	0.37	88 J	0.75	0.12 J	27	0.0024	4.6	10	4.8	140	5.5
MW-95-113	12/15/20	N	<0.2	<1	1.1	35	0.17	72 J	3.50 J	0.12 J	22	0.13	6.4	9.6	3.8	130	4.4
MW-95-113	02/25/21	N	1.6	1.6	0.84	42	0.23	94	3 J	<0.02	23	0.019	4.2	8.4 J	4.8	180 J	6.6
MW-95-113	05/19/21	N	0.82	1.6	2.2	46	0.22	110	1 J	0.18	26 J	0.25	4.1	10 J	5	160	7
MW-95-113	08/25/21	N	2.1	2.3	0.97	44	0.24	80	0.82 J	0.031 J	21	0.018 J	4	12 J	4.7	160	11
MW-95-113	12/08/21	N	0.95	2.5	1.4	--	--	--	--	--	--	0.13 J	4.3	--	5.3	--	--
MW-95-157	06/09/20	N	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-95-157	06/25/20	N	0.63	16	<0.1	230	0.6	310	5	0.27	70	1.10	14	19	5.4	700	1.9
MW-95-157	07/21/20	N	2.3	2.6	<0.1 J	150	0.6	300	0.2	<0.02 J	67	0.16	8.5	19 J	6.3	720	2.7
MW-95-157	08/19/20	N	4.2 J	4	<0.1	120	0.67	250 J	0.66	0.027 J	72	0.087	7.4	18	6.3	710	3.7
MW-95-157	09/30/20	N	4.1	4.8	<0.1	110	0.64	270	0.076	0.044 J	72 J	0.038	6.8	17	7.7 J	630	4.2
MW-95-157	10/20/20	N	<0.2	<1	1.4 J	260	0.61	240	0.77 J	0.32 J	61 J	1	4.7	36 J	<0.5	1,100	<1
MW-95-157	11/18/20	N	<0.2	1.7 J	1.3	300	0.68 J	200 J	0.033	0.36 J	64	1.10	3.5 J	23	0.55	580	<1
MW-95-157	11/18/20	FD	<0.2	3.4 J	1.5	270	0.87 J	230 J	<0.02	0.45 J	71	1	5 J	23	0.63	540	<1
MW-95-157	12/15/20	N	5.5	5.6	<0.1	93	0.62	290 J	0.099 J	<0.02	62	0.027	5.7	18	5.7	710	4.4
MW-95-157	02/25/21	N	7.8	7.6	<0.1	89	0.54	290	0.25 J	0.031	62	0.016	5	18 J	6.3	670 J	5.5
MW-95-157	05/19/21	N	9.9	9.3	<0.1	81	0.53	330	0.043 J	<0.02	65 J	0.0085	4.8	20 J	6.7	650	5.9
MW-95-157	08/25/21	N	8.7	9.9	<0.1	75	0.49	280	0.079 J	0.056 J	57	0.002 J	4.1	27 J	7	910	7.4
MW-95-157	12/08/21	N	8.6	11	<0.1	--	--	--	--	--	--	0.0057 J	3.8	--	6.5	--	--
MW-96-045	09/22/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-96-045	10/21/20	N	<0.2	<1	6.1	51	2.3	79 J	2.30	0.25	75	0.82	130	23	<0.5	2,300	4.6
MW-96-045	11/17/20	N	<1	<1 J	1.1	39	2.9	90 J	4.50	0.067 J	110	0.64	120	13	0.55	2,400	4.5
MW-96-045	12/02/20	N	<0.2	<1	4.1	38	2.3 J	80 J	0.89	0.085 J	83 J	0.68	110	8.7 J	0.91	2,100	5.9
MW-96-045	12/02/20	FD	<0.2	<1	4.1	39	3.6 J	85 J	0.79	<0.1	72 J	0.69	110	6.2 J	0.79	1,900	5.9
MW-96-045	01/26/21	N	<1	<1	<0.1 J	34	2.5	92 J	2.70	0.13 J	140	0.81	110	15 J	0.81	2,300 J	5.9
MW-96-045	02/17/21	N	<1	<1	<0.1	30	1.8	83	0.56 J	0.047 J	80	0.59	110	12 J	0.71	2,000	6.1
MW-96-045	03/17/21	N	<1	<1	3.4	57	1.8 J	160	2.40 J	0.067 J	32 J	1	91	7.7	0.81	2,000	6.5
MW-96-045	04/26/21	N	<0.2	<1	<0.1	56	1.4	150	0.84	0.1	34	1.20	79	7.4	0.71	1,800	7.2
MW-96-045	05/18/21	N	<0.2	<1	<0.1 J	56	1.3	150	3.10 J	0.091 J	31 J	1.20	72	6.1 J	0.67	1,700 J	6.7
MW-96-045	06/09/21	N	<0.2	<1	3.5	52	1.6 J	180	1.60 J	0.032 J	33	1	78	7.3 J	0.6	2,400	7.6
MW-96-045	08/19/21	N	<0.2	<1	<0.1	47 J	1.6	140 J	0.52 J	0.044	58 J	0.094	93	7.7	1.1	2,600 J	9.9
MW-96-045	12/15/21	N	<1	1.5	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-96-045	12/15/21	FD	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-96-217	09/16/20	N	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-96-217	10/21/20	N	<1	1.8	1.9	120	1.7	340 J	1.10	0.73	49	1.60	73	64	<0.5	5,200	<1
MW-96-217	11/17/20	N	<1	2.6 J	<0.1	130	1.7	290 J	0.87	0.4 J	48	1.50	75	36	<0.5	3,900	<1
MW-96-217	12/02/20	N	<1	1.4	1.5	110	1.5 J	300 J	0.62	0.22 J	52 J	1.20	74	35 J	<0.5	3,400	<1
MW-96-217	01/26/21	N	<1	<1	<0.1 J	85	1.4	290 J	0.46	0.18 J	47	0.78	68	37 J	0.73	4,200 J	<1
MW-96-217	02/17/21	N	<1	<1	<0.1	69	0.97	310	0.37 J	0.053 J	46	0.83	66	35 J	<0.5	4,600	<1
MW-96-217	03/17/21	N	<1	<1	1.8	64	1.4 J	550	0.12 J	<0.1	51 J	0.93	65	30	<0.5	4,500	<1
MW-96-217	04/26/21	N	<1	<1	<0.1	63	1.7	610	0.13	<0.1	62	0.69	64	27	<0.5	4,600	1.2
MW-96-217	05/18/21	N	<1	<1	<0.1 J	56	1	670	0.061 J	0.079 J	42 J	0.61	62	26 J	<0.5	4,700 J	<1
MW-96-217	06/09/21	N	<1	<1	1.8	48	1.2 J	570	0.12 J	<0.1	53	0.48	57	33 J	<0.5	4,900	1.4
MW-96-217	08/19/21	N	<1	<1	<0.1	47 J	0.93	490 J	0.078 J	<0.02	49 J	0.51	59	22	<0.5	3,800 J	1.4
MW-96-217	12/15/21	N	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-97-042	10/27/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-97-042	11/17/20	N	<0.2	<1 J	5.5	25	1.1	40 J	0.22	<0.1	11	0.28	42	9.5	1.3	610	<1
MW-97-042	12/10/20	N	<0.2	<1	6.1	26	0.54	44 J	1.60 J	0.32 J	13	0.29	34	7.7	0.55	570	<1
MW-97-042	01/26/21	N	11	13	4.7 J	24	0.62	38 J	0.57 J	0.11 J	10	0.19	31	6.9 J	1.5	490 J	1.3
MW-97-042	01/26/21	FD	12	14	4.7 J	22	0.62	38 J	1.40 J	0.031 J	10	0.2	32	6.5 J	1.5	480 J	1.2
MW-97-042	02/15/21	N	0.25	<1	2.9 J	59	0.38	78	0.41 J	0.077	20 J	0.38 J	18 J	8.3 J	0.63	500	<1
MW-97-042	03/17/21	N	<0.2	1	3.2	71	0.55 J	140	0.25 J	0.13 J	25 J	0.45	12	11	0.8	630	<1
MW-97-042	03/17/21	FD	<0.2	1.2	3.5	74	0.5 J	140	0.24 J	0.085 J	24 J	0.47	13	11	0.76	600	<1

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-95-113	10/20/20	N	110	<0.2	280 J	<0.5	--	--	4.8	150	930	<1
MW-95-113	11/18/20	N	120	<0.2	280	<0.5	--	--	5.2 J	150	840	<1 J
MW-95-113	12/15/20	N	120	<0.2	250	0.71	--	--	4.4	130	730	<10
MW-95-113	02/25/21	N	110	<0.2	280	0.62	--	--	5.7	150	810	<1
MW-95-113	05/19/21	N	110	<0.22	300	0.62	--	--	5.6	150	850	<1
MW-95-113	08/25/21	N	92	<0.2	280	<0.5	--	--	6.2 J	140	910	<1
MW-95-113	12/08/21	N	--	--	--	--	--	--	6.1	--	--	--
MW-95-157	06/09/20	N	--	--	--	--	--	--	--	--	--	--
MW-95-157	06/25/20	N	75	<0.2	1,500	1.1	--	--	6.2	280	3,500	<1
MW-95-157	07/21/20	N	76	<0.2	1,500	<1	--	--	6.7 J	290	3,800	<1
MW-95-157	08/19/20	N	75	<0.2	1,500	<1	--	--	7.1 J	290	4,100	<1
MW-95-157	09/30/20	N	75	<0.2	1,500	0.61	--	--	7.8	280	4,000	<1
MW-95-157	10/20/20	N	120	0.38	1,300 J	1.1	--	--	<0.05	200	3,200	<1
MW-95-157	11/18/20	N	78 J	<0.2	1,500	<1	--	--	8 J	290 J	3,500 J	<1 J
MW-95-157	11/18/20	FD	110 J	<0.2	1,400	1.3	--	--	8.3	230 J	2,800 J	<1 J
MW-95-157	12/15/20	N	76	<0.2	1,500	<1	--	--	7.8	290	3,200	<1
MW-95-157	02/25/21	N	54	<0.2	1,500	1	--	--	8.9	300	3,100	<1
MW-95-157	05/19/21	N	73	<0.22	1,500	<1	--	--	8.7	300	3,300	<1
MW-95-157	08/25/21	N	69	<0.2	1,600	<1	--	--	9.3 J	300	4,000	<1
MW-95-157	12/08/21	N	--	--	--	--	--	--	9.5	--	--	--
MW-96-045	09/22/20	N	--	--	--	--	--	--	--	--	--	--
MW-96-045	10/21/20	N	250	0.21	2,800	7.4	--	--	0.33	1,200	7,600	<1 J
MW-96-045	11/17/20	N	280	<0.2	2,900	7.4	--	--	0.54	1,200	7,200	<1 J
MW-96-045	12/02/20	N	250	<0.2	2,700	7.4	--	--	0.7	1,000	6,900	<1
MW-96-045	12/02/20	FD	250	<0.2	2,700	7.6	--	--	0.72	1,100	7,100	<1
MW-96-045	01/26/21	N	250	<0.2	3,100	6.8	--	--	0.79	1,300	7,600	<1 J
MW-96-045	02/17/21	N	240	<0.22	3,000	6.8	--	--	0.7	1,100	6,700	<1
MW-96-045	03/17/21	N	240	<0.2	2,500	6.3	--	--	0.56	820	6,200	<1
MW-96-045	04/26/21	N	200	<0.2	2,400	6.3	--	--	0.83	620	5,200	<1
MW-96-045	05/18/21	N	220	<0.2	2,400	6.2	--	--	0.84	610	5,400	<1
MW-96-045	06/09/21	N	220	<0.2	2,500	5.8	--	--	0.84	610	5,000	<1
MW-96-045	08/19/21	N	240	<0.2	2,800	6.6	--	--	0.71	1,100	6,700	<1
MW-96-045	12/15/21	N	--	--	--	--	--	--	--	--	--	--
MW-96-045	12/15/21	FD	--	--	--	--	--	--	--	--	--	--
MW-96-217	09/16/20	N	--	--	--	--	--	--	--	--	--	--
MW-96-217	10/21/20	N	51	0.24	5,800	3.8	--	--	0.13	1,000	13,000	<1 J
MW-96-217	11/17/20	N	61	<0.2	5,500	3.6	--	--	<0.05	970	11,000	<1 J
MW-96-217	12/02/20	N	62	<0.2	5,500	4.1	--	--	<0.1	1,000	11,000	<1
MW-96-217	01/26/21	N	54	<0.22	6,200	3.3	--	--	1	1,000	13,000	<20 J
MW-96-217	02/17/21	N	49	<0.22	6,200	3.7	--	--	0.3	1,100	13,000	<1
MW-96-217	03/17/21	N	45	<0.2	6,100	3.4	--	--	0.62	1,200	13,000 J	<50
MW-96-217	04/26/21	N	51	<0.2	6,100	3.5	--	--	0.67	1,200	12,000 J	<1
MW-96-217	05/18/21	N	53	<0.2	6,000	3.8	--	--	0.72	1,200	12,000	<1
MW-96-217	06/09/21	N	51	<0.2	6,000	3.8	--	--	0.84	1,200	12,000	<50
MW-96-217	08/19/21	N	50	<0.2	6,200	3.5	--	--	0.86	1,200	13,000	<1
MW-96-217	12/15/21	N	--	--	--	--	--	--	--	--	--	--
MW-97-042	10/27/20	N	--	--	--	--	--	--	--	--	--	--
MW-97-042	11/17/20	N	130	0.24	810	3.6	--	--	0.59	210	1,800	<1 J
MW-97-042	12/10/20	N	120	0.26	900	3.5	--	--	0.37	230	1,800	<1
MW-97-042	01/26/21	N	120	<0.22	780	3.4	--	--	0.83 J	200	1,700	<1 J
MW-97-042	01/26/21	FD	130	0.25	790	3.2	--	--	0.57 J	200	1,700	<1 J
MW-97-042	02/15/21	N	98	<0.22	990	2.4	--	--	0.42	210	2,000	<1 J
MW-97-042	03/17/21	N	90	<0.2	1,000	2.2	--	--	0.59	220	2,200	<1
MW-97-042	03/17/21	FD	89	<0.22	1,100	2.2	--	--	0.65	220	2,200	<1

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
MW-97-042	04/26/21	N	1.4	1.6	1.5	96	0.46	170	0.19	0.022	31	0.33	9.9	11	0.8	620	1.1
MW-97-042	04/26/21	FD	1.4	1.8	1.4	95	0.51	170	0.26	0.13	28	0.33	9.6	10	0.72	620	1.1
MW-97-042	05/17/21	N	3.1	3.4	0.84	100	0.51	180	0.56	0.038	27	0.24	9	9.3 J	0.87	590 J	1.3
MW-97-042	06/09/21	N	2.1	2.4	3.1	82	0.58 J	180	0.042 J	0.025 J	29	0.16	13	11 J	0.7	650	2.1
MW-97-042	08/17/21	N	3.3	3.4	1.6	61	0.57	120	0.17 J	0.045	21 J	0.11	16	8.9 J	<0.5	610 J	1.4
MW-97-042	12/13/21	N	4.4	6	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-97-202	10/22/20	N	7.9	26	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-97-202	11/17/20	N	<1	<1 J	3	150	2	410 J	0.6	0.37 J	99	1	38	38	<0.5	3,500	<1
MW-97-202	12/10/20	N	<1	<1	7.1	140	0.89	350 J	0.59 J	0.45 J	85	1.30	36	29	<0.5	3,500	<1
MW-97-202	01/26/21	N	<1	<1	2.7 J	150	1.1	350 J	0.54	0.46 J	86	1.60	34	31 J	<0.5	3,500 J	<1
MW-97-202	02/15/21	N	<1	<1	<0.1 J	130	0.77	370	0.51 J	0.47	87 J	1.50 J	34 J	36 J	<0.5	3,300	<1
MW-97-202	03/16/21	N	<1	<1	5.9	130	1.6 J	640	0.83 J	0.58 J	110 J	1.40	35	31	<0.5	4,200	<1
MW-97-202	04/26/21	N	<1	<1	<0.1	130	1.1	630	0.48	0.53	87	1.40	35	28	<0.5	4,200	<1
MW-97-202	05/17/21	N	<1	<1	<0.1	130	1	590	0.46	0.42	83	1.40	34	24 J	<0.5	4,300 J	<1
MW-97-202	06/09/21	N	<1	<1	8.3	120	1.5 J	670	0.58 J	0.63 J	120	1.30	31	38 J	<0.5	5,600	<1
MW-97-202	08/17/21	N	<1	3	<0.1	120	0.96	560	0.47 J	0.52	65 J	1.70	30	31 J	<0.5	3,900 J	<1
MW-97-202	08/17/21	FD	<1	3	<0.1	120	0.87	560	0.47 J	0.46	63 J	1.70	29	26 J	<0.5	3,900 J	<1
MW-97-202	12/13/21	N	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-98-055	10/29/20	N	1.2	8.7	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-98-055	10/29/20	FD	7.5	6.5	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-98-055	11/17/20	N	3.1	7.1 J	2.5	110	1.1	79 J	0.44	0.094 J	30	0.25	47	18	2.3	700	<1
MW-98-055	12/14/20	N	14	16	1.9	82	0.62	80 J	0.36	0.078 J	28	0.16	33	16	2.2	770	1.7
MW-98-055	01/25/21	N	11	15	1.6 J	82	0.64	80 J	1.80	0.11 J	23	0.16	22	13 J	3.4	630 J	2.3
MW-98-055	02/16/21	N	24	27	1.3 J	82	0.51	84 J	0.47 J	0.046	23 J	0.16	19 J	12 J	3.4	530 J	2.4
MW-98-055	03/16/21	N	4	3.5	3.6	78	0.57 J	120	0.28 J	0.038 J	23 J	0.16	18	13	5.1	670	2.3
MW-98-055	04/26/21	N	50	53	1.4	72	0.58	140	0.46	0.04	25	0.094	16	10	4.8	650	3.6
MW-98-055	05/20/21	N	69 J	69	1.6	64	0.55	140	0.19 J	<0.02	24 J	0.081	15	12 J	4.9	610 J	3.4
MW-98-055	06/09/21	N	66	67	3.2	63	0.65 J	140	0.79 J	0.043 J	29	0.087	15	12 J	4.9	700	3.6
MW-98-055	06/09/21	FD	66	67	3	65	0.68 J	150	0.7 J	0.085 J	31	0.089	16	13 J	4.4	770	3.5
MW-98-055	08/20/21	N	84	93	<0.1	56	0.54	100	0.27 J	0.029 J	19 J	0.031	18	13 J	5.7	560 J	4.7
MW-98-055	12/16/21	N	240	230	2.8	--	--	--	--	--	--	0.0013	--	--	--	--	--
MW-98-077	10/30/20	FD	250	260	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-98-077	10/30/20	N	260	230	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-98-077	11/17/20	N	26	29 J	<0.1	200	1.8	300 J	0.71	0.066 J	17	0.52	18	44	17	2,400	1.1
MW-98-077	12/14/20	N	140	140	<0.1	140	1.5	270 J	0.52	0.085 J	14	0.31	14	37	17	2,300	2.2
MW-98-077	01/25/21	N	310	310	<0.1 J	110	1.5	250 J	0.19	<0.02 J	11	0.12	15	36 J	21	2,100 J	3.4
MW-98-077	02/16/21	N	360	340	<0.1 J	93	1.2	230 J	0.3 J	<0.02	9.6 J	0.071	16 J	47 J	19	1,900 J	4.1
MW-98-077	03/16/21	N	440	410	3.5	100	1.4 J	410	0.043 J	<0.02	10 J	0.12	11	38	22	2,400	2.6
MW-98-077	04/26/21	N	480	480	<0.1	83	1.5	350	0.41	<0.02	8.9	0.065	16	32	21	2,100	4.2
MW-98-077	05/20/21	N	490 J	470	<0.1	86	1.4	390	0.13 J	<0.02	9.5 J	0.039	14	40 J	21	2,100 J	3.7
MW-98-077	06/09/21	N	540	510	4.6	84	1.7 J	420	0.42 J	0.025 J	11	0.053	13	43 J	20	3,000	3.6
MW-98-077	08/20/21	N	340	390	4.3	38	0.77	63	0.085 J	0.03 J	3.9 J	0.002	28	9.3 J	18	870 J	8
MW-98-077	12/16/21	N	340	320	3	--	--	--	--	--	--	0.0028	--	--	--	--	--
OW-01D	10/07/20	N	0.6	<1	--	--	--	--	--	--	--	--	18 J	--	--	1,400	--
OW-01D	10/07/20	FD	0.59	<1	--	--	--	--	--	--	--	--	18 J	--	--	1,400	--
OW-01D	12/15/21	N	0.5	2.8	<0.1	32	1.1 J	140	--	--	24 J	0.0047	23	17 J	8.2	1,400	3.2
OW-01M	10/07/20	N	2.3	5.1	--	--	--	--	--	--	--	--	18 J	--	--	1,400	--
OW-01M	12/15/21	N	1.2	4.1	<0.1	63	1 J	150	--	--	24 J	0.0048	24	15 J	8.2	1,500	3
OW-01S	10/07/20	N	2.6	5.2	--	--	--	--	--	--	--	--	2.1 J	--	--	1,400	--
OW-01S	12/15/21	N	8.4	31	<0.1	110	0.88 J	350	--	--	54 J	0.026	8.9	17 J	2.9	1,000	2.5
OW-02D	10/08/20	N	0.5	1.4	--	--	--	--	--	--	--	--	23	--	--	1,600	--
OW-02D	12/15/21	N	0.28	1.8	<0.1	24	1.1 J	190	--	--	31 J	0.0017	24	21 J	8.4	1,600	1.9
OW-02M	10/08/20	N	2	3.2	--	--	--	--	--	--	--	--	20	--	--	1,600	--
OW-02M	12/15/21	N	1.1	1.6	<0.1	38	1.1 J	150	--	--	25 J	<0.0005	23	14 J	7.8	1,600	2.8

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
MW-97-042	04/26/21	N	89	<0.2	1,100	2	--	--	0.63	220	2,300	<1
MW-97-042	04/26/21	FD	82	<0.2	1,100	1.9	--	--	0.62	220	2,200	<1
MW-97-042	05/17/21	N	85	<0.2	1,100	1.9	--	--	0.99	220	2,400	<10
MW-97-042	06/09/21	N	92	<0.2	1,100	2.1	--	--	0.36	220	2,300	<1
MW-97-042	08/17/21	N	110	<0.2	940	2.1	--	--	0.47	210	2,100	<1
MW-97-042	12/13/21	N	--	--	--	--	--	--	--	--	--	--
MW-97-202	10/22/20	N	--	--	--	--	--	--	--	--	--	--
MW-97-202	11/17/20	N	77	0.34	6,000	3.1	--	--	<0.05	950	12,000	<1 J
MW-97-202	12/10/20	N	81	0.39	6,200	3.5	--	--	0.25	990	12,000	<1
MW-97-202	01/26/21	N	100	0.37	5,900	2.7	--	--	0.072	990	12,000	<1 J
MW-97-202	02/15/21	N	90	0.32	6,000	3	--	--	0.51	990	12,000	<20 J
MW-97-202	03/16/21	N	75	0.27	6,100	3	--	--	0.42	970	12,000	<1
MW-97-202	04/26/21	N	81	0.56	6,500	3.3	--	--	0.21	990	12,000	<1
MW-97-202	05/17/21	N	81	0.55	6,200	3.2	--	--	0.32	960	13,000	<1
MW-97-202	06/09/21	N	79	0.29	6,200	3.1	--	--	0.15	950	12,000	<1
MW-97-202	08/17/21	N	97	0.31	6,100	2.9	--	--	0.21	970	13,000	<1
MW-97-202	08/17/21	FD	94	0.26	6,100	3	--	--	0.18	980	14,000	<1
MW-97-202	12/13/21	N	--	--	--	--	--	--	--	--	--	--
MW-98-055	10/29/20	N	--	--	--	--	--	--	--	--	--	--
MW-98-055	10/29/20	FD	--	--	--	--	--	--	--	--	--	--
MW-98-055	11/17/20	N	170	0.35	900	1.9	--	--	1.5	470	2,400	1 J
MW-98-055	12/14/20	N	140	<0.2	870	2	--	--	1.8	430	2,200	<1
MW-98-055	01/25/21	N	140	0.22	840	1.6	--	--	2.8	500	2,200	<1
MW-98-055	02/16/21	N	120	<0.22	790	1.7	--	--	2.7	510	2,300	<1
MW-98-055	03/16/21	N	120	<0.2	820	1.7	--	--	4.2	520	2,300	<1
MW-98-055	04/26/21	N	110	<0.2	850	1.5	--	--	4.9	500	2,200	<10
MW-98-055	05/20/21	N	100	<0.2	830	1.7	--	--	4.5	490	2,200	<1
MW-98-055	06/09/21	N	110	<0.2	850	1.6	--	--	4.7	500	2,200	<1
MW-98-055	06/09/21	FD	100	<0.2	850	1.6	--	--	5.1	490	2,200	<1
MW-98-055	08/20/21	N	100	<0.2	870	1.4	--	--	6	470	2,200	<1
MW-98-055	12/16/21	N	--	--	--	--	--	--	--	--	--	--
MW-98-077	10/30/20	FD	--	--	--	--	--	--	--	--	--	--
MW-98-077	10/30/20	N	--	--	--	--	--	--	--	--	--	--
MW-98-077	11/17/20	N	70	0.23	4,000	2.2	--	--	2.8	630	8,200	<20 J
MW-98-077	12/14/20	N	70	<0.2	3,700	2.2	--	--	4.3	650	7,900	<1
MW-98-077	01/25/21	N	75	<0.22	3,500	2.1	--	--	5.5	610	7,400	<1
MW-98-077	02/16/21	N	80	<0.22	3,200	2.2	--	--	5	580	6,400	<1
MW-98-077	03/16/21	N	64	<0.2	4,000	1.8	--	--	4.3	640	8,300	<1
MW-98-077	04/26/21	N	77	<0.2	3,300	2.3	--	--	5.5	590	6,800	<1
MW-98-077	05/20/21	N	74	<0.2	3,500	2.6	--	--	4.6	640	7,300	<1
MW-98-077	06/09/21	N	73	<0.2	3,600	2.2	--	--	5.2	610	7,800	<1
MW-98-077	08/20/21	N	100	<0.2	1,100	2.6	--	--	7.9	470	2,600	<1
MW-98-077	12/16/21	N	--	--	--	--	--	--	--	--	--	--
OW-01D	10/07/20	N	--	--	2,200	2.2	--	--	2.5	480	4,300	--
OW-01D	10/07/20	FD	--	--	2,200	2	--	--	2.5	480	4,300	--
OW-01D	12/15/21	N	86	--	2,000	2.3	--	--	7 J	510	4,100	--
OW-01M	10/07/20	N	--	--	2,200	2.2	--	--	2.7	490	4,300	--
OW-01M	12/15/21	N	110	--	2,000	2.1	--	--	7.8 J	510	4,100	--
OW-01S	10/07/20	N	--	--	2,100	1.3	--	--	2.9	470	4,500	--
OW-01S	12/15/21	N	270	--	1,700	1.4	--	--	3 J	360	4,000	--
OW-02D	10/08/20	N	--	--	2,200	2.7	--	--	3.1	490	4,400	--
OW-02D	12/15/21	N	86	--	2,100	3.1	--	--	7.4 J	500	4,100	--
OW-02M	10/08/20	N	--	--	2,200	2.1	--	--	2.8	490	4,400	--
OW-02M	12/15/21	N	97	--	2,000	2.5	--	--	7.5 J	510	4,100	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
OW-02S	10/08/20	N	16	16	--	--	--	--	--	--	--	--	22	--	--	670	--
OW-02S	12/15/21	N	15	15	<0.1	130	0.59 J	130	--	--	16 J	0.00083	21	11 J	2	640	3.4
OW-05D	10/08/20	N	0.63	1.8	3	25	1.2	110	0.085 J	0.096 J	30	0.00058	26	14	4.3	1,600	2.3
OW-05D	12/01/21	N	0.42	1.9	<0.1 J	28	1.1	200	--	--	31	<0.0005	29	17 J	9.3	1,300	2.4
OW-05M	10/08/20	N	0.49	16	1	33	1.1	97	2.90 J	0.23 J	26	0.016	23	11	4.6	1,500	2
OW-05M	12/01/21	N	0.59	1.1	<0.1 J	31	1.1	150	--	--	24	<0.0005	26	15 J	9.2	1,400	1.8
OW-05S	10/08/20	N	10	10	--	--	--	--	--	--	--	--	10	--	--	660	--
OW-05S	12/01/21	N	9.7	10	<0.1 J	130	0.34	430	--	--	69	<0.0005	7.6	17 J	2.4	660	2
PGE-07BR	12/03/20	N	<1	<1	--	--	2.9	430	--	0.14	16	0.32	8.1	--	<0.5 J	4,000	--
PGE-08	12/09/20	N	<1	<1	--	--	3.2 J	150 J	--	0.08 J	3.8 J	0.45	110	--	<0.5	3,600 J	--
PGE-08	12/08/21	N	<1	<1	<0.1	--	--	--	--	--	--	0.47 J	--	--	--	--	--
PM-03	12/14/20	N	9.6	9.5	--	--	0.11	76 J	--	0.11 J	19	0.0008	5.8	--	1.7	170	--
PM-04	12/14/20	N	16	16	--	--	0.33	110 J	--	0.039 J	34	0.0029	5.4	--	1.4	320	--
PT5D	12/16/21	N	31	29	1.5	20	--	--	--	<0.02	--	0.031	100	--	<0.5	--	--
PT5M	12/16/21	N	<0.2	<1	1.7	23	--	--	--	<0.02	--	0.94	11	--	<0.5	--	--
PT5S	12/16/21	N	<0.2	<1	13	84	--	--	--	0.65 J	--	0.21	6.1	--	<0.5	--	--
PT8D	10/06/20	N	390	370	--	--	--	--	--	--	--	--	--	--	--	--	--
PT8D	05/04/21	N	240	230	<0.1	--	--	660	--	--	--	0.23	62	47	0.76	5,500 J	--
PT8D	12/10/21	N	200	200	<0.1	--	--	--	--	--	--	0.27	--	--	--	--	--
PT9D	10/06/20	N	5,200	5,200	--	--	--	--	--	--	--	--	--	--	--	--	--
PT9D	05/05/21	N	4,900	5,100 J	<0.1	--	--	100	--	--	--	0.0023	88	44 J	3.3	5,200	--
PT9D	12/10/21	N	7,000	6,100	<0.1	--	--	--	--	--	--	0.0035	90	--	4.6	--	--
PT9M	10/06/20	N	690	660	--	--	--	--	--	--	--	--	--	--	--	--	--
PT9M	05/05/21	N	570	580 J	<0.1	--	--	160	--	--	--	0.03	5.1	38 J	2.6	2,500	--
PT9M	12/10/21	N	64	87	<0.1	--	--	--	--	--	--	0.11	7.2	--	5.7	--	--
PT9S	10/06/20	N	42	58	--	--	--	--	--	--	--	--	--	--	--	--	--
PT9S	05/05/21	N	28	29 J	0.77	--	--	160	--	--	--	0.97	18	9.5 J	1.8	550	--
PT9S	12/10/21	N	34	35	<0.1	--	--	--	--	--	--	0.32	8.6	--	6	--	--
R-19	01/30/20	N	<0.2	<1	2.1	110	--	--	0.047	0.038 J	--	0.0025 J	4.7	--	1.6	--	--
R-19	02/20/20	N	<0.2	<1	2.1	120	--	--	0.093 J	0.027 J	--	0.0013	4.7 J	--	1.5	--	--
R-19	04/30/20	N	<0.2	<1	2.1	110	--	--	0.047	0.026 J	--	0.0014	4.4	--	1.5	--	--
R-19	08/20/20	N	<0.2	<1	2.5	110 J	--	--	0.041 J	<0.02 J	--	0.00072	4.5	--	1.5	--	--
R-19	11/19/20	N	<0.2	<1	2.4	110	--	--	<0.02	<0.02	--	0.0016	4.7	--	1.4	--	--
R-19	01/28/21	N	<0.2	<1	2.2	120	--	--	0.076	0.023	--	0.0018	4.7	--	1.7	--	--
R-19	01/28/21	FD	<0.2	<1	2.3	120	--	--	0.043	0.029	--	0.0016	4.5	--	1.6	--	--
R-19	02/18/21	N	<0.2	<1	2.5	120	--	--	0.035 J	<0.02 J	--	0.0014	4.7	--	1.6	--	--
R-19	05/20/21	N	<0.2	<1	2	100	--	--	<0.02	<0.02	--	<0.0005	4.3	--	1.3	--	--
R-19	08/19/21	N	<0.2	<1	2.3	100	--	--	0.021	<0.02 J	--	<0.0005	4	--	1.5	--	--
R-19	08/19/21	FD	<0.2	<1	2.1	100	--	--	0.022	<0.02 J	--	<0.0005	4.1	--	1.5	--	--
R-19	11/18/21	N	<0.2	<1	3.1 J	--	--	--	--	--	--	0.00056	4.4	--	1.9	--	--
R-28	01/29/20	N	<0.2	<1	2.2	120	--	--	0.18	<0.02	--	0.0026	4.7	--	1.6	--	--
R-28	02/19/20	N	<0.2	<1	2.1	120 J	--	--	0.15 J	0.063 J	--	0.0018	4.6	--	1.6	--	--
R-28	04/29/20	N	<0.2	<1	2.3	120	--	--	0.075 J	0.088 J	--	0.0016	4.5	--	1.7	--	--
R-28	08/19/20	N	<0.2	<1	2.5	110 J	--	--	0.038 J	0.041 J	--	0.00095	4.7	--	1.5	--	--
R-28	11/18/20	N	<0.2	<1	2.5	110	<100	58	0.04	<0.02	25	0.0015	4.5	4.7	1.6	86	--
R-28	11/18/20	FD	<0.2	<1	2.5	110	0.13	59	0.045	<0.02	25	0.0013	4.5	4.7	1.5	86	--
R-28	01/27/21	N	<0.2	<1	2.2	120	--	--	0.025	0.02 J	--	0.0023	4.7	--	1.5	--	--
R-28	02/17/21	N	<0.2	<1	2.4	120	--	--	0.085 J	<0.02 J	--	0.0016	4.8	--	1.7	--	--
R-28	05/19/21	N	<0.2	<1	1.9	100	--	--	<0.02	<0.02 J	--	0.00085	4.3	--	1.4	--	--
R-28	08/18/21	N	<0.2	<1	2.1	100	--	--	0.022 J	<0.02	--	<0.0005	4.3	--	1.6	--	--
R-28	11/17/21	N	<0.2	<1	3.3	--	--	--	--	--	--	0.00095	4.7 J	--	2	--	--
R-63	01/29/20	N	<0.2	<1	2.1	110	--	--	0.11	<0.02	--	0.0036	4.4	--	1.6	--	--
R-63	02/19/20	N	<0.2	<1	2.3	120 J	--	--	0.17 J	0.043 J	--	0.0029	4.8	--	1.6	--	--
R-63	04/29/20	N	<0.2	<1	2.2	120	--	--	0.073 J	0.058 J	--	0.0018	4.7	--	1.6	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
OW-02S	10/08/20	N	--	--	1,100	3.2	--	--	3.2	180	2,600	--
OW-02S	12/15/21	N	58	--	1,100	2.7	--	--	3.2 J	180	2,200	--
OW-05D	10/08/20	N	71	<0.2	2,100	3	--	--	2.4	470	4,500	--
OW-05D	12/01/21	N	76	--	2,000	2.8	--	--	7.8	500	4,000	--
OW-05M	10/08/20	N	86	<0.2	2,100	2.6	--	--	3.1	490	4,400	--
OW-05M	12/01/21	N	79	--	1,900	3	--	--	9	510	4,000	--
OW-05S	10/08/20	N	--	--	1,700	1.7	--	--	3.2	350	4,600	--
OW-05S	12/01/21	N	48	--	1,700	1.7	--	--	2.8	360	4,000	--
PGE-07BR	12/03/20	N	17	--	7,400	--	--	--	--	410	10,000	--
PGE-08	12/09/20	N	52	--	6,000	--	--	--	<0.05	2,000	14,000	--
PGE-08	12/08/21	N	--	--	--	--	--	--	--	--	--	--
PM-03	12/14/20	N	85	--	320	--	--	--	3.2	62	760	--
PM-04	12/14/20	N	64	--	650	--	--	--	2.2	180	1,500	--
PT5D	12/16/21	N	--	--	--	--	--	--	<0.1	--	--	<1
PT5M	12/16/21	N	--	--	--	--	--	--	<0.1	--	--	<1
PT5S	12/16/21	N	--	--	--	--	--	--	<0.1	--	--	3
PT8D	10/06/20	N	--	--	--	--	--	--	--	--	--	--
PT8D	05/04/21	N	--	--	7,200	--	--	--	0.76	780	12,000 J	--
PT8D	12/10/21	N	--	--	--	--	--	--	--	--	--	--
PT9D	10/06/20	N	--	--	--	--	--	--	--	--	--	--
PT9D	05/05/21	N	--	--	6,700	--	--	--	3.5	960	13,000	--
PT9D	12/10/21	N	--	--	--	--	--	--	6.4	--	--	--
PT9M	10/06/20	N	--	--	--	--	--	--	--	--	--	--
PT9M	05/05/21	N	--	--	3,600	--	--	--	2.4	690	8,700	--
PT9M	12/10/21	N	--	--	--	--	--	--	7.2	--	--	--
PT9S	10/06/20	N	--	--	--	--	--	--	--	--	--	--
PT9S	05/05/21	N	--	--	860	--	--	--	2.6	270	1,900	--
PT9S	12/10/21	N	--	--	--	--	--	--	5	--	--	--
R-19	01/30/20	N	--	--	--	--	--	--	0.37	--	--	--
R-19	02/20/20	N	--	--	--	--	--	--	0.33	--	--	--
R-19	04/30/20	N	--	--	--	--	--	--	0.38	--	--	--
R-19	08/20/20	N	--	--	--	--	--	--	0.36	--	--	--
R-19	11/19/20	N	--	--	--	--	--	--	--	--	--	--
R-19	01/28/21	N	--	--	--	--	--	--	0.4	--	--	--
R-19	01/28/21	FD	--	--	--	--	--	--	0.39	--	--	--
R-19	02/18/21	N	--	--	--	--	--	--	0.39	--	--	--
R-19	05/20/21	N	--	--	--	--	--	--	0.42	--	--	--
R-19	08/19/21	N	--	--	--	--	--	--	0.36	--	--	--
R-19	08/19/21	FD	--	--	--	--	--	--	0.35	--	--	--
R-19	11/18/21	N	--	--	--	--	--	--	0.31	--	--	--
R-28	01/29/20	N	--	--	--	--	--	--	0.32	--	--	--
R-28	02/19/20	N	--	--	--	--	--	--	0.33	--	--	--
R-28	04/29/20	N	--	--	--	--	--	--	0.41	--	--	--
R-28	08/19/20	N	--	--	--	--	--	--	0.37	--	--	--
R-28	11/18/20	N	140	--	88	--	--	--	0.28	210	580	--
R-28	11/18/20	FD	140	--	88	--	--	--	0.3	210	580	--
R-28	01/27/21	N	--	--	--	--	--	--	0.27	--	--	--
R-28	02/17/21	N	--	--	--	--	--	--	0.47	--	--	--
R-28	05/19/21	N	--	--	--	--	--	--	0.36	--	--	--
R-28	08/18/21	N	--	--	--	--	--	--	0.35	--	--	--
R-28	11/17/21	N	--	--	--	--	--	--	0.3	--	--	--
R-63	01/29/20	N	--	--	--	--	--	--	0.3	--	--	--
R-63	02/19/20	N	--	--	--	--	--	--	0.28	--	--	--
R-63	04/29/20	N	--	--	--	--	--	--	0.42	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
R-63	08/19/20	N	<0.2 J	<1	2.6	120 J	--	--	0.028 J	<0.02 J	--	0.0024	4.9	--	1.5	--	--
R-63	11/18/20	N	<0.2	<1	2.3	110	--	--	0.067	<0.02	--	0.0024	4.6	--	1.5	--	--
R-63	01/27/21	N	<0.2	<1	2.2	120	--	--	0.043	0.027 J	--	0.0019	4.7	--	1.6	--	--
R-63	02/17/21	N	<0.2	<1	2.4	120	--	--	0.053 J	0.041 J	--	0.0033	4.6	--	1.9	--	--
R-63	05/19/21	N	<0.2	<1	2.1	100	--	--	0.13 J	<0.02 J	--	0.0036	4.4	--	1.3	--	--
R-63	05/19/21	FD	<0.2	<1	2.2	110	--	--	0.097 J	<0.02 J	--	0.0036	4.7	--	1.4	--	--
R-63	08/18/21	N	<0.2	<1	2	100	--	--	0.029 J	<0.02	--	0.0017	4.1	--	1.4	--	--
R-63	11/17/21	N	<0.2	<1	2.8	--	--	--	--	--	--	0.0018	4.4 J	--	1.7	--	--
RRB	01/30/20	N	<0.2	<1	2.4	80	--	--	1.10	<0.1 J	--	0.021 J	7	--	2.3	--	--
RRB	02/20/20	N	<0.2	<1	2.1	97 J	--	--	0.16	0.021	--	0.0027	4.8	--	1.5	--	--
RRB	04/30/20	N	<0.2	<1	2.2	110	--	--	0.024	<0.02	--	0.0018	4.7	--	2.9	--	--
RRB	08/20/20	N	<0.2	<1	2.3	110 J	--	--	0.03 J	<0.02 J	--	0.0071	4.7	--	1.4	--	--
RRB	11/19/20	N	<0.2	<1	2.2	110	--	--	0.041	<0.02	--	0.0052	4.6	--	1.4	--	--
RRB	01/28/21	N	<0.2	<1	0.63	98	--	--	35	0.041	--	0.01	4.4	--	0.61	--	--
RRB	02/18/21	N	<0.2	<1	2.3	120	--	--	0.087 J	<0.02 J	--	0.0041	4.7	--	1.3	--	--
RRB	05/20/21	N	<0.2	<1	2.2	110	--	--	<0.02	<0.02	--	0.016	4.4	--	1.2	--	--
RRB	08/19/21	N	<0.2	<1	2.2	110	--	--	0.057	<0.02 J	--	0.0064	4.3	--	1.3	--	--
RRB	11/18/21	N	<0.2	<1	2.8 J	--	--	--	--	--	--	0.024	4.5	--	1.6	--	--
RRB	11/18/21	FD	<0.2	<1	2.9 J	--	--	--	--	--	--	0.025	4.4	--	1.5	--	--
SW1	01/29/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW1	02/19/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW1	04/30/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW1	08/20/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW1	11/18/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW1	01/27/21	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW1	02/17/21	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW1	05/19/21	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW1	08/18/21	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW1	11/17/21	N	<0.2	<1	2.2	--	--	--	--	--	--	0.0069	5.6 J	--	1.1	--	--
SW2	01/29/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW2	02/19/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW2	04/30/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW2	08/20/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW2	11/18/20	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW2	01/27/21	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW2	02/17/21	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW2	05/19/21	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW2	08/18/21	N	<0.2	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
SW2	11/17/21	N	<0.2	<1	2.3	--	--	--	--	--	--	0.0076	5.1 J	--	0.99	--	--
TOPOCK-2	09/20/21	N	11.8	13	12.1	51.9	0.557	37	--	<0.1	4.2	<0.01	19.1	6.71	<1	259	17.9
TOPOCK-3	09/20/21	N	14.2	14.9	13.4	69.3	0.508	30.1	--	<0.1	4.1	<0.01	16.3	5.67	<1	203	18.1
TW-01	11/04/20	N	1,400	1,400	0.71	26	1.6	170	0.065 J	<0.02	21	<0.0005	26	17 J	10	1,000	9.4
TW-01	06/10/21	N	1,400	1,500	<0.1	30	1.3 J	200	--	<0.02	17	<0.0005	25	18 J	10	1,100	9.3
TW-01	06/10/21	FD	1,400	1,500	<0.1	29	1.6 J	210	--	<0.02	19	<0.0005	24	19 J	10	1,200	9.3
TW-01	06/15/21	N	1,400	1,500	--	--	--	--	--	--	--	--	--	--	--	--	--
TW-01	06/16/21	N	1,400	1,500	--	--	--	--	--	--	--	--	--	--	--	--	--
TW-01	06/17/21	N	1,400	1,500	--	--	--	--	--	--	--	--	--	--	--	--	--
TW-01	06/18/21	N	1,400	1,500	--	--	--	--	--	--	--	--	--	--	--	--	--
TW-01	06/19/21	N	1,500	1,500	--	--	--	--	--	--	--	--	--	--	--	--	--
TW-01	06/20/21	N	1,500	1,500	--	--	--	--	--	--	--	--	--	--	--	--	--
TW-01	06/21/21	N	1,400	1,500	--	--	--	--	--	--	--	--	--	--	--	--	--
TW-01	06/28/21	N	1,500	1,600	<0.1	32	1.2	200	--	0.023 J	20 J	<0.0005	34 J	17	10	1,100	11
TW-01	07/08/21	N	--	--	<0.1	--	--	210	--	--	24	<0.0005	35	19 J	11	1,000	--
TW-01	07/12/21	N	1,500	1,700	<0.1	--	--	210	--	--	22 J	--	35	20 J	10	1,000	--

Appendix B
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Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
R-63	08/19/20	N	--	--	--	--	--	--	0.35	--	--	--
R-63	11/18/20	N	--	--	--	--	--	--	0.28	--	--	--
R-63	01/27/21	N	--	--	--	--	--	--	0.28	--	--	--
R-63	02/17/21	N	--	--	--	--	--	--	0.39	--	--	--
R-63	05/19/21	N	--	--	--	--	--	--	0.37	--	--	--
R-63	05/19/21	FD	--	--	--	--	--	--	0.35	--	--	--
R-63	08/18/21	N	--	--	--	--	--	--	0.35	--	--	--
R-63	11/17/21	N	--	--	--	--	--	--	0.3	--	--	--
RRB	01/30/20	N	--	--	--	--	--	--	1.1	--	--	--
RRB	02/20/20	N	--	--	--	--	--	--	0.22	--	--	--
RRB	04/30/20	N	--	--	--	--	--	--	0.31	--	--	--
RRB	08/20/20	N	--	--	--	--	--	--	0.25	--	--	--
RRB	11/19/20	N	--	--	--	--	--	--	--	--	--	--
RRB	01/28/21	N	--	--	--	--	--	--	0.076	--	--	--
RRB	02/18/21	N	--	--	--	--	--	--	0.38	--	--	--
RRB	05/20/21	N	--	--	--	--	--	--	0.32	--	--	--
RRB	08/19/21	N	--	--	--	--	--	--	0.23	--	--	--
RRB	11/18/21	N	--	--	--	--	--	--	0.2	--	--	--
RRB	11/18/21	FD	--	--	--	--	--	--	0.22	--	--	--
SW1	01/29/20	N	--	--	--	--	--	--	--	--	--	--
SW1	02/19/20	N	--	--	--	--	--	--	--	--	--	--
SW1	04/30/20	N	--	--	--	--	--	--	--	--	--	--
SW1	08/20/20	N	--	--	--	--	--	--	--	--	--	--
SW1	11/18/20	N	--	--	--	--	--	--	--	--	--	--
SW1	08/20/20	N	--	--	--	--	--	--	--	--	--	--
SW1	11/18/20	N	--	--	--	--	--	--	--	--	--	--
SW1	01/27/21	N	--	--	--	--	--	--	--	--	--	--
SW1	02/17/21	N	--	--	--	--	--	--	--	--	--	--
SW1	05/19/21	N	--	--	--	--	--	--	--	--	--	--
SW1	08/18/21	N	--	--	--	--	--	--	--	--	--	--
SW1	11/17/21	N	--	--	--	--	--	--	<0.05	--	--	--
SW2	01/29/20	N	--	--	--	--	--	--	--	--	--	--
SW2	02/19/20	N	--	--	--	--	--	--	--	--	--	--
SW2	04/30/20	N	--	--	--	--	--	--	--	--	--	--
SW2	08/20/20	N	--	--	--	--	--	--	--	--	--	--
SW2	11/18/20	N	--	--	--	--	--	--	--	--	--	--
SW2	01/27/21	N	--	--	--	--	--	--	--	--	--	--
SW2	02/17/21	N	--	--	--	--	--	--	--	--	--	--
SW2	05/19/21	N	--	--	--	--	--	--	--	--	--	--
SW2	08/18/21	N	--	--	--	--	--	--	--	--	--	--
SW2	11/17/21	N	--	--	--	--	--	--	<0.05	--	--	--
TOPOCK-2	09/20/21	N	--	--	343	4.22	--	--	--	83.9	765	--
TOPOCK-3	09/20/21	N	--	--	333	4.21	--	--	--	72	549	--
TW-01	11/04/20	N	--	<0.2	--	2.9	--	--	13	520	3,500	<1
TW-01	06/10/21	N	--	<0.2	1,600	2.6	--	--	14	550	3,600	<1
TW-01	06/10/21	FD	--	<0.2	1,500	2.6	--	--	15	540	3,600	<1
TW-01	06/15/21	N	--	--	--	--	--	--	--	--	3,600	--
TW-01	06/16/21	N	--	--	--	--	--	--	--	--	3,500	--
TW-01	06/17/21	N	--	--	--	--	--	--	--	--	3,600	--
TW-01	06/18/21	N	--	--	--	--	--	--	--	--	3,600	--
TW-01	06/19/21	N	--	--	--	--	--	--	--	--	3,600	--
TW-01	06/20/21	N	--	--	--	--	--	--	--	--	3,600	--
TW-01	06/21/21	N	--	--	--	--	--	--	--	--	3,300	--
TW-01	06/28/21	N	--	<0.2	1,500	3.5	--	--	14	530	3,600	<10
TW-01	07/08/21	N	--	--	1,600	--	--	--	14	530	--	--
TW-01	07/12/21	N	--	--	1,600	--	--	--	14	520	3,800	--

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January 2020 to December 2021 Analytical Results
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Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
TW-01	07/12/21	FD	1,500	1,700	<0.1	--	--	210	--	--	24 J	--	35	20 J	9.8	1,100	--
TW-01	07/20/21	N	--	--	<0.1	--	--	230	--	--	22	<0.0005	30	17 J	11	1,200	--
TW-01	07/26/21	N	1,400	1,500	<0.1	--	--	230	--	--	22	--	30	17 J	10	1,200	--
TW-01	08/03/21	N	--	--	<0.1	--	--	240	--	--	25	<0.0005	30	18	12	1,100	--
TW-01	08/16/21	N	1,400	1,400	<0.1	35	1.3	230	--	<0.02	24 J	<0.0005	30	17	12	1,100	10
TW-01	08/16/21	FD	1,400	1,500	<0.1	34	1.3	220	--	<0.02	24 J	<0.0005	29	24	12	1,300	10
TW-01	08/25/21	N	--	--	<0.1 J	--	--	250	--	--	23	<0.0005	31	18	12	1,100	--
TW-01	09/01/21	N	--	1,500 J	<0.1	--	--	240	--	--	23	<0.0005	22	18	9.2	1,200	--
TW-01	09/02/21	N	1,200	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TW-01	09/09/21	N	1,200	1,300	<0.1	42	1.2	240	--	<0.02 J	23 J	<0.0005	39	18	14	700 J	14
TW-01	09/09/21	FD	1,300	1,500	<0.1	42	1.2	230	--	<0.02 J	23 J	<0.0005	38	17	14	1,300 J	14
TW-01	09/15/21	N	--	--	<0.1	--	--	240	--	--	23 J	<0.0005	37	20 J	14	1,200 J	--
TW-01	09/23/21	N	1,200	1,400 J	<0.1 J	--	--	280 J	--	--	25	<0.0005	38 J	19	12	1,200	--
TW-01	09/23/21	FD	1,200	1,400 J	<0.1 J	--	--	270 J	--	--	24	<0.0005	39 J	18	13	1,200	--
TW-01	09/30/21	N	--	--	<0.1 J	--	--	310 J	--	--	30	<0.0005	40	20	14	1,300	--
TW-01	10/07/21	N	1,300	1,300	0.79	37	1.4	260	--	<0.02	25 J	<0.0005	34	22 J	12	1,200	12
TW-01	10/07/21	FD	1,300	1,300	0.72	36	1.5	250	--	<0.02	26 J	<0.0005	34	21 J	12	1,200	12
TW-01	10/20/21	N	1,300	1,400	0.92	--	--	270 J	--	--	26	<0.0005	33	19	13	1,200 J	--
TW-01	10/20/21	FD	1,300	1,400	1	--	--	290 J	--	--	27	<0.0005	34	20	14	1,300 J	--
TW-01	11/02/21	N	1,300	1,300	1.1	38 J	1.4	280	--	<0.02	26 J	<0.0005	32	18 J	13	1,300 J	13
TW-01	11/02/21	FD	1,300	1,300	1	41 J	1.4	260	--	<0.02	25 J	<0.0005	31	18 J	14	1,600 J	13
TW-01	11/11/21	N	1,300	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TW-01	11/15/21	N	1,300	1,300	1.7 J	--	--	240	--	--	24 J	--	32 J	18 J	13	1,200	--
TW-01	11/22/21	N	1,200	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TW-01	12/02/21	N	1,200	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TW-01	12/08/21	N	1,200	1,300	0.76	--	--	--	--	--	--	<0.0005 J	31	--	13	--	--
TW-02D	02/19/20	N	740	670	--	--	--	--	--	--	--	0.14	18	--	3.4	--	--
TW-02D	07/08/21	N	340	370	--	--	--	190	--	<0.02	28	0.067	--	--	--	1,400	--
TW-02D	08/04/21	N	350	360	--	--	--	170	--	<0.02	20	0.052	--	--	--	1,300	--
TW-02D	09/08/21	N	27	35	--	--	--	200	--	<0.02	34 J	0.13	18	--	0.92	1,500	--
TW-02D	09/08/21	FD	27	34	--	--	--	--	--	--	--	0.14	18	--	0.73	--	--
TW-03D	01/08/20	N	470	460	--	--	--	190	--	<0.02	36	0.02	--	--	--	1,800	--
TW-03D	02/05/20	N	460	480	--	--	--	210	--	<0.02	41 J	0.021	--	--	--	1,300	--
TW-03D	03/04/20	N	450	390	--	--	--	230	--	<0.02	33	0.019 J	--	--	--	1,400	--
TW-03D	04/07/20	N	440	420	--	--	--	200	--	<0.1 J	30	0.021	--	--	--	1,500	--
TW-03D	05/05/20	N	450	410	--	--	--	200	--	<0.02	27	0.019	--	--	--	1,400	--
TW-03D	07/23/20	N	390	410	--	--	--	170	--	<0.02	27	0.019	--	--	--	1,400	--
TW-03D	08/04/20	N	440	430	--	--	--	190	--	<0.1	26	0.019	--	--	--	1,300 J	--
TW-03D	09/01/20	N	430	420	--	--	--	200	--	0.036 J	29	0.02	--	--	--	1,400	--
TW-03D	10/07/20	N	420	400	--	--	--	190	--	0.093 J	37 J	0.019	--	--	--	1,500	--
TW-03D	11/03/20	N	440	420	--	--	--	160	--	0.079 J	30	0.019	--	--	--	1,500 J	--
TW-03D	12/03/20	N	440	430	--	--	--	160 J	--	<0.02	32	0.017	--	--	--	1,600 J	--
TW-03D	01/06/21	N	440	410	--	--	--	180	--	<0.02	29	0.018	--	--	--	1,500 J	--
TW-03D	02/03/21	N	420	430	--	--	--	150	--	0.093 J	26	0.019	--	--	--	1,300	--
TW-03D	03/03/21	N	400	420	--	--	--	170 J	--	0.12 J	36 J	0.019	--	--	--	1,500	--
TW-03D	04/07/21	N	410	400	--	--	--	180	--	0.027	24 J	0.019	--	--	--	1,500	--
TW-03D	05/05/21	N	390	360	--	--	--	200	--	0.18 J	24	0.019	--	--	--	1,400	--
TW-03D	06/02/21	N	390	370	--	--	--	160 J	--	<0.02	26 J	0.019	--	--	--	1,600 J	--
TW-03D	10/07/21	N	390	380	--	--	--	210	--	<0.02	28	0.0071	--	--	--	1,500 J	--
TW-03D	11/02/21	N	400	390	--	--	--	230 J	--	<0.02	30	0.01	--	--	--	1,400 J	--
TW-03D	12/16/21	N	400	390	<0.1	36	--	--	--	<0.02	--	0.013	22	--	3.4	--	--
TW-04	06/25/20	N	3.7	4.1	--	--	--	--	--	--	--	0.07	41	--	0.58	--	--
TW-04	11/30/20	N	6.4	6.6	--	--	3.2 J	330 J	--	<0.1	71 J	0.048	56	--	0.63	4,000 J	--
TW-04	06/07/21	N	7.9	7.4	--	--	--	--	--	--	--	0.0063 J	28	--	<0.5	--	--

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
TW-01	07/12/21	FD	--	--	1,600	--	--	--	15	520	3,700	--
TW-01	07/20/21	N	--	--	1,600	--	--	--	13	510	--	--
TW-01	07/26/21	N	--	--	1,600	--	--	--	14	510	3,900	--
TW-01	08/03/21	N	--	--	1,600	--	--	--	13	520	--	--
TW-01	08/16/21	N	--	<0.2	1,700	3.4	--	--	12	530	4,000	<5
TW-01	08/16/21	FD	--	<0.2	1,700	3.2	--	--	13	530	3,900	<1
TW-01	08/25/21	N	--	--	1,700	--	--	--	12	510	--	--
TW-01	09/01/21	N	--	--	1,700	3.5	--	--	12	510	4,000	--
TW-01	09/02/21	N	--	--	--	--	--	--	--	--	--	--
TW-01	09/09/21	N	--	<0.2	1,700	3.5	--	--	12	510	4,000	<1
TW-01	09/09/21	FD	--	<0.2	1,700	3.4	--	--	11	500	4,100	<1
TW-01	09/15/21	N	--	--	1,700	--	--	--	12	520	--	--
TW-01	09/23/21	N	--	--	1,700	--	--	--	11	520	4,100	--
TW-01	09/23/21	FD	--	--	1,700	--	--	--	11	510	3,900	--
TW-01	09/30/21	N	--	--	1,700	--	--	--	15	540	--	--
TW-01	10/07/21	N	--	<0.2	1,800	3.9	--	--	11	520	3,800	<1
TW-01	10/07/21	FD	--	<0.2	1,800	4.2	--	--	12	510	4,000	<1
TW-01	10/20/21	N	--	--	1,800	--	--	--	11	510	3,900	--
TW-01	10/20/21	FD	--	--	1,800	--	--	--	11	520	3,900	--
TW-01	11/02/21	N	--	<0.2	1,800	3.8	--	--	11	510	3,900	<1
TW-01	11/02/21	FD	--	<0.2	1,700	4.1	--	--	11	510	4,000	<1
TW-01	11/11/21	N	--	--	--	--	--	--	--	--	--	--
TW-01	11/15/21	N	--	--	1,800	--	--	--	11	500	3,800	--
TW-01	11/22/21	N	--	--	--	--	--	--	--	--	--	--
TW-01	11/15/21	N	--	--	1,800	--	--	--	11	500	3,800	--
TW-01	11/22/21	N	--	--	--	--	--	--	--	--	--	--
TW-01	12/02/21	N	--	--	--	--	--	--	--	--	--	--
TW-01	12/08/21	N	--	--	--	--	--	--	11	--	--	--
TW-02D	02/19/20	N	260	--	1,400	--	--	--	--	390	3,400	--
TW-02D	07/08/21	N	150	--	2,100	--	--	--	2.4	470	4,400	--
TW-02D	08/04/21	N	160	--	2,100	--	--	--	2.4	480	4,500	--
TW-02D	09/08/21	N	200	--	1,900	--	--	--	1.1	460	4,100	--
TW-02D	09/08/21	FD	190	--	1,900	--	--	--	--	460	4,200	--
TW-03D	01/08/20	N	160	--	2,100	--	--	--	2.6	510	4,500	--
TW-03D	02/05/20	N	150	--	2,200	--	--	--	2.5	510	4,500	--
TW-03D	03/04/20	N	160	--	2,100	--	--	--	2.9	500	4,600	--
TW-03D	04/07/20	N	170	--	2,100	--	--	--	2.9	500	4,700	--
TW-03D	05/05/20	N	160	--	2,300	--	--	--	3.4	500	4,700	--
TW-03D	07/23/20	N	150	--	2,100	--	--	--	2.3	490	4,500	--
TW-03D	08/04/20	N	150	--	2,100	--	--	--	2.5	490	4,600	--
TW-03D	09/01/20	N	150	--	2,000	--	--	--	2.9	470	4,500	--
TW-03D	10/07/20	N	150	--	2,100	--	--	--	2.8	480	4,400	--
TW-03D	11/03/20	N	150	--	2,000	--	--	--	2.5	470	4,300	--
TW-03D	12/03/20	N	160	--	2,000	--	--	--	--	480	4,500	--
TW-03D	01/06/21	N	150	--	2,100	--	--	--	2.8	470	4,400	--
TW-03D	02/03/21	N	150	--	2,100	--	--	--	3	500	4,400	--
TW-03D	03/03/21	N	140	--	2,100	--	--	--	2.6	480	4,400	--
TW-03D	04/07/21	N	150	--	2,100	--	--	--	2.8	490	4,400	--
TW-03D	05/05/21	N	160	--	2,100	--	--	--	2.6	470	4,400	--
TW-03D	06/02/21	N	160	--	2,000	--	--	--	2.7	480	4,300	--
TW-03D	10/07/21	N	150	--	2,100	--	--	--	2.4 J	480	4,400	--
TW-03D	11/02/21	N	150	--	2,100	--	--	--	2.6	480	4,500	--
TW-03D	12/16/21	N	--	<0.23	--	--	--	<5	2.4	500	--	<1
TW-04	06/25/20	N	--	--	--	--	--	--	--	--	--	--
TW-04	11/30/20	N	68	--	6,700	--	--	--	--	1,100	14,000	--
TW-04	06/07/21	N	--	--	--	--	--	--	--	--	--	--

Appendix B
January 2020 to December 2021 Analytical Results
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Hexavalent Chromium (µg/L)	Total Dissolved Chromium (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Barium (µg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (mg/L)	Dissolved Molybdenum (µg/L)	Dissolved Potassium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Sodium (mg/L)	Dissolved Vanadium (µg/L)
TW-04	12/06/21	N	9.1	9.3 J	--	--	--	--	--	--	--	--	--	--	--	--	--
TW-05	06/25/20	N	12	12	--	--	--	--	--	--	--	0.0046	32	--	0.58	--	--
TW-05	12/07/20	N	18	16 J	--	--	2.5 J	380 J	--	<0.1 J	36 J	0.0015	25 J	--	0.96 J	2,600 J	--
TW-05	05/28/21	N	12	12	--	--	--	--	--	--	--	--	32	--	0.77	--	--
TW-05	12/13/21	N	14	15	<0.1	--	--	--	--	--	--	0.0014	--	--	--	--	--

Abbreviations:
-- = not applicable or not available
< = not detected at reporting limit, as shown
N = primary sample
FD = field duplicate
J = estimated concentration
mg/L= milligram(s) per liter
µg/L = microgram(s) per liter

Appendix B
January 2020 to December 2021 Analytical Resul
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company
Topock Compressor Station, Needles, California

Location ID	Sample Date	Sample Type	Alkalinity (mg/L)	Ammonia (as Nitrogen) (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate/ Nitrite as N (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)
TW-04	12/06/21	N	--	--	--	--	--	--	--	--	--	--
TW-05	06/25/20	N	--	--	--	--	--	--	--	--	--	--
TW-05	12/07/20	N	38	--	5,200	--	--	--	--	600	11,000	--
TW-05	05/28/21	N	--	--	--	--	--	--	--	--	--	--
TW-05	12/13/21	N	--	--	--	--	--	--	--	--	--	--

Abbreviations:
-- = not applicable or not available
< = not detected at reporting limit, as shown
N = primary sample
FD = field duplicate
J = estimated concentration
mg/L= milligram(s) per liter
µg/L = microgram(s) per liter

Appendix C

Laboratory Reports, Fourth Quarter 2021

(Provided on CD with Hard Copy)

For additional help with the information provided in the lab reports, please contact Alison Schaffer, Arcadis Report Lead, at 303.471.3575

January 03, 2022

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048378

RE: PG&E Topock - PCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 14, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET Laboratories - Las Vegas.

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.

Subcontracted Analyses:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Iron in QC sample N048400-003CMSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 5310C:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N048400-003F-MS and N048400-003F-MSD at 1x dilution possibly due to matrix interference. QC samples were diluted and recovery passed criteria. Thus sample reference N048400-003F and MS/MSD were reported at 5x dilution. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048378
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048378-001A	MW-86-030-Q421	Groundwater	12/14/2021 1:56:00 PM	12/14/2021	1/3/2022
N048378-001B	MW-86-030-Q421	Groundwater	12/14/2021 1:56:00 PM	12/14/2021	1/3/2022
N048378-001C	MW-86-030-Q421	Groundwater	12/14/2021 1:56:00 PM	12/14/2021	1/3/2022
N048378-001D	MW-86-030-Q421	Groundwater	12/14/2021 1:56:00 PM	12/14/2021	1/3/2022
N048378-002A	MW-86-066-Q421	Groundwater	12/14/2021 1:29:00 PM	12/14/2021	1/3/2022
N048378-002B	MW-86-066-Q421	Groundwater	12/14/2021 1:29:00 PM	12/14/2021	1/3/2022
N048378-002C	MW-86-066-Q421	Groundwater	12/14/2021 1:29:00 PM	12/14/2021	1/3/2022
N048378-002D	MW-86-066-Q421	Groundwater	12/14/2021 1:29:00 PM	12/14/2021	1/3/2022
N048378-003A	MW-86-120-Q421	Groundwater	12/14/2021 12:58:00 PM	12/14/2021	1/3/2022
N048378-003B	MW-86-120-Q421	Groundwater	12/14/2021 12:58:00 PM	12/14/2021	1/3/2022
N048378-003C	MW-86-120-Q421	Groundwater	12/14/2021 12:58:00 PM	12/14/2021	1/3/2022
N048378-003D	MW-86-120-Q421	Groundwater	12/14/2021 12:58:00 PM	12/14/2021	1/3/2022
N048378-004A	MW-86-140-Q421	Groundwater	12/14/2021 12:23:00 PM	12/14/2021	1/3/2022
N048378-004B	MW-86-140-Q421	Groundwater	12/14/2021 12:23:00 PM	12/14/2021	1/3/2022
N048378-004C	MW-86-140-Q421	Groundwater	12/14/2021 12:23:00 PM	12/14/2021	1/3/2022
N048378-004D	MW-86-140-Q421	Groundwater	12/14/2021 12:23:00 PM	12/14/2021	1/3/2022
N048378-005A	EB-746-Q421	Groundwater	12/14/2021 2:30:00 PM	12/14/2021	1/3/2022

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-86-030-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 1:56:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211215A**	QC Batch: **R158907**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/15/2021 11:50 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**			PrepDate:	**12/15/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/18/2021 02:58 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:**	MW-86-066-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 1:29:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211215A**	QC Batch: **R158907**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/15/2021 12:09 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**			PrepDate:	**12/15/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/18/2021 03:10 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:**	MW-86-120-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 12:58:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211215A**	QC Batch: **R158907**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/15/2021 02:03 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**			PrepDate:	**12/15/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/18/2021 03:22 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:**	MW-86-140-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 12:23:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211215A**	QC Batch: **R158907**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/15/2021 02:40 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**			PrepDate:	**12/15/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/18/2021 03:34 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:**	EB-746-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 2:30:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211215A**	QC Batch: **R158907**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/15/2021 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: N048378
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158907	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907
Client ID:	PBW	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465399

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-R158907	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907
Client ID:	LCSW	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465400

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.012	0.20	5.000	0	100	90	110				

Sample ID	N048308-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907
Client ID:	ZZZZZZ	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465402

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.042	1.0	5.000	0	101	90	110				

Sample ID	N048378-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907
Client ID:	ZZZZZZ	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465404

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075	0.20	1.000	0	107	90	110				

Sample ID	N048378-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907
Client ID:	ZZZZZZ	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465406

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.054	0.20	1.000	0	105	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: N048378
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048378-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **ZZZZZZ**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.026	0.20	1.000	0	103	90	110				

Sample ID **N048378-002AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **ZZZZZZ**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.041	0.20	1.000	0	104	90	110	1.054	1.23	20	

Sample ID **N048378-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **ZZZZZZ**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465412**

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

Sample ID **N048378-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **ZZZZZZ**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465414**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.916	1.0	5.000	0	98.3	90	110				

Sample ID **N048378-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **ZZZZZZ**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465418**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.836	1.0	5.000	0	96.7	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: N048378
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048295-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907
Client ID:	ZZZZZZ	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465420

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.830	1.0	5.000	0	96.6	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: N048378
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90702	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/15/2021	RunNo:	159016
Client ID:	PBW	Batch ID:	90702	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/18/2021	SeqNo:	4471231

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

Sample ID	LCS-90702	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/15/2021	RunNo:	159016
Client ID:	LCSW	Batch ID:	90702	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/18/2021	SeqNo:	4471232

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.138	1.0	10.00	0	101	85	115				

Sample ID	N048350-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/15/2021	RunNo:	159016
Client ID:	ZZZZZZ	Batch ID:	90702	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/18/2021	SeqNo:	4471238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	15.513	1.0	10.00	6.026	94.9	75	125				

Sample ID	N048350-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/15/2021	RunNo:	159016
Client ID:	ZZZZZZ	Batch ID:	90702	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/18/2021	SeqNo:	4471240

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	15.573	1.0	10.00	6.026	95.5	75	125	15.51	0.387	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:**	MW-86-030-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 1:56:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.5	0.084	1.0		mg/L	1	12/17/2021 11:57 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:**	MW-86-066-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 1:29:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 12:13 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:**	MW-86-120-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 12:58:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 12:28 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:**	MW-86-140-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 12:23:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 01:15 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: N048378
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID **MB-R159005**	SampType: **MBLK**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159005**
Client ID: **PBW**	Batch ID: **R159005**	TestNo: **SM 5310C**		Analysis Date: **12/17/2021**	SeqNo: **4470818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID **LCS-R159005**	SampType: **LCS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159005**
Client ID: **LCSW**	Batch ID: **R159005**	TestNo: **SM 5310C**		Analysis Date: **12/17/2021**	SeqNo: **4470819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.867	1.0	5.000	0	97.3	85	115				

Sample ID **N048400-003F-MS**	SampType: **MS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159005**
Client ID: **ZZZZZZ**	Batch ID: **R159005**	TestNo: **SM 5310C**		Analysis Date: **12/17/2021**	SeqNo: **4470845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	20.892	5.0	25.00	0	83.6	75	125				

Sample ID **N048400-003F-MSD**	SampType: **MSD**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159005**
Client ID: **ZZZZZZ**	Batch ID: **R159005**	TestNo: **SM 5310C**		Analysis Date: **12/17/2021**	SeqNo: **4470846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	20.721	5.0	25.00	0	82.9	75	125	20.89	0.819	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:**	MW-86-030-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 1:56:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**			PrepDate:	**12/16/2021**		Analyst: **DJ**
Iron	33	13	20		µg/L	1	12/21/2021 02:08 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:**	MW-86-066-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 1:29:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**			PrepDate:	**12/16/2021**		Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/21/2021 11:57 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:**	MW-86-120-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 12:58:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**				PrepDate:	**12/16/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/21/2021 12:02 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:**	MW-86-140-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 12:23:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**				PrepDate:	**12/16/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/21/2021 12:07 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: N048378
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-90727	SampType:	MBLK	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159075
Client ID:	PBW	Batch ID:	90727	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2021	SeqNo:	4473522

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

Sample ID	LCS-90727	SampType:	LCS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159075
Client ID:	LCSW	Batch ID:	90727	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2021	SeqNo:	4473523

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107.658	20	100.0	0	108	85	115				

Sample ID	N048400-003CMS	SampType:	MS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159075
Client ID:	ZZZZZZ	Batch ID:	90727	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2021	SeqNo:	4473537

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	91.004	20	100.0	15.12	75.9	75	125				

Sample ID	N048400-003CMSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159075
Client ID:	ZZZZZZ	Batch ID:	90727	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2021	SeqNo:	4473538

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	86.623	20	100.0	15.12	71.5	75	125	91.00	4.93	20	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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048378
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N048400-003C-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:		RunNo:	159075
Client ID:	ZZZZZZ	Batch ID:	90727	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2021	SeqNo:	4473536

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	85.113	20	100.0	15.12	70.0	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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-86-030-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 1:56:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**			PrepDate:	**12/15/2021**		Analyst: **CEI**
Arsenic	2.6	0.050	0.10		µg/L	1	12/18/2021 02:58 PM
Barium	95	0.083	1.0		µg/L	1	12/18/2021 02:58 PM
Manganese	420	0.13	2.5		µg/L	5	12/18/2021 03:04 PM
Molybdenum	8.0	0.12	0.50		µg/L	1	12/18/2021 02:58 PM
Selenium	ND	0.044	0.50		µg/L	1	12/18/2021 02:58 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:**	MW-86-066-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 1:29:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**			PrepDate:	**12/15/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/18/2021 03:10 PM
Barium	91	0.083	1.0		µg/L	1	12/18/2021 03:10 PM
Manganese	760	0.13	2.5		µg/L	5	12/18/2021 03:16 PM
Molybdenum	16	0.12	0.50		µg/L	1	12/18/2021 03:10 PM
Selenium	ND	0.044	0.50		µg/L	1	12/18/2021 03:10 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:**	MW-86-120-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 12:58:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**				PrepDate:	**12/15/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/18/2021 03:22 PM
Barium	42	0.083	1.0		µg/L	1	12/18/2021 03:22 PM
Manganese	370	0.13	2.5		µg/L	5	12/18/2021 03:28 PM
Molybdenum	33	0.12	0.50		µg/L	1	12/18/2021 03:22 PM
Selenium	ND	0.044	0.50		µg/L	1	12/18/2021 03:22 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:**	MW-86-140-Q421
Lab Order:	N048378	**Collection Date:**	12/14/2021 12:23:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048378-004		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211218A** QC Batch: **90702** PrepDate: **12/15/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/18/2021 03:34 PM
Barium	55	0.083	1.0		µg/L	1	12/18/2021 03:34 PM
Manganese	730	0.13	2.5		µg/L	5	12/18/2021 03:40 PM
Molybdenum	34	0.12	0.50		µg/L	1	12/18/2021 03:34 PM
Selenium	ND	0.044	0.50		µg/L	1	12/18/2021 03:34 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: N048378
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90702**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **PBW**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471290**

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									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-90702**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **LCSW**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.234	0.10	10.00	0	102	85	115				
Barium	9.886	1.0	10.00	0	98.9	85	115				
Manganese	100.232	0.50	100.0	0	100	85	115				
Molybdenum	10.087	0.50	10.00	0	101	85	115				
Selenium	9.812	0.50	10.00	0	98.1	85	115				

Sample ID **N048350-001B-MS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **ZZZZZZ**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.985	0.10	10.00	2.537	104	75	125				
Barium	59.356	1.0	10.00	48.79	106	75	125				
Manganese	149.052	0.50	100.0	54.90	94.2	75	125				
Molybdenum	33.242	0.50	10.00	21.96	113	75	125				
Selenium	11.091	0.50	10.00	1.783	93.1	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: N048378
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **N048350-001B-MSD** SampType: **MSD** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/15/2021** RunNo: **159016**
Client ID: **ZZZZZZ** Batch ID: **90702** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/18/2021** SeqNo: **4471299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.668	0.10	10.00	2.537	101	75	125	12.99	2.47	20	
Barium	59.399	1.0	10.00	48.79	106	75	125	59.36	0.0732	20	
Manganese	148.073	0.50	100.0	54.90	93.2	75	125	149.1	0.659	20	
Molybdenum	33.392	0.50	10.00	21.96	114	75	125	33.24	0.450	20	
Selenium	11.479	0.50	10.00	1.783	97.0	75	125	11.09	3.43	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

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
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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 ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr# 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled ✓; 2. Headspace; 3. Container Intact ✓; 4. Seal Present ✓; 5. IR number 3; 6. Method of Cooling: ICE; Sample Temp: 4.2 °C
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Luke Baumgarte	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	
Title: Field Tech			
Signature: Date: 12/14/21	Sampled By: Luke Baumgarte		Courier: Tracking No.:

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

Project Name: PG&E Topock - PCM
Project Number: 30110373.4Q21GW
Signature: Date: 12/14/21

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Barium, Iron, Manganese (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium (500mL poly)	Total Organic Carbon (SM5310C); H2SO4 (3x40 mL VOA)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048378-01	MW-86-030-Q421	12/14/2021	13:56		X	X	X	X	X	X	E	6	P	BNS	
2	-02	MW-86-066-Q421	12/14/2021	13:29		X	X	X	X	X	X	E	6	P	BNS	
3	-03	MW-86-120-Q421	12/14/2021	12:58		X	X	X	X	X	X	E	6	P	BNS	
4	-04	MW-86-140-Q421	12/14/2021	12:23		X	X	X	X	X	X	E	6	P	BNS	
5	-05	EB-746-Q421	12/14/2021	14:30		X						E	6	P	BNS	
												E	1	P	BNS	
7																
8																
9																
10																
11																
12																
13																
14																

Relinquished by (Signature and Printed Name): Luke Baumgarte Date/Time: 12/14/21 1514
Relinquished by (Signature and Printed Name): Ramon Arcamea Date/Time: 12/14/21 1514
Relinquished by (Signature and Printed Name): Ramon Arcamea Date/Time: 12/14/21 1810
Relinquished by (Signature and Printed Name): Ramon Arcamea Date/Time: 12/14/21 1810
Relinquished by (Signature and Printed Name): Date/Time:
Relinquished 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
- [x] E = Routine 5-7 Workdays

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	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:	12/14/2021	Workorder:	N048378
Rep sample Temp (Deg C):	4.2	IR Gun ID:	3
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 By: YR YRJ 12/15/2021

Reviewed By: MBC 12/17/2021

ASSET Laboratories

WORK ORDER Summary

17-Dec-21

WorkOrder: N048378

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/14/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048378-001A	MW-86-030-Q421	12/14/2021 1:56:00 PM	12/29/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048378-001B			12/29/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048378-001C			12/29/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048378-001D			12/29/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048378-002A	MW-86-066-Q421	12/14/2021 1:29:00 PM	12/29/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048378-002B			12/29/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048378-002C			12/29/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048378-002D			12/29/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048378-003A	MW-86-120-Q421	12/14/2021 12:58:00 PM	12/29/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048378-003B			12/29/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048378-003C			12/29/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

17-Dec-21

WorkOrder: N048378

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/14/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048378-003C	MW-86-120-Q421	12/14/2021 12:58:00 PM	12/29/2021	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048378-003D			12/29/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048378-004A	MW-86-140-Q421	12/14/2021 12:23:00 PM	12/29/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048378-004B			12/29/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048378-004C			12/29/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048378-004D			12/29/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048378-005A	EB-746-Q421	12/14/2021 2:30:00 PM	12/29/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048378-006A	FOLDER	12/29/2021	12/29/2021		Folder	Folder	☐	☐	☐	LAB
			12/29/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/29/2021		Folder	Folder	☐	☐	☐	LAB

January 04, 2022

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048398

RE: PG&E Topock - IM3, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 15, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (2.8 ug/L) and hexavalent chromium (0.5 ug/L) for sample N048398-001 (OW-01D-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (4.1 ug/L) and hexavalent chromium (1.2 ug/L) for sample N048398-002 (OW-01M-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (31 ug/L) and hexavalent chromium (8.4 ug/L) for sample N048398-003 (OW-01S-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.8 ug/L) and hexavalent chromium (0.28 ug/L) for sample N048398-004 (OW-02D-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery and RPD criteria for some analytes in QC samples N048398-002CMS1, N048398-002CMSD1, N048419-007CMS1, N048419-

007CMSD1, N048398-002C-MS2, N048398-002C-MSD2, N048419-007C-MS2 and N048419-007C-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery and RPD criteria for some analytes in QC samples N048419-007CMS1, N048419-007CMSD1, N048398-002C-MS2 and N048419-007C-MS2 possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (2.8 ug/L) and hexavalent chromium (0.5 ug/L) for sample N048398-001 (OW-01D-Q421) 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 2.0 and 1.2 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (4.1 ug/L) and hexavalent chromium (1.2 ug/L) for sample N048398-002 (OW-01M-Q421) 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 3.9 and 1.8 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (31 ug/L) and hexavalent chromium (8.4 ug/L) for sample N048398-003 (OW-01S-Q421) 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 31 and 11 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.8 ug/L) and hexavalent chromium (0.28 ug/L) for sample N048398-004 (OW-02D-Q421) 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 1.6 and 0.66 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *04-Jan-22*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab Order: N048398
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048398-001A	OW-01D-Q421	Groundwater	12/15/2021 8:27:00 AM	12/15/2021	1/4/2022
N048398-001B	OW-01D-Q421	Groundwater	12/15/2021 8:27:00 AM	12/15/2021	1/4/2022
N048398-001C	OW-01D-Q421	Groundwater	12/15/2021 8:27:00 AM	12/15/2021	1/4/2022
N048398-001D	OW-01D-Q421	Groundwater	12/15/2021 8:27:00 AM	12/15/2021	1/4/2022
N048398-002A	OW-01M-Q421	Groundwater	12/15/2021 10:06:00 AM	12/15/2021	1/4/2022
N048398-002B	OW-01M-Q421	Groundwater	12/15/2021 10:06:00 AM	12/15/2021	1/4/2022
N048398-002C	OW-01M-Q421	Groundwater	12/15/2021 10:06:00 AM	12/15/2021	1/4/2022
N048398-002D	OW-01M-Q421	Groundwater	12/15/2021 10:06:00 AM	12/15/2021	1/4/2022
N048398-003A	OW-01S-Q421	Groundwater	12/15/2021 9:23:00 AM	12/15/2021	1/4/2022
N048398-003B	OW-01S-Q421	Groundwater	12/15/2021 9:23:00 AM	12/15/2021	1/4/2022
N048398-003C	OW-01S-Q421	Groundwater	12/15/2021 9:23:00 AM	12/15/2021	1/4/2022
N048398-003D	OW-01S-Q421	Groundwater	12/15/2021 9:23:00 AM	12/15/2021	1/4/2022
N048398-004A	OW-02D-Q421	Groundwater	12/15/2021 11:43:00 AM	12/15/2021	1/4/2022
N048398-004B	OW-02D-Q421	Groundwater	12/15/2021 11:43:00 AM	12/15/2021	1/4/2022
N048398-004C	OW-02D-Q421	Groundwater	12/15/2021 11:43:00 AM	12/15/2021	1/4/2022
N048398-004D	OW-02D-Q421	Groundwater	12/15/2021 11:43:00 AM	12/15/2021	1/4/2022
N048398-005A	OW-02M-Q421	Groundwater	12/15/2021 12:46:00 PM	12/15/2021	1/4/2022
N048398-005B	OW-02M-Q421	Groundwater	12/15/2021 12:46:00 PM	12/15/2021	1/4/2022
N048398-005C	OW-02M-Q421	Groundwater	12/15/2021 12:46:00 PM	12/15/2021	1/4/2022
N048398-005D	OW-02M-Q421	Groundwater	12/15/2021 12:46:00 PM	12/15/2021	1/4/2022
N048398-006A	OW-02S-Q421	Groundwater	12/15/2021 1:30:00 PM	12/15/2021	1/4/2022
N048398-006B	OW-02S-Q421	Groundwater	12/15/2021 1:30:00 PM	12/15/2021	1/4/2022
N048398-006C	OW-02S-Q421	Groundwater	12/15/2021 1:30:00 PM	12/15/2021	1/4/2022
N048398-006D	OW-02S-Q421	Groundwater	12/15/2021 1:30:00 PM	12/15/2021	1/4/2022
N048398-007A	EB-747-Q421	Groundwater	12/15/2021 3:15:00 PM	12/15/2021	1/4/2022

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01D-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 8:27:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211216E**	QC Batch: **90736**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	12/17/2021

Qualifiers:

B	Analyte detected in 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-01M-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 10:06:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211216E**	QC Batch: **90736**				PrepDate: **12/16/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	12/17/2021

Qualifiers:

B	Analyte detected in 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-01S-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 9:23:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211216E**	QC Batch: **90736**				PrepDate: **12/16/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	12/17/2021

Qualifiers:

B	Analyte detected in 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-02D-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 11:43:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211216E**	QC Batch: **90736**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	12/17/2021

Qualifiers:

B	Analyte detected in 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-02M-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 12:46:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211216E**	QC Batch: **90736**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	12/17/2021

Qualifiers:

B	Analyte detected in 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-02S-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 1:30:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211216E**	QC Batch: **90736**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	2200	25	25		mg/L	1	12/17/2021

Qualifiers:

B	Analyte detected in 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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-90736	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/16/2021	RunNo:	158978
Client ID:	LCSW	Batch ID:	90736	TestNo:	SM2540C			Analysis Date:	12/17/2021	SeqNo:	4468191

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	979.000	10	1000	0	97.9	80	120				

Sample ID	MB-90736	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/16/2021	RunNo:	158978
Client ID:	PBW	Batch ID:	90736	TestNo:	SM2540C			Analysis Date:	12/17/2021	SeqNo:	4468192

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	N048398-002DDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/16/2021	RunNo:	158978
Client ID:	ZZZZZZ	Batch ID:	90736	TestNo:	SM2540C			Analysis Date:	12/17/2021	SeqNo:	4468197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4275.000	50						4105	4.06	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-01D-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 8:27:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216B**	QC Batch: **R158975**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	0.50	0.025	0.20		µg/L	1	12/16/2021 08:33 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211223B**	QC Batch: **90725**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	2.8	0.035	1.0		µg/L	1	12/23/2021 01:20 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01M-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 10:06:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216B** QC Batch: **R158975**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1.2	0.025	0.20		µg/L	1	12/16/2021 07:37 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211223B** QC Batch: **90725**				PrepDate: **12/16/2021**			Analyst: **CEI**
Chromium	4.1	0.035	1.0		µg/L	1	12/23/2021 01:32 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-01S-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 9:23:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217A**	QC Batch: **R159035**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	8.4	0.025	0.20		µg/L	1	12/17/2021 09:29 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211223B**	QC Batch: **90725**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	31	0.035	1.0		µg/L	1	12/23/2021 02:37 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-02D-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 11:43:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216B**	QC Batch: **R158975**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	0.28	0.025	0.20		µg/L	1	12/16/2021 08:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211223B**	QC Batch: **90725**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	1.8	0.035	1.0		µg/L	1	12/23/2021 02:49 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-02M-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 12:46:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211216B** QC Batch: **R158975** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	1.1	0.025	0.20		µg/L	1	12/16/2021 09:30 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP8_211223B** QC Batch: **90725** PrepDate: **12/16/2021** Analyst: **CEI**							
Chromium	1.6	0.035	1.0		µg/L	1	12/23/2021 03:01 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-02S-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 1:30:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216B** QC Batch: **R158975**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	15	0.13	1.0		µg/L	5	12/16/2021 09:49 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211223B** QC Batch: **90725**				PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	15	0.035	1.0		µg/L	1	12/23/2021 03:13 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:**	EB-747-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 3:15:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216B**	QC Batch: **R158975**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/16/2021 10:08 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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R158975	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	LCSW	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467954

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.161	0.20	5.000	0	103	90	110				

Sample ID	MB-R158975	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	PBW	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467955

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

Sample ID	N048398-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.238	0.20	1.000	1.244	99.5	90	110				

Sample ID	N048398-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467960

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.273	0.20	1.000	1.244	103	90	110	2.238	1.55	20	

Sample ID	N048398-004ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467962

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.289	0.20						0.2833	2.10	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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048398-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467963

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.335	0.20	1.000	0.2833	105	90	110				

Sample ID	N048398-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467965

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.505	0.20	1.000	0.5050	100	90	110				

Sample ID	N048398-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467969

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.199	0.20	1.000	1.148	105	90	110				

Sample ID	N048398-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467971

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	40.201	1.0	25.00	14.85	101	90	110				

Sample ID	N048398-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467973

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				

Qualifiers:

- B Analyte detected in 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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048400-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467975

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.533	1.0	5.000	0	90.7	90	110				

Sample ID	N048400-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467977

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.737	1.0	5.000	0	94.7	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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R159035	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035		
Client ID:	PBW	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472005		
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-R159035	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035		
Client ID:	LCSW	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472006		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.101	0.20	5.000	0	102	90	110						

Sample ID	N048399-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035		
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472008		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	0.977	0.20	1.000	0	97.7	90	110						

Sample ID	N048398-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035		
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472010		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	13.511	0.20	5.000	8.431	102	90	110						

Sample ID	N048419-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035		
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472012		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.013	0.20	1.000	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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048419-007AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472013

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075	0.20	1.000	0	108	90	110	1.013	5.92	20	

Sample ID	N048419-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472017

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.039	0.20	1.000	0	104	90	110				

Sample ID	N048419-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472019

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID	N048419-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472021

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.937	0.20	1.000	0.8836	105	90	110				

Sample ID	N048419-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472025

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	108	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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048398-003ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472026

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.678	0.20						8.431	2.89	20	

Sample ID	N048419-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472028

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	795.710	20	500.0	306.3	97.9	90	110				

Sample ID	N048419-017AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472030

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	650.530	10	250.0	399.2	101	90	110				

Sample ID	N048419-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472034

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	38.597	1.0	25.00	13.22	101	90	110				

Sample ID	N048419-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472036

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.001	0.20	1.000	0	100	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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048419-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	0	102	90	110				

Sample ID **N048419-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	809.750	20	500.0	309.2	100	90	110				

Sample ID **N048419-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.010	0.20	1.000	0	101	90	110				

Sample ID **N048419-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.091	1.0	5.000	0	102	90	110				

Sample ID **N048419-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.860	1.0	25.00	30.88	99.9	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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048419-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035		
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472050		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.016	1.0	5.000	0	100	90	110						

Sample ID	N048419-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035		
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472053		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.063	1.0	5.000	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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90725	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159245
Client ID:	PBW	Batch ID:	90725	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4484094

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

Sample ID	LCS-90725	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159245
Client ID:	LCSW	Batch ID:	90725	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4484095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.970	1.0	10.00	0	99.7	85	115				

Sample ID	N048398-002CMS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159245
Client ID:	ZZZZZZ	Batch ID:	90725	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4484103

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13.048	1.0	10.00	4.122	89.3	75	125				

Sample ID	N048398-002CMSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159245
Client ID:	ZZZZZZ	Batch ID:	90725	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4484107

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13.252	1.0	10.00	4.122	91.3	75	125	13.05	1.55	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:**	OW-01D-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 8:27:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211216B**	QC Batch: **R158947**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	86	1.2	5.0		mg/L	1	12/16/2021 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01M-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 10:06:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211216B**	QC Batch: **R158947**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	110	1.2	5.0		mg/L	1	12/16/2021 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01S-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 9:23:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211216B**	QC Batch: **R158947**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	270	1.2	5.0		mg/L	1	12/16/2021 04:30 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02D-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 11:43:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211216B**	QC Batch: **R158947**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	86	1.2	5.0		mg/L	1	12/16/2021 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02M-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 12:46:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211216B**	QC Batch: **R158947**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	97	1.2	5.0		mg/L	1	12/16/2021 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02S-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 1:30:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211216B**	QC Batch: **R158947**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	58	1.2	5.0		mg/L	1	12/16/2021 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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R158947**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158947**
Client ID: **LCSW**	Batch ID: **R158947**	TestNo: **SM 2320 B**		Analysis Date: **12/16/2021**	SeqNo: **4467116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	100.209	5.0	100.0	0	100	85	115				

Sample ID **MB-R158947**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158947**
Client ID: **PBW**	Batch ID: **R158947**	TestNo: **SM 2320 B**		Analysis Date: **12/16/2021**	SeqNo: **4467117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N048389-006BDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158947**
Client ID: **ZZZZZZ**	Batch ID: **R158947**	TestNo: **SM 2320 B**		Analysis Date: **12/16/2021**	SeqNo: **4467119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	451.983	5.0						453.0	0.231	30	

Sample ID **N048398-001DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158947**
Client ID: **ZZZZZZ**	Batch ID: **R158947**	TestNo: **SM 2320 B**		Analysis Date: **12/16/2021**	SeqNo: **4467121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	184.760	5.0	100.0	85.59	99.2	75	125				

Sample ID **N048398-001DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158947**
Client ID: **ZZZZZZ**	Batch ID: **R158947**	TestNo: **SM 2320 B**		Analysis Date: **12/16/2021**	SeqNo: **4467122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	183.716	5.0	100.0	85.59	98.1	75	125	184.8	0.567	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
Lab Order: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048398-001

Client Sample ID: OW-01D-Q421
Collection Date: 12/15/2021 8:27:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216B** QC Batch: **R158943**				PrepDate:			Analyst: **RAB**
Chloride	2000	33	250		mg/L	500	12/16/2021 11:40 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216B** QC Batch: **R158943**				PrepDate:			Analyst: **RAB**
Fluoride	2.3	0.064	0.50		mg/L	5	12/16/2021 06:24 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	510	3.0	25		mg/L	50	12/17/2021 10:01 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
Lab Order: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048398-002

Client Sample ID: OW-01M-Q421
Collection Date: 12/15/2021 10:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216B** QC Batch: **R158943**				PrepDate:			Analyst: **RAB**
Chloride	2000	33	250		mg/L	500	12/16/2021 10:52 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216B** QC Batch: **R158943**				PrepDate:			Analyst: **RAB**
Fluoride	2.1	0.064	0.50		mg/L	5	12/16/2021 04:33 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	510	3.0	25		mg/L	50	12/17/2021 09:14 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
Lab Order: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048398-003

Client Sample ID: OW-01S-Q421
Collection Date: 12/15/2021 9:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216B** QC Batch: **R158943**				PrepDate:			Analyst: **RAB**
Chloride	1700	33	250		mg/L	500	12/17/2021 12:11 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216B** QC Batch: **R158943**				PrepDate:			Analyst: **RAB**
Fluoride	1.4	0.064	0.50		mg/L	5	12/16/2021 07:11 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	360	3.0	25		mg/L	50	12/17/2021 10:17 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
Lab Order: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048398-004

Client Sample ID: OW-02D-Q421
Collection Date: 12/15/2021 11:43:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216B** QC Batch: **R158943**				PrepDate:			Analyst: **RAB**
Chloride	2100	33	250		mg/L	500	12/17/2021 12:27 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216B** QC Batch: **R158943**				PrepDate:			Analyst: **RAB**
Fluoride	3.1	0.064	0.50		mg/L	5	12/16/2021 07:27 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	500	3.0	25		mg/L	50	12/17/2021 11:04 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
Lab Order: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048398-005

Client Sample ID: OW-02M-Q421
Collection Date: 12/15/2021 12:46:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216B** QC Batch: **R158943**				PrepDate:			Analyst: **RAB**
Chloride	2000	33	250		mg/L	500	12/17/2021 12:43 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216B** QC Batch: **R158943**				PrepDate:			Analyst: **RAB**
Fluoride	2.5	0.064	0.50		mg/L	5	12/16/2021 07:43 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	510	3.0	25		mg/L	50	12/17/2021 11:20 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
Lab Order: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048398-006

Client Sample ID: OW-02S-Q421
Collection Date: 12/15/2021 1:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216B** QC Batch: **R158943**				PrepDate:			Analyst: **RAB**
Chloride	1100	33	250		mg/L	500	12/17/2021 01:31 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216B** QC Batch: **R158943**				PrepDate:			Analyst: **RAB**
Fluoride	2.7	0.064	0.50		mg/L	5	12/16/2021 07:59 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	180	1.2	10		mg/L	20	12/17/2021 11:36 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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	LCS-R158943_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	158943
Client ID:	LCSW	Batch ID:	R158943	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467610

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.999	0.50	2.000	0	99.9	90	110				

Sample ID	MB-R158943_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	158943
Client ID:	PBW	Batch ID:	R158943	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467611

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

Sample ID	N048398-002DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	158943
Client ID:	ZZZZZZ	Batch ID:	R158943	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467617

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3039.800	250	1000	2004	104	80	120				

Sample ID	N048398-002DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	158943
Client ID:	ZZZZZZ	Batch ID:	R158943	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467618

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3041.750	250	1000	2004	104	80	120	3040	0.0641	20	

Sample ID	N048398-001DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	158943
Client ID:	ZZZZZZ	Batch ID:	R158943	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467620

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2023.400	250						2012	0.550	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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	LCS-R158943_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	158943		
Client ID:	LCSW	Batch ID:	R158943	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467576		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Fluoride	1.300	0.10	1.250	0	104	90	110						

Sample ID	MB-R158943_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	158943		
Client ID:	PBW	Batch ID:	R158943	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467577		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Fluoride	ND	0.10											

Sample ID	N048398-002DMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	158943		
Client ID:	ZZZZZZ	Batch ID:	R158943	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467579		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Fluoride	8.725	0.50	6.250	2.101	106	80	120						

Sample ID	N048398-002DMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	158943		
Client ID:	ZZZZZZ	Batch ID:	R158943	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467580		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Fluoride	8.853	0.50	6.250	2.101	108	80	120	8.725	1.46	20			

Sample ID	N048405-004BMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	158943		
Client ID:	ZZZZZZ	Batch ID:	R158943	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467582		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Fluoride	8.332	0.50	6.250	1.623	107	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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **N048407-005BDUP**	SampType: **DUP**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:			RunNo: **158943**				
Client ID: **ZZZZZZ**	Batch ID: **R158943**	TestNo: **EPA 300.0**		Analysis Date: **12/16/2021**			SeqNo: **4467584**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.477	0.50						1.784	18.8	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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	LCS-R159009_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	LCSW	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/17/2021	SeqNo:	4471654

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.140	0.50	4.000	0	104	90	110				

Sample ID	MB-R159009_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	PBW	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/17/2021	SeqNo:	4471655

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.248	0.50									

Sample ID	N048398-002DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	ZZZZZZ	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/17/2021	SeqNo:	4471657

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	719.525	25	200.0	505.9	107	80	120				

Sample ID	N048398-002DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	ZZZZZZ	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/17/2021	SeqNo:	4471658

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	723.170	25	200.0	505.9	109	80	120	719.5	0.505	20	

Sample ID	N048400-003DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	ZZZZZZ	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/18/2021	SeqNo:	4471667

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	618.925	25	200.0	406.7	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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N048400-003DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	ZZZZZZ	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/18/2021	SeqNo:	4471668

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	624.860	25	200.0	406.7	109	80	120	618.9	0.954	20	

Sample ID	N048400-008DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	ZZZZZZ	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/18/2021	SeqNo:	4471670

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	492.365	25						485.6	1.38	20	

Sample ID	N048400-008DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	ZZZZZZ	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/18/2021	SeqNo:	4471671

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	698.925	25	200.0	485.6	107	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	**Client Sample ID:**	OW-01D-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 8:27:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222E**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Boron	1.1	0.035	0.10		mg/L	1	12/22/2021 05:56 PM
Calcium	140	0.18	0.50		mg/L	1	12/22/2021 05:56 PM
Magnesium	24	0.017	0.10		mg/L	1	12/22/2021 05:56 PM
Potassium	17	0.69	2.5		mg/L	5	12/23/2021 12:30 PM
Sodium	1400	34	50		mg/L	100	12/23/2021 02:31 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-01M-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 10:06:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222E**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Boron	1.0	0.035	0.10		mg/L	1	12/22/2021 06:10 PM
Calcium	150	0.18	0.50		mg/L	1	12/22/2021 06:10 PM
Magnesium	24	0.017	0.10		mg/L	1	12/22/2021 06:10 PM
Potassium	15	0.69	2.5		mg/L	5	12/23/2021 12:35 PM
Sodium	1500	85	120		mg/L	250	12/23/2021 02:38 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-01S-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 9:23:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222E**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Boron	0.88	0.035	0.10		mg/L	1	12/22/2021 06:35 PM
Calcium	350	0.18	0.50		mg/L	1	12/22/2021 06:35 PM
Magnesium	54	0.017	0.10		mg/L	1	12/22/2021 06:35 PM
Potassium	17	0.69	2.5		mg/L	5	12/23/2021 12:39 PM
Sodium	1000	34	50		mg/L	100	12/23/2021 03:20 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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02D-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 11:43:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222E**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Boron	1.1	0.035	0.10		mg/L	1	12/22/2021 06:41 PM
Calcium	190	0.18	0.50		mg/L	1	12/22/2021 06:41 PM
Magnesium	31	0.017	0.10		mg/L	1	12/22/2021 06:41 PM
Potassium	21	0.69	2.5		mg/L	5	12/23/2021 12:44 PM
Sodium	1600	34	50		mg/L	100	12/23/2021 03:22 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-02M-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 12:46:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222E**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Boron	1.1	0.035	0.10		mg/L	1	12/22/2021 06:57 PM
Calcium	150	0.18	0.50		mg/L	1	12/22/2021 06:57 PM
Magnesium	25	0.017	0.10		mg/L	1	12/22/2021 06:57 PM
Potassium	14	0.69	2.5		mg/L	5	12/23/2021 12:48 PM
Sodium	1600	34	50		mg/L	100	12/23/2021 03:25 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	**Client Sample ID:**	OW-02S-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 1:30:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222E**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Boron	0.59	0.035	0.10		mg/L	1	12/22/2021 07:03 PM
Calcium	130	0.18	0.50		mg/L	1	12/22/2021 07:03 PM
Magnesium	16	0.017	0.10		mg/L	1	12/22/2021 07:03 PM
Potassium	11	0.69	2.5		mg/L	5	1/3/2022 03:08 PM
Sodium	640	34	50		mg/L	100	12/23/2021 03:35 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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID	N048398-002CMS1	SampType:	MS	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/20/2021	RunNo:	159142
Client ID:	ZZZZZZ	Batch ID:	90778	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2021	SeqNo:	4476795

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5.827	0.10	5.000	0.9983	96.6	75	125				
Calcium	164.864	0.50	10.00	148.2	166	75	125				S
Magnesium	34.473	0.10	10.00	24.02	105	75	125				

Sample ID	N048398-002CMSD1	SampType:	MSD	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/20/2021	RunNo:	159142
Client ID:	ZZZZZZ	Batch ID:	90778	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2021	SeqNo:	4476796

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5.443	0.10	5.000	0.9983	88.9	75	125	5.827	6.82	20	
Calcium	155.255	0.50	10.00	148.2	70.1	75	125	164.9	6.00	20	S
Magnesium	32.503	0.10	10.00	24.02	84.9	75	125	34.47	5.88	20	

Sample ID	MB-90778	SampType:	MBLK	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/20/2021	RunNo:	159142
Client ID:	PBW	Batch ID:	90778	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2021	SeqNo:	4476800

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.10									
Calcium	ND	0.50									
Magnesium	ND	0.10									

Sample ID	N048419-007CMS1	SampType:	MS	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/20/2021	RunNo:	159142
Client ID:	ZZZZZZ	Batch ID:	90778	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2021	SeqNo:	4476818

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	9.322	0.10	5.000	0.2361	182	75	125				S
Calcium	103.342	0.50	10.00	88.91	144	75	125				S
Magnesium	39.163	0.10	10.00	21.14	180	75	125				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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID **N048419-007CMSD1** SampType: **MSD** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **12/20/2021** RunNo: **159142**
Client ID: **ZZZZZZ** Batch ID: **90778** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/22/2021** SeqNo: **4476819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	9.263	0.10	5.000	0.2361	181	75	125	9.322	0.633	20	S
Calcium	105.294	0.50	10.00	88.91	164	75	125	103.3	1.87	20	S
Magnesium	39.761	0.10	10.00	21.14	186	75	125	39.16	1.52	20	S

Sample ID **LCS1-90778** SampType: **LCS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **12/20/2021** RunNo: **159142**
Client ID: **LCSW** Batch ID: **90778** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/22/2021** SeqNo: **4476849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4.558	0.10	5.000	0	91.2	85	115				
Calcium	8.623	0.50	10.00	0	86.2	85	115				
Magnesium	9.348	0.10	10.00	0	93.5	85	115				

Sample ID **MB-90778** SampType: **MBLK** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **12/20/2021** RunNo: **159159**
Client ID: **PBW** Batch ID: **90778** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/23/2021** SeqNo: **4479115**

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

Sample ID **LCS2-90778** SampType: **LCS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **12/20/2021** RunNo: **159159**
Client ID: **LCSW** Batch ID: **90778** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/23/2021** SeqNo: **4479116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19.562	0.50	20.00	0	97.8	85	115				
Sodium	19.875	0.50	20.00	0	99.4	85	115				

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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID	N048398-002C-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/20/2021	RunNo:	159159
Client ID:	ZZZZZZ	Batch ID:	90778	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4479156

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	45.444	2.5	20.00	15.02	152	75	125				S

Sample ID	N048398-002C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/20/2021	RunNo:	159159
Client ID:	ZZZZZZ	Batch ID:	90778	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4479157

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	36.268	2.5	20.00	15.02	106	75	125	45.44	22.5	20	R

Sample ID	N048398-002C-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/20/2021	RunNo:	159159
Client ID:	ZZZZZZ	Batch ID:	90778	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4479158

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1738.495	120	20.00	1468	1350	75	125				S

Sample ID	N048398-002C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/20/2021	RunNo:	159159
Client ID:	ZZZZZZ	Batch ID:	90778	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4479159

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1399.935	120	20.00	1468	-339	75	125	1738	21.6	20	SR

Sample ID	N048419-007C-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/20/2021	RunNo:	159159
Client ID:	ZZZZZZ	Batch ID:	90778	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4479204

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	31.668	2.5	20.00	5.238	132	75	125				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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID	N048419-007C-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/20/2021	RunNo:	159159
Client ID:	ZZZZZZ	Batch ID:	90778	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4479205

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	312.962	12	20.00	263.6	247	75	125				S

Sample ID	N048419-007C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/20/2021	RunNo:	159159
Client ID:	ZZZZZZ	Batch ID:	90778	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4479206

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	29.218	2.5	20.00	5.238	120	75	125	31.67	8.05	20	

Sample ID	N048419-007C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/20/2021	RunNo:	159159
Client ID:	ZZZZZZ	Batch ID:	90778	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4479207

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	292.165	12	20.00	263.6	143	75	125	313.0	6.87	20	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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID **N048398-002C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: RunNo: **159142**
Client ID: **ZZZZZZ** Batch ID: **90778** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/22/2021** SeqNo: **4476794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5.605	0.10	5.000	0.9983	92.1	80	120				
Calcium	159.783	0.50	10.00	148.2	115	80	120				
Magnesium	33.414	0.10	10.00	24.02	94.0	80	120				

Sample ID **N048419-007C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: RunNo: **159142**
Client ID: **ZZZZZZ** Batch ID: **90778** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/22/2021** SeqNo: **4476815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	9.193	0.10	5.000	0.2361	179	80	120				S
Calcium	104.797	0.50	10.00	88.91	159	80	120				S
Magnesium	39.232	0.10	10.00	21.14	181	80	120				S

Sample ID **N048398-002C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: RunNo: **159159**
Client ID: **ZZZZZZ** Batch ID: **90778** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/23/2021** SeqNo: **4479154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	100.923	2.5	100.0	15.02	85.9	80	120				

Sample ID **N048398-002C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: RunNo: **159159**
Client ID: **ZZZZZZ** Batch ID: **90778** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/23/2021** SeqNo: **4479155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	6340.082	120	5000	1468	97.4	80	120				

Sample ID **N048419-007C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: RunNo: **159159**
Client ID: **ZZZZZZ** Batch ID: **90778** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/23/2021** SeqNo: **4479200**

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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID	N048419-007C-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:		RunNo:	159159
Client ID:	ZZZZZZ	Batch ID:	90778	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4479200

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	104.980	2.5	100.0	5.238	99.7	80	120				

Sample ID	N048419-007C-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:		RunNo:	159159
Client ID:	ZZZZZZ	Batch ID:	90778	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4479203

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	708.435	12	500.0	263.6	89.0	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	**Client Sample ID:**	OW-01D-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 8:27:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211223B**	QC Batch: **90725**				PrepDate:	**12/16/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/23/2021 01:20 PM
Barium	32	0.083	1.0		µg/L	1	12/23/2021 01:20 PM
Manganese	4.7	0.026	0.50		µg/L	1	12/23/2021 01:20 PM
Molybdenum	23	0.12	0.50		µg/L	1	12/23/2021 01:20 PM
Selenium	8.2	0.044	0.50		µg/L	1	12/23/2021 01:20 PM
Vanadium	3.2	0.067	1.0		µg/L	1	12/23/2021 01:20 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01M-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 10:06:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211223B**	QC Batch: **90725**				PrepDate:	**12/16/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/23/2021 01:32 PM
Barium	63	0.083	1.0		µg/L	1	12/23/2021 01:32 PM
Manganese	4.8	0.026	0.50		µg/L	1	12/23/2021 01:32 PM
Molybdenum	24	0.12	0.50		µg/L	1	12/23/2021 01:32 PM
Selenium	8.2	0.044	0.50		µg/L	1	12/23/2021 01:32 PM
Vanadium	3.0	0.067	1.0		µg/L	1	12/23/2021 01:32 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-01S-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 9:23:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211223B**	QC Batch: **90725**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/23/2021 02:37 PM
Barium	110	0.083	1.0		µg/L	1	12/23/2021 02:37 PM
Manganese	26	0.026	0.50		µg/L	1	12/23/2021 02:37 PM
Molybdenum	8.9	0.12	0.50		µg/L	1	12/23/2021 02:37 PM
Selenium	2.9	0.044	0.50		µg/L	1	12/23/2021 02:37 PM
Vanadium	2.5	0.067	1.0		µg/L	1	12/23/2021 02:37 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-02D-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 11:43:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211223B**	QC Batch: **90725**				PrepDate:	**12/16/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/23/2021 02:49 PM
Barium	24	0.083	1.0		µg/L	1	12/23/2021 02:49 PM
Manganese	1.7	0.026	0.50		µg/L	1	12/23/2021 02:49 PM
Molybdenum	24	0.12	0.50		µg/L	1	12/23/2021 02:49 PM
Selenium	8.4	0.044	0.50		µg/L	1	12/23/2021 02:49 PM
Vanadium	1.9	0.067	1.0		µg/L	1	12/23/2021 02:49 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-02M-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 12:46:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211223B**	QC Batch: **90725**				PrepDate: **12/16/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/23/2021 03:01 PM
Barium	38	0.083	1.0		µg/L	1	12/23/2021 03:01 PM
Manganese	ND	0.026	0.50		µg/L	1	12/23/2021 03:01 PM
Molybdenum	23	0.12	0.50		µg/L	1	12/23/2021 03:01 PM
Selenium	7.8	0.044	0.50		µg/L	1	12/23/2021 03:01 PM
Vanadium	2.8	0.067	1.0		µg/L	1	12/23/2021 03:01 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-02S-Q421
Lab Order:	N048398	**Collection Date:**	12/15/2021 1:30:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048398-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211223B**	QC Batch: **90725**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/23/2021 03:13 PM
Barium	130	0.083	1.0		µg/L	1	12/23/2021 03:13 PM
Manganese	0.83	0.026	0.50		µg/L	1	12/23/2021 03:13 PM
Molybdenum	21	0.12	0.50		µg/L	1	12/23/2021 03:13 PM
Selenium	2.0	0.044	0.50		µg/L	1	12/23/2021 03:13 PM
Vanadium	3.4	0.067	1.0		µg/L	1	12/23/2021 03:13 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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90725** SampType: **MBLK** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/16/2021** RunNo: **159245**
Client ID: **PBW** Batch ID: **90725** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/23/2021** SeqNo: **4484294**

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									
Manganese	0.195	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									
Vanadium	ND	1.0									

Sample ID **LCS-90725** SampType: **LCS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/16/2021** RunNo: **159245**
Client ID: **LCSW** Batch ID: **90725** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/23/2021** SeqNo: **4484295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.726	0.10	10.00	0	97.3	85	115				
Barium	10.008	1.0	10.00	0	100	85	115				
Manganese	97.347	0.50	100.0	0	97.3	85	115				
Molybdenum	10.077	0.50	10.00	0	101	85	115				
Selenium	9.282	0.50	10.00	0	92.8	85	115				
Vanadium	9.892	1.0	10.00	0	98.9	85	115				

Sample ID **N048398-002CMS** SampType: **MS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/16/2021** RunNo: **159245**
Client ID: **ZZZZZZ** Batch ID: **90725** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/23/2021** SeqNo: **4484303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.919	0.10	10.00	0	89.2	75	125				
Barium	73.304	1.0	10.00	63.07	102	75	125				
Manganese	95.016	0.50	100.0	4.802	90.2	75	125				
Molybdenum	34.071	0.50	10.00	23.86	102	75	125				
Selenium	15.933	0.50	10.00	8.162	77.7	75	125				
Vanadium	12.896	1.0	10.00	3.006	98.9	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: N048398
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048398-002CMSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159245
Client ID:	ZZZZZZ	Batch ID:	90725	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4484307

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.193	0.10	10.00	0	91.9	75	125	8.919	3.03	20	
Barium	73.909	1.0	10.00	63.07	108	75	125	73.30	0.822	20	
Manganese	95.114	0.50	100.0	4.802	90.3	75	125	95.02	0.103	20	
Molybdenum	34.617	0.50	10.00	23.86	108	75	125	34.07	1.59	20	
Selenium	16.798	0.50	10.00	8.162	86.4	75	125	15.93	5.29	20	
Vanadium	12.868	1.0	10.00	3.006	98.6	75	125	12.90	0.215	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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

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Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: [illegible]	Address:	Sample Receipt Condition: 1. Chilled ✓; 2. Headspace; 3. Container Intact ✓; 4. Seal Present ✓; 5. IR number 3; 6. Method of Cooling: ICE
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@aecom.com P.O.#	Sample Temp: 2.5°C
Submitted By: Rossie Tep	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Courier: ASSET
Title: Field Tech	Sampled By: Rossie Tep	Global ID:	Tracking No.:
Signature: RT Date: 12/15/21	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		
I hereby authorize ASSET Labs to perform the tests indicated below	Signature: RT Date: 12/15/21		
Project Name: PG&E Topock - IM3			
Project Number: 30110373.4Q21GW			

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 125 mL poly	Dissolved metals (SW6020) FF; HNO3 Arsenic, Boron, Barium, Calcium, Potassium, Magnesium, Manganese, Sodium, Vanadium 500mL poly	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, 500mL poly	Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium 500mL poly	Total Dissolved Solids (SM2540C); 4°C 1 liter poly	Chloride, Fluoride, Sulfate (EPA300.0); 4°C 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 4°C 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048398-01	OW-01D-Q421	12/15/2021	8:27		X	X	X	X	X	X	X	X	E	4	P	BNS	
2	-02	OW-01M-Q421	12/15/2021	10:06		X	X	X	X	X	X	X	X	E	4	P	BNS	MS/MSD
3	-03	OW-01S-Q421	12/15/2021	9:23		X	X	X	X	X	X	X	X	E	4	P	BNS	
4	-04	OW-02D-Q421	12/15/2021	11:43		X	X	X	X	X	X	X	X	E	4	P	BNS	
5	-05	OW-02M-Q421	12/15/2021	12:46		X	X	X	X	X	X	X	X	E	4	P	BNS	
6	-06	OW-02S-Q421	12/15/2021	13:30		X	X	X	X	X	X	X	X	E	4	P	BNS	
7	-07	EB-747-Q421	12/15/2021	15:15		X								E	1	P	BNS	
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		

Reliquished by (Signature and Printed Name)	Date/Time	Reliquished by (Signature and Printed Name)	Date/Time
RT Rossie Tep	12/15/21 1635	[illegible] RICHARD RICKMEIER	12/15/21 1635
[illegible] RICHARD RICKMEIER	12/15/21 1930	[illegible] RICHARD RICKMEIER	12/15/21 1930

Turn Around Time (TAT)

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

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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: B (NH4)2SO4/NH4OH

Container Type: T=Tube; V=VOA; P=Pint; J=Jar; B=Tedlar; G=Glass; M=Metal; M=Metal; 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:	12/15/2021	Workorder:	N048398
Rep sample Temp (Deg C):	2.5	IR Gun ID:	3
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 By: GGJ GGarcia 12/16/2021

Reviewed By: MBC 12/17/2021

ASSET Laboratories

WORK ORDER Summary

16-Dec-21

WorkOrder: N048398

Client ID: ARCUS02

Project: PG&E Topock - IM3, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/15/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048398-001A	OW-01D-Q421	12/15/2021 8:27:00 AM	12/30/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048398-001B			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048398-001C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048398-001D			12/30/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/30/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/30/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048398-002A	OW-01M-Q421	12/15/2021 10:06:00 AM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☑	☐	WW
N048398-002B			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☑	☑	SUB
N048398-002C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☑	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
N048398-002D			12/30/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☑	☐	WW

ASSET Laboratories

WORK ORDER Summary

16-Dec-21

WorkOrder: N048398

Client ID: ARCUS02

Project: PG&E Topock - IM3, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/15/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048398-002D	OW-01M-Q421	12/15/2021 10:06:00 AM	12/30/2021	Groundwater		Total Dissolved Solids Prep	☐	☑	☐	WW
			12/30/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☑	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☑	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☑	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☑	☐	WW
N048398-003A	OW-01S-Q421	12/15/2021 9:23:00 AM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048398-003B			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048398-003C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048398-003D			12/30/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/30/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/30/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048398-004A	OW-02D-Q421	12/15/2021 11:43:00 AM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048398-004B			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048398-004C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

16-Dec-21

WorkOrder: N048398

Client ID: ARCUS02

Project: PG&E Topock - IM3, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/15/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048398-004C	OW-02D-Q421	12/15/2021 11:43:00 AM	12/30/2021	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048398-004D			12/30/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/30/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/30/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048398-005A	OW-02M-Q421	12/15/2021 12:46:00 PM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048398-005B			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048398-005C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048398-005D			12/30/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/30/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/30/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

16-Dec-21

WorkOrder: N048398

Client ID: ARCUS02

Project: PG&E Topock - IM3, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/15/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048398-005D	OW-02M-Q421	12/15/2021 12:46:00 PM	12/30/2021	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048398-006A	OW-02S-Q421	12/15/2021 1:30:00 PM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048398-006B			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048398-006C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048398-006D			12/30/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/30/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/30/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048398-007A	EB-747-Q421	12/15/2021 3:15:00 PM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048398-008A	FOLDER	12/30/2021	12/30/2021		Folder	Folder	☐	☐	☐	LAB
			12/30/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/30/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Riggie Tep

16-Dec-21

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**SM4500-NO3F**		
N048398-001B / OW-01D-Q421	Groundwater	12/15/2021 8:27:00 AM	8OZP	1		
N048398-002B / OW-01M-Q421	Groundwater	12/15/2021 10:06:00 AM	8OZP	1	MS/MSD	
N048398-003B / OW-01S-Q421	Groundwater	12/15/2021 9:23:00 AM	8OZP	1		
N048398-004B / OW-02D-Q421	Groundwater	12/15/2021 11:43:00 AM	8OZP	1		
N048398-005B / OW-02M-Q421	Groundwater	12/15/2021 12:46:00 PM	8OZP	1		
N048398-006B / OW-02S-Q421	Groundwater	12/15/2021 1:30:00 PM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48398A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555562630

		Date/Time			Date/Time
Relinquished by:	YRJ	12/16/2021 1630	**Received by:**		
Relinquished by:			**Received by:**		

January 04, 2022

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048399

RE: PG&E Topock - RCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 15, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N048399-001 due to matrix interference. Sample was analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Sample was reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (1.8 ug/L) and hexavalent chromium (0 ug/L) for sample N048399-001 (MW-48-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (1.8 ug/L) and hexavalent chromium (0 ug/L) for sample N048399-001 (MW-48-Q421) 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 1.6 and 0.73 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048399
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048399-001A	MW-48-Q421	Groundwater	12/15/2021 1:20:00 PM	12/15/2021	1/4/2022
N048399-001B	MW-48-Q421	Groundwater	12/15/2021 1:20:00 PM	12/15/2021	1/4/2022
N048399-001C	MW-48-Q421	Groundwater	12/15/2021 1:20:00 PM	12/15/2021	1/4/2022
N048399-002A	MW-62-065-Q421	Groundwater	12/15/2021 12:50:00 PM	12/15/2021	1/4/2022
N048399-002B	MW-62-065-Q421	Groundwater	12/15/2021 12:50:00 PM	12/15/2021	1/4/2022
N048399-002C	MW-62-065-Q421	Groundwater	12/15/2021 12:50:00 PM	12/15/2021	1/4/2022
N048399-003A	EB-749-Q421	Groundwater	12/15/2021 3:30:00 PM	12/15/2021	1/4/2022
N048399-004A	MW-59-100-Q421	Groundwater	12/15/2021 2:28:00 PM	12/15/2021	1/4/2022
N048399-004B	MW-59-100-Q421	Groundwater	12/15/2021 2:28:00 PM	12/15/2021	1/4/2022
N048399-004C	MW-59-100-Q421	Groundwater	12/15/2021 2:28:00 PM	12/15/2021	1/4/2022

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-48-Q421
Lab Order:	N048399	**Collection Date:**	12/15/2021 1:20:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048399-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/16/2021 06:40 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211223B**	QC Batch: **90725**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	1.8	0.035	1.0		µg/L	1	12/23/2021 03:36 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:**	MW-62-065-Q421
Lab Order:	N048399	**Collection Date:**	12/15/2021 12:50:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048399-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	580	2.5	20		µg/L	100	12/16/2021 05:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211223B**	QC Batch: **90725**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	610	0.18	5.0		µg/L	5	12/23/2021 03:54 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:**	EB-749-Q421
Lab Order:	N048399	**Collection Date:**	12/15/2021 3:30:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048399-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217A**	QC Batch: **R159035**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/17/2021 09:10 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:**	MW-59-100-Q421
Lab Order:	N048399	**Collection Date:**	12/15/2021 2:28:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048399-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	2000	5.0	40		µg/L	200	12/16/2021 05:43 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211229A**	QC Batch: **90725**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	2000	0.88	25		µg/L	25	12/29/2021 06:59 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: N048399
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158974	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	PBW	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467900

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-R158974	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	LCSW	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467901

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.143	0.20	5.000	0	103	90	110				

Sample ID	N048400-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467903

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6808.900	100	2500	4360	98.0	90	110				

Sample ID	N048400-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467905

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10448.300	200	5000	5467	99.6	90	110				

Sample ID	N048400-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467907

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5743.850	100	2500	3193	102	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: N048399
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048400-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467909

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5201.100	100	2500	2770	97.2	90	110				

Sample ID	N048400-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467913

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1200.530	20	500.0	711.2	97.9	90	110				

Sample ID	N048400-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467915

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2124.040	40	1000	1164	96.0	90	110				

Sample ID	N048400-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467917

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1544.520	40	1000	567.2	97.7	90	110				

Sample ID	N048400-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467919

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1135.760	20	500.0	646.6	97.8	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: N048399
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048400-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467921

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5726.700	100	2500	3299	97.1	90	110				

Sample ID	N048400-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467925

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4669.350	100	2500	2190	99.2	90	110				

Sample ID	N048400-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467927

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5383.000	100	2500	2936	97.9	90	110				

Sample ID	N048400-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467929

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5375.500	100	2500	2907	98.7	90	110				

Sample ID	N048400-003AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467930

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5753.300	100	2500	3193	102	90	110	5744	0.164	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: N048399
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048400-002ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467931

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5697.300	200						5467	4.13	20	

Sample ID	N048400-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467933

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.018	0.20	1.000	0	102	90	110				

Sample ID	N048399-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467937

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1075.310	20	500.0	582.4	98.6	90	110				

Sample ID	N048399-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467941

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2969.780	40	1000	1985	98.5	90	110				

Sample ID	N048400-016AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467943

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.037	1.0	5.000	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: N048399
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048399-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467945

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.663	1.0	5.000	0.6175	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: N048399
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R159035	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	PBW	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472005

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-R159035	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	LCSW	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472006

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.101	0.20	5.000	0	102	90	110				

Sample ID	N048399-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472008

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.977	0.20	1.000	0	97.7	90	110				

Sample ID	N048398-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472010

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.511	0.20	5.000	8.431	102	90	110				

Sample ID	N048419-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472012

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.013	0.20	1.000	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: N048399
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048419-007AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075	0.20	1.000	0	108	90	110	1.013	5.92	20	

Sample ID **N048419-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.039	0.20	1.000	0	104	90	110				

Sample ID **N048419-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N048419-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.937	0.20	1.000	0.8836	105	90	110				

Sample ID **N048419-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472025**

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	108	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: N048399
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048398-003ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472026

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.678	0.20						8.431	2.89	20	

Sample ID	N048419-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472028

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	795.710	20	500.0	306.3	97.9	90	110				

Sample ID	N048419-017AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472030

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	650.530	10	250.0	399.2	101	90	110				

Sample ID	N048419-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472034

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	38.597	1.0	25.00	13.22	101	90	110				

Sample ID	N048419-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159035
Client ID:	ZZZZZZ	Batch ID:	R159035	TestNo:	EPA 218.6			Analysis Date:	12/17/2021	SeqNo:	4472036

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.001	0.20	1.000	0	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: N048399
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048419-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	0	102	90	110				

Sample ID **N048419-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	809.750	20	500.0	309.2	100	90	110				

Sample ID **N048419-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.010	0.20	1.000	0	101	90	110				

Sample ID **N048419-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.091	1.0	5.000	0	102	90	110				

Sample ID **N048419-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.860	1.0	25.00	30.88	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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048399
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048419-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.016	1.0	5.000	0	100	90	110				

Sample ID **N048419-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.063	1.0	5.000	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: N048399
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90725	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159245
Client ID:	PBW	Batch ID:	90725	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4484094

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

Sample ID	LCS-90725	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159245
Client ID:	LCSW	Batch ID:	90725	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4484095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.970	1.0	10.00	0	99.7	85	115				

Sample ID	N048398-002CMS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159245
Client ID:	ZZZZZZ	Batch ID:	90725	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4484103

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13.048	1.0	10.00	4.122	89.3	75	125				

Sample ID	N048398-002CMSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159245
Client ID:	ZZZZZZ	Batch ID:	90725	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4484107

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13.252	1.0	10.00	4.122	91.3	75	125	13.05	1.55	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:**	MW-48-Q421
Lab Order:	N048399	**Collection Date:**	12/15/2021 1:20:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048399-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211223B**	QC Batch: **90725**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/23/2021 03:36 PM
Manganese	34	0.026	0.50		µg/L	1	12/23/2021 03:36 PM
Molybdenum	9.9	0.12	0.50		µg/L	1	12/23/2021 03:36 PM
Selenium	ND	0.044	0.50		µg/L	1	12/29/2021 06:41 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:**	MW-62-065-Q421
Lab Order:	N048399	**Collection Date:**	12/15/2021 12:50:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048399-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211223B**	QC Batch: **90725**				PrepDate:	**12/16/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/23/2021 03:48 PM
Manganese	ND	0.026	0.50		µg/L	1	12/23/2021 03:48 PM
Molybdenum	11	0.12	0.50		µg/L	1	12/23/2021 03:48 PM
Selenium	3.4	0.044	0.50		µg/L	1	12/29/2021 06:47 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:**	MW-59-100-Q421
Lab Order:	N048399	**Collection Date:**	12/15/2021 2:28:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048399-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211223B**	QC Batch: **90725**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/23/2021 04:00 PM
Manganese	9.7	0.026	0.50		µg/L	1	12/23/2021 04:00 PM
Molybdenum	8.0	0.12	0.50		µg/L	1	12/23/2021 04:00 PM
Selenium	2.1	0.044	0.50		µg/L	1	12/29/2021 06:53 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: N048399
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90725**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/16/2021**	RunNo: **159245**
Client ID: **PBW**	Batch ID: **90725**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/23/2021**	SeqNo: **4484294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	0.195	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-90725**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/16/2021**	RunNo: **159245**
Client ID: **LCSW**	Batch ID: **90725**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/23/2021**	SeqNo: **4484295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.726	0.10	10.00	0	97.3	85	115				
Manganese	97.347	0.50	100.0	0	97.3	85	115				
Molybdenum	10.077	0.50	10.00	0	101	85	115				
Selenium	9.282	0.50	10.00	0	92.8	85	115				

Sample ID **N048398-002CMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/16/2021**	RunNo: **159245**
Client ID: **ZZZZZZ**	Batch ID: **90725**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/23/2021**	SeqNo: **4484303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.919	0.10	10.00	0	89.2	75	125				
Manganese	95.016	0.50	100.0	4.802	90.2	75	125				
Molybdenum	34.071	0.50	10.00	23.86	102	75	125				
Selenium	15.933	0.50	10.00	8.162	77.7	75	125				

Sample ID **N048398-002CMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/16/2021**	RunNo: **159245**
Client ID: **ZZZZZZ**	Batch ID: **90725**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/23/2021**	SeqNo: **4484307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.193	0.10	10.00	0	91.9	75	125	8.919	3.03	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
Work Order: N048399
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048398-002CMSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159245
Client ID:	ZZZZZZ	Batch ID:	90725	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/23/2021	SeqNo:	4484307

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	95.114	0.50	100.0	4.802	90.3	75	125	95.02	0.103	20	
Molybdenum	34.617	0.50	10.00	23.86	108	75	125	34.07	1.59	20	
Selenium	16.798	0.50	10.00	8.162	86.4	75	125	15.93	5.29	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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

N048399

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Page 1 of 1

| | | |

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:	12/15/2021	Workorder:	N048399
Rep sample Temp (Deg C):	3.3/4.1	IR Gun ID:	3
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 By: GGJ GGarcia 12/16/2021

Reviewed By: MBC 12/17/2021

ASSET Laboratories

WORK ORDER Summary

16-Dec-21

WorkOrder: N048399

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/15/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048399-001A	MW-48-Q421	12/15/2021 1:20:00 PM	12/30/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048399-001B			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048399-001C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048399-002A	MW-62-065-Q421	12/15/2021 12:50:00 PM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048399-002B			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048399-002C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048399-003A	EB-749-Q421	12/15/2021 3:30:00 PM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048399-004A	MW-59-100-Q421	12/15/2021 2:28:00 PM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048399-004B			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048399-004C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048399-005A	FOLDER	12/30/2021	12/30/2021		Folder	Folder	☐	☐	☐	LAB
			12/30/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/30/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Riggie Tep

16-Dec-21

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**SM4500-NO3F**		
N048399-001B / MW-48-Q421	Groundwater	12/15/2021 1:20:00 PM	8OZP	1		
N048399-002B / MW-62-065-Q421	Groundwater	12/15/2021 12:50:00 PM	8OZP	1		
N048399-004B / MW-59-100-Q421	Groundwater	12/15/2021 2:28:00 PM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48399A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555562630

		Date/Time			Date/Time
Relinquished by:	YRJ	12/16/2021 1630	**Received by:**		
Relinquished by:			**Received by:**		

January 04, 2022

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048400

RE: PG&E Topock - PCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 15, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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:

Nitrate/Nitrite and Ammonia were subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0 ug/L) for sample N048400-014 (MW-96-045-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 300.0:

Dilution was necessary due to precipitation of samples upon the addition of eluent.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Nitrite in QC samples N048400-003DMS, N048400-003DMSD and N048400-001DMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Iron in QC sample N048400-003CMSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0 ug/L) for sample N048400-014 (MW-96-045-Q421) 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 1.2 and 0.08 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N048400-003CMS and N048400-003CMSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) is outside recovery criteria for Barium in QC sample N048400-003CMS possibly due to matrix interference. Post Spike (PS) passed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 5310C:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N048400-003F-MS and N048400-003F-MSD at 1x dilution possibly due to matrix interference. QC samples were diluted and recovery passed criteria. Thus sample reference N048400-003 and MS/MSD were reported at 5x dilution. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048400
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048400-001A	MW-78-070-Q421	Groundwater	12/15/2021 11:51:00 AM	12/15/2021	1/4/2022
N048400-001B	MW-78-070-Q421	Groundwater	12/15/2021 11:51:00 AM	12/15/2021	1/4/2022
N048400-001C	MW-78-070-Q421	Groundwater	12/15/2021 11:51:00 AM	12/15/2021	1/4/2022
N048400-001D	MW-78-070-Q421	Groundwater	12/15/2021 11:51:00 AM	12/15/2021	1/4/2022
N048400-001E	MW-78-070-Q421	Groundwater	12/15/2021 11:51:00 AM	12/15/2021	1/4/2022
N048400-001F	MW-78-070-Q421	Groundwater	12/15/2021 11:51:00 AM	12/15/2021	1/4/2022
N048400-002A	MW-78-142-Q421	Groundwater	12/15/2021 12:27:00 PM	12/15/2021	1/4/2022
N048400-002B	MW-78-142-Q421	Groundwater	12/15/2021 12:27:00 PM	12/15/2021	1/4/2022
N048400-002C	MW-78-142-Q421	Groundwater	12/15/2021 12:27:00 PM	12/15/2021	1/4/2022
N048400-002D	MW-78-142-Q421	Groundwater	12/15/2021 12:27:00 PM	12/15/2021	1/4/2022
N048400-002E	MW-78-142-Q421	Groundwater	12/15/2021 12:27:00 PM	12/15/2021	1/4/2022
N048400-002F	MW-78-142-Q421	Groundwater	12/15/2021 12:27:00 PM	12/15/2021	1/4/2022
N048400-003A	MW-79-058-Q421	Groundwater	12/15/2021 10:12:00 AM	12/15/2021	1/4/2022
N048400-003B	MW-79-058-Q421	Groundwater	12/15/2021 10:12:00 AM	12/15/2021	1/4/2022
N048400-003C	MW-79-058-Q421	Groundwater	12/15/2021 10:12:00 AM	12/15/2021	1/4/2022
N048400-003D	MW-79-058-Q421	Groundwater	12/15/2021 10:12:00 AM	12/15/2021	1/4/2022
N048400-003E	MW-79-058-Q421	Groundwater	12/15/2021 10:12:00 AM	12/15/2021	1/4/2022
N048400-003F	MW-79-058-Q421	Groundwater	12/15/2021 10:12:00 AM	12/15/2021	1/4/2022
N048400-004A	MW-79-102-Q421	Groundwater	12/15/2021 10:56:00 AM	12/15/2021	1/4/2022
N048400-004B	MW-79-102-Q421	Groundwater	12/15/2021 10:56:00 AM	12/15/2021	1/4/2022
N048400-004C	MW-79-102-Q421	Groundwater	12/15/2021 10:56:00 AM	12/15/2021	1/4/2022
N048400-004D	MW-79-102-Q421	Groundwater	12/15/2021 10:56:00 AM	12/15/2021	1/4/2022
N048400-004E	MW-79-102-Q421	Groundwater	12/15/2021 10:56:00 AM	12/15/2021	1/4/2022
N048400-004F	MW-79-102-Q421	Groundwater	12/15/2021 10:56:00 AM	12/15/2021	1/4/2022
N048400-005A	MW-80-057-Q421	Groundwater	12/15/2021 8:48:00 AM	12/15/2021	1/4/2022
N048400-005B	MW-80-057-Q421	Groundwater	12/15/2021 8:48:00 AM	12/15/2021	1/4/2022
N048400-005C	MW-80-057-Q421	Groundwater	12/15/2021 8:48:00 AM	12/15/2021	1/4/2022
N048400-005D	MW-80-057-Q421	Groundwater	12/15/2021 8:48:00 AM	12/15/2021	1/4/2022
N048400-005E	MW-80-057-Q421	Groundwater	12/15/2021 8:48:00 AM	12/15/2021	1/4/2022

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048400
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048400-005F	MW-80-057-Q421	Groundwater	12/15/2021 8:48:00 AM	12/15/2021	1/4/2022
N048400-006A	MW-80-082-Q421	Groundwater	12/15/2021 9:23:00 AM	12/15/2021	1/4/2022
N048400-006B	MW-80-082-Q421	Groundwater	12/15/2021 9:23:00 AM	12/15/2021	1/4/2022
N048400-006C	MW-80-082-Q421	Groundwater	12/15/2021 9:23:00 AM	12/15/2021	1/4/2022
N048400-006D	MW-80-082-Q421	Groundwater	12/15/2021 9:23:00 AM	12/15/2021	1/4/2022
N048400-006E	MW-80-082-Q421	Groundwater	12/15/2021 9:23:00 AM	12/15/2021	1/4/2022
N048400-006F	MW-80-082-Q421	Groundwater	12/15/2021 9:23:00 AM	12/15/2021	1/4/2022
N048400-007A	EB-748-Q421	Groundwater	12/15/2021 2:58:00 PM	12/15/2021	1/4/2022
N048400-008A	MW-20-070-Q421	Groundwater	12/15/2021 10:16:00 AM	12/15/2021	1/4/2022
N048400-008B	MW-20-070-Q421	Groundwater	12/15/2021 10:16:00 AM	12/15/2021	1/4/2022
N048400-008C	MW-20-070-Q421	Groundwater	12/15/2021 10:16:00 AM	12/15/2021	1/4/2022
N048400-008D	MW-20-070-Q421	Groundwater	12/15/2021 10:16:00 AM	12/15/2021	1/4/2022
N048400-008E	MW-20-070-Q421	Groundwater	12/15/2021 10:16:00 AM	12/15/2021	1/4/2022
N048400-008F	MW-20-070-Q421	Groundwater	12/15/2021 10:16:00 AM	12/15/2021	1/4/2022
N048400-009A	MW-20-100-Q421	Groundwater	12/15/2021 8:55:00 AM	12/15/2021	1/4/2022
N048400-009B	MW-20-100-Q421	Groundwater	12/15/2021 8:55:00 AM	12/15/2021	1/4/2022
N048400-009C	MW-20-100-Q421	Groundwater	12/15/2021 8:55:00 AM	12/15/2021	1/4/2022
N048400-009D	MW-20-100-Q421	Groundwater	12/15/2021 8:55:00 AM	12/15/2021	1/4/2022
N048400-009E	MW-20-100-Q421	Groundwater	12/15/2021 8:55:00 AM	12/15/2021	1/4/2022
N048400-009F	MW-20-100-Q421	Groundwater	12/15/2021 8:55:00 AM	12/15/2021	1/4/2022
N048400-010A	MW-20-130-Q421	Groundwater	12/15/2021 9:38:00 AM	12/15/2021	1/4/2022
N048400-010B	MW-20-130-Q421	Groundwater	12/15/2021 9:38:00 AM	12/15/2021	1/4/2022
N048400-010C	MW-20-130-Q421	Groundwater	12/15/2021 9:38:00 AM	12/15/2021	1/4/2022
N048400-010D	MW-20-130-Q421	Groundwater	12/15/2021 9:38:00 AM	12/15/2021	1/4/2022
N048400-010E	MW-20-130-Q421	Groundwater	12/15/2021 9:38:00 AM	12/15/2021	1/4/2022
N048400-010F	MW-20-130-Q421	Groundwater	12/15/2021 9:38:00 AM	12/15/2021	1/4/2022
N048400-011A	MW-26-Q421	Groundwater	12/15/2021 11:02:00 AM	12/15/2021	1/4/2022
N048400-011B	MW-26-Q421	Groundwater	12/15/2021 11:02:00 AM	12/15/2021	1/4/2022
N048400-011C	MW-26-Q421	Groundwater	12/15/2021 11:02:00 AM	12/15/2021	1/4/2022
N048400-011D	MW-26-Q421	Groundwater	12/15/2021 11:02:00 AM	12/15/2021	1/4/2022

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048400
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048400-011E	MW-26-Q421	Groundwater	12/15/2021 11:02:00 AM	12/15/2021	1/4/2022
N048400-011F	MW-26-Q421	Groundwater	12/15/2021 11:02:00 AM	12/15/2021	1/4/2022
N048400-012A	MW-51-Q421	Groundwater	12/15/2021 11:42:00 AM	12/15/2021	1/4/2022
N048400-012B	MW-51-Q421	Groundwater	12/15/2021 11:42:00 AM	12/15/2021	1/4/2022
N048400-012C	MW-51-Q421	Groundwater	12/15/2021 11:42:00 AM	12/15/2021	1/4/2022
N048400-012D	MW-51-Q421	Groundwater	12/15/2021 11:42:00 AM	12/15/2021	1/4/2022
N048400-012E	MW-51-Q421	Groundwater	12/15/2021 11:42:00 AM	12/15/2021	1/4/2022
N048400-012F	MW-51-Q421	Groundwater	12/15/2021 11:42:00 AM	12/15/2021	1/4/2022
N048400-013A	MW-934-Q421	Groundwater	12/15/2021 11:52:00 AM	12/15/2021	1/4/2022
N048400-013B	MW-934-Q421	Groundwater	12/15/2021 11:52:00 AM	12/15/2021	1/4/2022
N048400-013C	MW-934-Q421	Groundwater	12/15/2021 11:52:00 AM	12/15/2021	1/4/2022
N048400-013D	MW-934-Q421	Groundwater	12/15/2021 11:52:00 AM	12/15/2021	1/4/2022
N048400-013E	MW-934-Q421	Groundwater	12/15/2021 11:52:00 AM	12/15/2021	1/4/2022
N048400-013F	MW-934-Q421	Groundwater	12/15/2021 11:52:00 AM	12/15/2021	1/4/2022
N048400-014A	MW-96-045-Q421	Groundwater	12/15/2021 2:18:00 PM	12/15/2021	1/4/2022
N048400-014B	MW-96-045-Q421	Groundwater	12/15/2021 2:18:00 PM	12/15/2021	1/4/2022
N048400-015A	MW-939-Q421	Groundwater	12/15/2021 2:28:00 PM	12/15/2021	1/4/2022
N048400-015B	MW-939-Q421	Groundwater	12/15/2021 2:28:00 PM	12/15/2021	1/4/2022
N048400-016A	MW-96-217-Q421	Groundwater	12/15/2021 3:14:00 PM	12/15/2021	1/4/2022
N048400-016B	MW-96-217-Q421	Groundwater	12/15/2021 3:14:00 PM	12/15/2021	1/4/2022

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-78-070-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:51:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	4400	13	100		µg/L	500	12/16/2021 09:58 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	4500	1.8	50		µg/L	50	12/29/2021 10:44 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:**	MW-78-142-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 12:27:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	5500	25	200		µg/L	1000	12/16/2021 10:18 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	5400	1.8	50		µg/L	50	12/29/2021 11:02 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:**	MW-79-058-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:12:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	3200	13	100		µg/L	500	12/16/2021 10:37 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	3400	0.88	25		µg/L	25	12/29/2021 11:19 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:**	MW-79-102-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:56:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	2800	13	100		µg/L	500	12/16/2021 10:56 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	2800	0.88	25		µg/L	25	12/30/2021 12:48 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:**	MW-80-057-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 8:48:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	710	2.5	20		µg/L	100	12/16/2021 11:33 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	710	0.18	5.0		µg/L	5	12/30/2021 01:23 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:**	MW-80-082-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 9:23:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1200	5.0	40		µg/L	200	12/16/2021 11:52 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	1200	0.88	25		µg/L	25	12/30/2021 01:41 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:**	EB-748-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 2:58:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/16/2021 02:43 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:**	MW-20-070-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:16:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	570	5.0	40		µg/L	200	12/16/2021 12:11 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	590	0.18	5.0		µg/L	5	12/30/2021 01:53 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:**	MW-20-100-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 8:55:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	650	2.5	20		µg/L	100	12/16/2021 12:30 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	660	0.18	5.0		µg/L	5	12/30/2021 02:05 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:**	MW-20-130-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 9:38:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	3300	13	100		µg/L	500	12/16/2021 12:49 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	3400	0.88	25		µg/L	25	12/30/2021 02:34 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:**	MW-26-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:02:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	2200	13	100		µg/L	500	12/16/2021 01:27 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	2300	0.88	25		µg/L	25	12/30/2021 02:52 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:**	MW-51-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:42:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	2900	13	100		µg/L	500	12/16/2021 01:46 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	3100	0.88	25		µg/L	25	12/30/2021 03:10 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:**	MW-934-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:52:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	2900	13	100		µg/L	500	12/16/2021 02:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	3000	0.88	25		µg/L	25	12/30/2021 03:39 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
Lab Order: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048400-014

Client Sample ID: MW-96-045-Q421
Collection Date: 12/15/2021 2:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216B** QC Batch: **R158975**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/16/2021 10:27 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211229D** QC Batch: **90726**				PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	1.5	0.035	1.0		µg/L	1	12/29/2021 09:45 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-939-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 2:28:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211216B** QC Batch: **R158975**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/16/2021 10:46 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211229D** QC Batch: **90726**				PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/29/2021 09:57 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:**	MW-96-217-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 3:14:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211216A**	QC Batch: **R158974**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/16/2021 06:21 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/29/2021 10:08 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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158974	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	PBW	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467900

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-R158974	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	LCSW	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467901

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.143	0.20	5.000	0	103	90	110				

Sample ID	N048400-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467903

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6808.900	100	2500	4360	98.0	90	110				

Sample ID	N048400-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467905

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10448.300	200	5000	5467	99.6	90	110				

Sample ID	N048400-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467907

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5743.850	100	2500	3193	102	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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048400-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158974**
Client ID: **ZZZZZZ**	Batch ID: **R158974**	TestNo: **EPA 218.6**		Analysis Date: **12/16/2021**	SeqNo: **4467909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5201.100	100	2500	2770	97.2	90	110				

Sample ID **N048400-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158974**
Client ID: **ZZZZZZ**	Batch ID: **R158974**	TestNo: **EPA 218.6**		Analysis Date: **12/16/2021**	SeqNo: **4467913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1200.530	20	500.0	711.2	97.9	90	110				

Sample ID **N048400-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158974**
Client ID: **ZZZZZZ**	Batch ID: **R158974**	TestNo: **EPA 218.6**		Analysis Date: **12/16/2021**	SeqNo: **4467915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2124.040	40	1000	1164	96.0	90	110				

Sample ID **N048400-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158974**
Client ID: **ZZZZZZ**	Batch ID: **R158974**	TestNo: **EPA 218.6**		Analysis Date: **12/16/2021**	SeqNo: **4467917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1544.520	40	1000	567.2	97.7	90	110				

Sample ID **N048400-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158974**
Client ID: **ZZZZZZ**	Batch ID: **R158974**	TestNo: **EPA 218.6**		Analysis Date: **12/16/2021**	SeqNo: **4467919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1135.760	20	500.0	646.6	97.8	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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048400-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467921

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5726.700	100	2500	3299	97.1	90	110				

Sample ID	N048400-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467925

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4669.350	100	2500	2190	99.2	90	110				

Sample ID	N048400-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467927

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5383.000	100	2500	2936	97.9	90	110				

Sample ID	N048400-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467929

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5375.500	100	2500	2907	98.7	90	110				

Sample ID	N048400-003AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467930

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5753.300	100	2500	3193	102	90	110	5744	0.164	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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048400-002ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467931

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5697.300	200						5467	4.13	20	

Sample ID	N048400-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467933

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.018	0.20	1.000	0	102	90	110				

Sample ID	N048399-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467937

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1075.310	20	500.0	582.4	98.6	90	110				

Sample ID	N048399-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467941

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2969.780	40	1000	1985	98.5	90	110				

Sample ID	N048400-016AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467943

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.037	1.0	5.000	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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048399-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158974
Client ID:	ZZZZZZ	Batch ID:	R158974	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467945

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.663	1.0	5.000	0.6175	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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R158975	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975		
Client ID:	LCSW	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467954		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.161	0.20	5.000	0	103	90	110						

Sample ID	MB-R158975	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975		
Client ID:	PBW	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467955		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	N048398-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975		
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467959		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	2.238	0.20	1.000	1.244	99.5	90	110						

Sample ID	N048398-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975		
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467960		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	2.273	0.20	1.000	1.244	103	90	110	2.238	1.55	20			

Sample ID	N048398-004ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975		
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467962		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	0.289	0.20						0.2833	2.10	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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048398-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467963

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.335	0.20	1.000	0.2833	105	90	110				

Sample ID	N048398-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467965

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.505	0.20	1.000	0.5050	100	90	110				

Sample ID	N048398-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467969

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.199	0.20	1.000	1.148	105	90	110				

Sample ID	N048398-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467971

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	40.201	1.0	25.00	14.85	101	90	110				

Sample ID	N048398-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467973

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				

Qualifiers:

- B Analyte detected in 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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048400-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975		
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467975		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.533	1.0	5.000	0	90.7	90	110						

Sample ID	N048400-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158975		
Client ID:	ZZZZZZ	Batch ID:	R158975	TestNo:	EPA 218.6			Analysis Date:	12/16/2021	SeqNo:	4467977		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.737	1.0	5.000	0	94.7	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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90726	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159270
Client ID:	PBW	Batch ID:	90726	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/29/2021	SeqNo:	4485829

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

Sample ID	LCS-90726	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159270
Client ID:	LCSW	Batch ID:	90726	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/29/2021	SeqNo:	4485830

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.176	1.0	10.00	0	102	85	115				

Sample ID	N048400-003CMS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159270
Client ID:	ZZZZZZ	Batch ID:	90726	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2021	SeqNo:	4485856

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	3359.951	25	10.00	3359	7.10	75	125				S

Sample ID	N048400-003CMSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159270
Client ID:	ZZZZZZ	Batch ID:	90726	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2021	SeqNo:	4485859

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	3415.059	25	10.00	3359	558	75	125	3360	1.63	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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID **N048400-003C-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:				RunNo: **159270**			
Client ID: **ZZZZZZ**	Batch ID: **90726**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/29/2021**				SeqNo: **4485853**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	3419.070	25	10.00	3359	598	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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-78-070-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:51:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216A** QC Batch: **R158942**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.015	2.5		mg/L	5	12/16/2021 11:49 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	370	3.0	25		mg/L	50	12/18/2021 01:27 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:**	MW-78-142-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 12:27:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216A** QC Batch: **R158942**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/16/2021 10:20 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	900	6.1	50		mg/L	100	12/18/2021 02:14 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:**	MW-79-058-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:12:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216A**	QC Batch: **R158942**			PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/16/2021 10:36 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B**	QC Batch: **R159009**			PrepDate:			Analyst: **RAB**
Sulfate	410	3.0	25		mg/L	50	12/17/2021 11:52 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:**	MW-79-102-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:56:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216A** QC Batch: **R158942**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/16/2021 10:52 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	870	6.1	50		mg/L	100	12/18/2021 02:30 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:**	MW-80-057-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 8:48:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216A** QC Batch: **R158942**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/16/2021 12:52 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	520	3.0	25		mg/L	50	12/18/2021 02:46 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:**	MW-80-082-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 9:23:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216A** QC Batch: **R158942**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/16/2021 01:08 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	570	3.0	25		mg/L	50	12/18/2021 03:01 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:**	MW-20-070-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:16:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216A**	QC Batch: **R158942**			PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/16/2021 01:24 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B**	QC Batch: **R159009**			PrepDate:			Analyst: **RAB**
Sulfate	490	3.0	25		mg/L	50	12/18/2021 12:39 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:**	MW-20-100-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 8:55:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216A** QC Batch: **R158942**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.015	2.5		mg/L	5	12/16/2021 03:14 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	200	1.2	10		mg/L	20	12/18/2021 03:17 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:**	MW-20-130-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 9:38:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216A** QC Batch: **R158942**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/16/2021 01:55 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	960	6.1	50		mg/L	100	12/18/2021 03:33 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:**	MW-26-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:02:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216A**	QC Batch: **R158942**			PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/16/2021 02:11 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B**	QC Batch: **R159009**			PrepDate:			Analyst: **RAB**
Sulfate	430	3.0	25		mg/L	50	12/18/2021 03:49 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:**	MW-51-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:42:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216A** QC Batch: **R158942**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/16/2021 02:27 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	720	6.1	50		mg/L	100	12/18/2021 04:05 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:**	MW-934-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:52:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211216A** QC Batch: **R158942**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/16/2021 02:43 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217B** QC Batch: **R159009**				PrepDate:			Analyst: **RAB**
Sulfate	720	6.1	50		mg/L	100	12/18/2021 04:20 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
Work Order: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_NO2PGE

Sample ID	MB-R158942_NO2	SampType:	MBLK	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	158942
Client ID:	PBW	Batch ID:	R158942	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467059

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

Sample ID	LCS-R158942_NO2	SampType:	LCS	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	158942
Client ID:	LCSW	Batch ID:	R158942	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467060

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	1.293	0.50	1.250	0	103	90	110				

Sample ID	N048400-003DMS	SampType:	MS	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	158942
Client ID:	ZZZZZZ	Batch ID:	R158942	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467064

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	16.502	5.0	12.50	0	132	80	120				S

Sample ID	N048400-003DMSD	SampType:	MSD	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	158942
Client ID:	ZZZZZZ	Batch ID:	R158942	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467065

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	15.542	5.0	12.50	0	124	80	120	16.50	5.99	20	S

Sample ID	N048400-001DDUP	SampType:	DUP	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	158942
Client ID:	ZZZZZZ	Batch ID:	R158942	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467067

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	ND	2.5						0	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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_NO2PGE

Sample ID	N048400-001DMS	SampType:	MS	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	158942
Client ID:	ZZZZZZ	Batch ID:	R158942	TestNo:	EPA 300.0			Analysis Date:	12/16/2021	SeqNo:	4467077

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	8.576	2.5	6.250	0	137	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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	LCS-R159009_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	LCSW	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/17/2021	SeqNo:	4471654

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.140	0.50	4.000	0	104	90	110				

Sample ID	MB-R159009_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	PBW	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/17/2021	SeqNo:	4471655

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.248	0.50									

Sample ID	N048398-002DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	ZZZZZZ	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/17/2021	SeqNo:	4471657

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	719.525	25	200.0	505.9	107	80	120				

Sample ID	N048398-002DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	ZZZZZZ	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/17/2021	SeqNo:	4471658

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	723.170	25	200.0	505.9	109	80	120	719.5	0.505	20	

Sample ID	N048400-003DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	ZZZZZZ	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/18/2021	SeqNo:	4471667

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	618.925	25	200.0	406.7	106	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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N048400-003DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	ZZZZZZ	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/18/2021	SeqNo:	4471668

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	624.860	25	200.0	406.7	109	80	120	618.9	0.954	20	

Sample ID	N048400-008DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	ZZZZZZ	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/18/2021	SeqNo:	4471670

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	492.365	25						485.6	1.38	20	

Sample ID	N048400-008DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159009
Client ID:	ZZZZZZ	Batch ID:	R159009	TestNo:	EPA 300.0			Analysis Date:	12/18/2021	SeqNo:	4471671

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	698.925	25	200.0	485.6	107	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	**Client Sample ID:**	MW-78-070-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:51:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 01:30 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	**Client Sample ID:**	MW-78-142-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 12:27:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 01:46 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:**	MW-79-058-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:12:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.42	5.0		mg/L	5	12/17/2021 04:53 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:**	MW-79-102-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:56:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 02:02 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:**	MW-80-057-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 8:48:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 02:17 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:**	MW-80-082-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 9:23:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 02:33 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:**	MW-20-070-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:16:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 02:49 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:**	MW-20-100-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 8:55:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 03:04 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:**	MW-20-130-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 9:38:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 03:20 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:02:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 03:35 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:**	MW-51-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:42:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 04:22 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:**	MW-934-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:52:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 04:37 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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID **MB-R159005**	SampType: **MBLK**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159005**
Client ID: **PBW**	Batch ID: **R159005**	TestNo: **SM 5310C**		Analysis Date: **12/17/2021**	SeqNo: **4470818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID **LCS-R159005**	SampType: **LCS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159005**
Client ID: **LCSW**	Batch ID: **R159005**	TestNo: **SM 5310C**		Analysis Date: **12/17/2021**	SeqNo: **4470819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.867	1.0	5.000	0	97.3	85	115				

Sample ID **N048400-003F-MS**	SampType: **MS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159005**
Client ID: **ZZZZZZ**	Batch ID: **R159005**	TestNo: **SM 5310C**		Analysis Date: **12/17/2021**	SeqNo: **4470845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	20.892	5.0	25.00	0	83.6	75	125				

Sample ID **N048400-003F-MSD**	SampType: **MSD**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159005**
Client ID: **ZZZZZZ**	Batch ID: **R159005**	TestNo: **SM 5310C**		Analysis Date: **12/17/2021**	SeqNo: **4470846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	20.721	5.0	25.00	0	82.9	75	125	20.89	0.819	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:**	MW-78-070-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:51:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**			PrepDate:	**12/16/2021**		Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/21/2021 12:19 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:**	MW-78-142-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 12:27:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**			PrepDate:	**12/16/2021**		Analyst: **DJ**
Iron	31	13	20		µg/L	1	12/21/2021 12:23 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:**	MW-79-058-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:12:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**				PrepDate:	**12/16/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/21/2021 12:28 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:**	MW-79-102-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:56:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**			PrepDate:	**12/16/2021**		Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/21/2021 12:52 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: *04-Jan-22*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-80-057-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 8:48:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**			PrepDate:	**12/16/2021**		Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/21/2021 12:57 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:**	MW-80-082-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 9:23:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**				PrepDate:	**12/16/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/21/2021 01:02 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:**	MW-20-070-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:16:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**			PrepDate:	**12/16/2021**		Analyst: **DJ**
Iron	37	13	20		µg/L	1	12/21/2021 01:28 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:**	MW-20-100-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 8:55:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**			PrepDate:	**12/16/2021**		Analyst: **DJ**
Iron	33	13	20		µg/L	1	12/21/2021 01:33 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:**	MW-20-130-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 9:38:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211231B**	QC Batch: **90727**			PrepDate:	**12/16/2021**		Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/31/2021 04:00 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:**	MW-26-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:02:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**			PrepDate:	**12/16/2021**		Analyst: **DJ**
Iron	46	13	20		µg/L	1	12/21/2021 01:43 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:**	MW-51-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:42:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**			PrepDate:	**12/16/2021**		Analyst: **DJ**
Iron	25	13	20		µg/L	1	12/21/2021 01:48 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:**	MW-934-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:52:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**			PrepDate:	**12/16/2021**		Analyst: **DJ**
Iron	24	13	20		µg/L	1	12/21/2021 01:53 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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-90727	SampType:	MBLK	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159075	
Client ID:	PBW	Batch ID:	90727	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2021	SeqNo:	4473522	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Iron	ND	20										

Sample ID	LCS-90727	SampType:	LCS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159075	
Client ID:	LCSW	Batch ID:	90727	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2021	SeqNo:	4473523	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Iron	107.658	20	100.0	0	108	85	115					

Sample ID	N048400-003CMS	SampType:	MS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159075	
Client ID:	ZZZZZZ	Batch ID:	90727	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2021	SeqNo:	4473537	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Iron	91.004	20	100.0	15.12	75.9	75	125					

Sample ID	N048400-003CMSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159075	
Client ID:	ZZZZZZ	Batch ID:	90727	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2021	SeqNo:	4473538	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Iron	86.623	20	100.0	15.12	71.5	75	125	91.00	4.93	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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N048400-003C-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:		RunNo:	159075
Client ID:	ZZZZZZ	Batch ID:	90727	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2021	SeqNo:	4473536

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	85.113	20	100.0	15.12	70.0	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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-78-070-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:51:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-001		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211229D** QC Batch: **90726** PrepDate: **12/16/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	0.85	0.050	0.10		µg/L	1	12/29/2021 10:20 PM
Barium	40	0.083	1.0		µg/L	1	12/29/2021 10:20 PM
Manganese	0.63	0.026	0.50		µg/L	1	12/29/2021 10:20 PM
Molybdenum	13	0.12	0.50		µg/L	1	12/29/2021 10:20 PM
Selenium	9.2	0.044	0.50		µg/L	1	12/29/2021 10:20 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-78-142-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 12:27:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-002		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211229D** QC Batch: **90726** PrepDate: **12/16/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/29/2021 10:50 PM
Barium	31	0.083	1.0		µg/L	1	12/29/2021 10:50 PM
Manganese	4.2	0.026	0.50		µg/L	1	12/29/2021 10:50 PM
Molybdenum	21	0.12	0.50		µg/L	1	12/29/2021 10:50 PM
Selenium	33	0.044	0.50		µg/L	1	12/29/2021 10:50 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:**	MW-79-058-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:12:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Arsenic	0.30	0.050	0.10		µg/L	1	12/29/2021 11:08 PM
Barium	93	0.083	1.0		µg/L	1	12/29/2021 11:08 PM
Manganese	0.56	0.026	0.50		µg/L	1	12/29/2021 11:08 PM
Molybdenum	10	0.12	0.50		µg/L	1	12/29/2021 11:08 PM
Selenium	9.4	0.044	0.50		µg/L	1	12/29/2021 11:08 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:**	MW-79-102-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:56:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Arsenic	1.5	0.050	0.10		µg/L	1	12/30/2021 12:36 AM
Barium	37	0.083	1.0		µg/L	1	12/30/2021 12:36 AM
Manganese	5.2	0.026	0.50		µg/L	1	12/30/2021 12:36 AM
Molybdenum	29	0.12	0.50		µg/L	1	12/30/2021 12:36 AM
Selenium	57	0.044	0.50		µg/L	1	12/30/2021 12:36 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:**	MW-80-057-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 8:48:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Arsenic	1.3	0.050	0.10		µg/L	1	12/30/2021 01:17 AM
Barium	51	0.083	1.0		µg/L	1	12/30/2021 01:17 AM
Manganese	4.7	0.026	0.50		µg/L	1	12/30/2021 01:17 AM
Molybdenum	36	0.12	0.50		µg/L	1	12/30/2021 01:17 AM
Selenium	31	0.044	0.50		µg/L	1	12/30/2021 01:17 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:**	MW-80-082-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 9:23:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-006		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211229D** QC Batch: **90726** PrepDate: **12/16/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.5	0.050	0.10		µg/L	1	12/30/2021 01:29 AM
Barium	33	0.083	1.0		µg/L	1	12/30/2021 01:29 AM
Manganese	0.87	0.026	0.50		µg/L	1	12/30/2021 01:29 AM
Molybdenum	26	0.12	0.50		µg/L	1	12/30/2021 01:29 AM
Selenium	24	0.044	0.50		µg/L	1	12/30/2021 01:29 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:**	MW-20-070-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 10:16:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Arsenic	0.90	0.050	0.10		µg/L	1	12/30/2021 01:47 AM
Barium	47	0.083	1.0		µg/L	1	12/30/2021 01:47 AM
Manganese	ND	0.026	0.50		µg/L	1	12/30/2021 01:47 AM
Molybdenum	18	0.12	0.50		µg/L	1	12/30/2021 01:47 AM
Selenium	33	0.044	0.50		µg/L	1	12/30/2021 01:47 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-20-100-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 8:55:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Arsenic	1.3	0.050	0.10		µg/L	1	12/30/2021 01:59 AM
Barium	24	0.083	1.0		µg/L	1	12/30/2021 01:59 AM
Manganese	ND	0.026	0.50		µg/L	1	12/30/2021 01:59 AM
Molybdenum	3.6	0.12	0.50		µg/L	1	12/30/2021 01:59 AM
Selenium	6.0	0.044	0.50		µg/L	1	12/30/2021 01:59 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:**	MW-20-130-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 9:38:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Arsenic	0.22	0.050	0.10		µg/L	1	12/30/2021 02:11 AM
Barium	24	0.083	1.0		µg/L	1	12/30/2021 02:11 AM
Manganese	1.6	0.026	0.50		µg/L	1	12/30/2021 02:11 AM
Molybdenum	22	0.12	0.50		µg/L	1	12/30/2021 02:11 AM
Selenium	37	0.044	0.50		µg/L	1	12/30/2021 02:11 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:**	MW-26-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:02:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**			PrepDate:	**12/16/2021**		Analyst: **CEI**
Arsenic	0.92	0.050	0.10		µg/L	1	12/30/2021 02:40 AM
Barium	33	0.083	1.0		µg/L	1	12/30/2021 12:55 PM
Manganese	2.3	0.026	0.50		µg/L	1	12/30/2021 02:40 AM
Molybdenum	16	0.12	0.50		µg/L	1	12/30/2021 02:40 AM
Selenium	13	0.044	0.50		µg/L	1	12/30/2021 02:40 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:**	MW-51-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:42:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**				PrepDate:	**12/16/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 02:58 AM
Barium	43	0.083	1.0		µg/L	1	12/30/2021 01:01 PM
Manganese	1.1	0.026	0.50		µg/L	1	12/30/2021 02:58 AM
Molybdenum	42	0.12	0.50		µg/L	1	12/30/2021 02:58 AM
Selenium	34	0.044	0.50		µg/L	1	12/30/2021 02:58 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:**	MW-934-Q421
Lab Order:	N048400	**Collection Date:**	12/15/2021 11:52:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048400-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211229D**	QC Batch: **90726**				PrepDate:	**12/16/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 03:16 AM
Barium	43	0.083	1.0		µg/L	1	12/30/2021 01:07 PM
Manganese	1.0	0.026	0.50		µg/L	1	12/30/2021 03:16 AM
Molybdenum	42	0.12	0.50		µg/L	1	12/30/2021 03:16 AM
Selenium	33	0.044	0.50		µg/L	1	12/30/2021 03:16 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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90726** SampType: **MBLK** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/16/2021** RunNo: **159270**
Client ID: **PBW** Batch ID: **90726** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/29/2021** SeqNo: **4485991**

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									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-90726** SampType: **LCS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/16/2021** RunNo: **159270**
Client ID: **LCSW** Batch ID: **90726** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/29/2021** SeqNo: **4485992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.709	0.10	10.00	0	107	85	115				
Barium	10.117	1.0	10.00	0	101	85	115				
Manganese	100.040	0.50	100.0	0	100	85	115				
Molybdenum	9.963	0.50	10.00	0	99.6	85	115				
Selenium	9.280	0.50	10.00	0	92.8	85	115				

Sample ID **N048400-003CMS** SampType: **MS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/16/2021** RunNo: **159270**
Client ID: **ZZZZZZ** Batch ID: **90726** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2021** SeqNo: **4486016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.078	0.10	10.00	0.3004	108	75	125				
Barium	100.329	1.0	10.00	92.85	74.8	75	125				S
Manganese	92.063	0.50	100.0	0.5607	91.5	75	125				
Molybdenum	20.976	0.50	10.00	10.33	106	75	125				
Selenium	18.200	0.50	10.00	9.371	88.3	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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048400-003CMSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/16/2021	RunNo:	159270
Client ID:	ZZZZZZ	Batch ID:	90726	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/30/2021	SeqNo:	4486019

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.675	0.10	10.00	0.3004	104	75	125	11.08	3.71	20	
Barium	101.236	1.0	10.00	92.85	83.8	75	125	100.3	0.900	20	
Manganese	92.946	0.50	100.0	0.5607	92.4	75	125	92.06	0.955	20	
Molybdenum	21.301	0.50	10.00	10.33	110	75	125	20.98	1.54	20	
Selenium	18.552	0.50	10.00	9.371	91.8	75	125	18.20	1.91	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: N048400
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **N048400-003C-PS** SampType: **PS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: RunNo: **159270**
Client ID: **ZZZZZZ** Batch ID: **90726** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/29/2021** SeqNo: **4486011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.548	0.10	10.00	0.3004	102	80	120				
Barium	103.118	1.0	10.00	92.85	103	80	120				
Manganese	92.028	0.50	100.0	0.5607	91.5	80	120				
Molybdenum	21.243	0.50	10.00	10.33	109	80	120				
Selenium	17.207	0.50	10.00	9.371	78.4	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		

N048400

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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

| | | |

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement		QA/QC	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD		RTNE	
	Email: [redacted]		Geotracker		RWQCB	✓
Address: Roseville, CA 95661		Address:	Labspec		CalTrans	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Others	✓	LEVEL III	
Submitted By: Reggie Top			Specify: RWQCB		LEVEL IV	
Title: Field Tech	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Global ID:		Regulatory	
Signature: Date: 12/15/21	Sampled By: Reggie Top				Specify State:	

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

Project Name: PG&E Topock - PCM	Signature:	Date: 12/15/21	
Project Number: 30110373.4Q21GW			

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

Sample Receipt Condition

	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact	✓	
4. Seal Present	✓	
5. IR number	3	
6. Method of Cooling: ICE		

Sample Temp: 2.5°C / 3.3°C / 4.1°C

Courier: ACCUT

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Barium, Iron, Molybdenum, Selenium (500mL poly)	Nitrite, sulfate (EPA 300.0) (1 L poly)	Ammonia as Nitrogen (SM4500NH3); H2SO4 (1 L poly)	Total Organic Carbon (SM5310C); H2SO4 (3x40 mL VOA)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048400-12	MW-51-Q421	12/15/21	11:42		X	X	X	X	X	X	X	X	E	8	P	BNS	
2	-13	MW-934-Q421	12/15/21	11:52		X	X	X	X	X	X	X	X	E	8	P	BNS	
3	-14	MW-96-045-Q421	12/15/21	14:18		X			X					E	2	P	BNS	
4	-15	MW-939-Q421	12/15/21	14:28		X			X					E	2	P	BNS	
5	-16	MW-96-217-Q421	12/15/21	15:14		X			X					E	2	P	BNS	
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Reggie Top	12/15/21 1635	Ramona Alcantara	12/15/21 1635
Ramona Alcantara	12/15/21 1930	Ramona Alcantara	12/15/21 1930
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished 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
X	E	= Routine 5-7 Workdays

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	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:	12/15/2021	Workorder:	N048400
Rep sample Temp (Deg C):	2.5/3.3/4.1	IR Gun ID:	3

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 By: GGJ GGarcia 12/16/2021

Reviewed By: MBC 12/23/2021

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048400

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/15/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048400-001A	MW-78-070-Q421	12/15/2021 11:51:00 AM	12/30/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-001B							☐	☐	☐	WW
N048400-001C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048400-001D			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048400-001E			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			12/30/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048400-001F			12/30/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048400-002A	MW-78-142-Q421	12/15/2021 12:27:00 PM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-002B							☐	☐	☐	WW
N048400-002C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048400-002D			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048400

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/15/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048400-002E	MW-78-142-Q421	12/15/2021 12:27:00 PM	12/30/2021	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			12/30/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048400-002F			12/30/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048400-003A	MW-79-058-Q421	12/15/2021 10:12:00 AM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☑	☐	WW
N048400-003B							☐	☐	☐	WW
N048400-003C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☑	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
N048400-003D			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☑	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☑	☐	WW
N048400-003E			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☑	☑	SUB
			12/30/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☑	☑	SUB
N048400-003F			12/30/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☑	☐	VW
N048400-004A	MW-79-102-Q421	12/15/2021 10:56:00 AM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-004B							☐	☐	☐	WW
N048400-004C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048400

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/15/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048400-004C	MW-79-102-Q421	12/15/2021 10:56:00 AM	12/30/2021	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048400-004D			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048400-004E			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			12/30/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048400-004F			12/30/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048400-005A	MW-80-057-Q421	12/15/2021 8:48:00 AM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-005B							☐	☐	☐	WW
N048400-005C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048400-005D			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048400-005E			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			12/30/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048400-005F			12/30/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048400-006A	MW-80-082-Q421	12/15/2021 9:23:00 AM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-006B							☐	☐	☐	WW
N048400-006C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048400

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/15/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048400-006C	MW-80-082-Q421	12/15/2021 9:23:00 AM	12/30/2021	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048400-006D			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048400-006E			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			12/30/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048400-006F			12/30/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048400-007A	EB-748-Q421	12/15/2021 2:58:00 PM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-008A	MW-20-070-Q421	12/15/2021 10:16:00 AM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-008B							☐	☐	☐	WW
N048400-008C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048400-008D			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048400-008E			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			12/30/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048400

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/15/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048400-008F	MW-20-070-Q421	12/15/2021 10:16:00 AM	12/30/2021	Groundwater	SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048400-009A	MW-20-100-Q421	12/15/2021 8:55:00 AM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-009B							☐	☐	☐	WW
N048400-009C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048400-009D			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048400-009E			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			12/30/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048400-009F			12/30/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048400-010A	MW-20-130-Q421	12/15/2021 9:38:00 AM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-010B							☐	☐	☐	WW
N048400-010C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048400-010D			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048400

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/15/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048400-010D	MW-20-130-Q421	12/15/2021 9:38:00 AM	12/30/2021	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048400-010E			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			12/30/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048400-010F			12/30/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048400-011A	MW-26-Q421	12/15/2021 11:02:00 AM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-011B							☐	☐	☐	WW
N048400-011C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048400-011D			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048400-011E			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			12/30/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048400-011F			12/30/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048400-012A	MW-51-Q421	12/15/2021 11:42:00 AM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-012B							☐	☐	☐	WW
N048400-012C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048400

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/15/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048400-012C	MW-51-Q421	12/15/2021 11:42:00 AM	12/30/2021	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048400-012D			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048400-012E			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			12/30/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048400-012F			12/30/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048400-013A	MW-934-Q421	12/15/2021 11:52:00 AM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-013B							☐	☐	☐	WW
N048400-013C			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048400-013D			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/30/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048400-013E			12/30/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			12/30/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048400-013F			12/30/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048400-014A	MW-96-045-Q421	12/15/2021 2:18:00 PM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-014B			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048400

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/15/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048400-014B	MW-96-045-Q421	12/15/2021 2:18:00 PM	12/30/2021	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048400-015A	MW-939-Q421	12/15/2021 2:28:00 PM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-015B			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048400-016A	MW-96-217-Q421	12/15/2021 3:14:00 PM	12/30/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048400-016B			12/30/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/30/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048400-017A	FOLDER	12/30/2021	12/30/2021		Folder	Folder	☐	☐	☐	LAB
			12/30/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/30/2021			QA Review	☐	☐	☐	LAB
			12/30/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Riggie Tep

16-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3D	SM4500-NO3F	
N048400-001E / MW-78-070-Q421	Groundwater	12/15/2021 11:51:00 AM	16OZP	1	1	
N048400-002E / MW-78-142-Q421	Groundwater	12/15/2021 12:27:00 PM	16OZP	1	1	
N048400-003E / MW-79-058-Q421	Groundwater	12/15/2021 10:12:00 AM	16OZP	1	1	(MS/MSD)
N048400-004E / MW-79-102-Q421	Groundwater	12/15/2021 10:56:00 AM	16OZP	1	1	
N048400-005E / MW-80-057-Q421	Groundwater	12/15/2021 8:48:00 AM	16OZP	1	1	
N048400-006E / MW-80-082-Q421	Groundwater	12/15/2021 9:23:00 AM	16OZP	1	1	
N048400-008E / MW-20-070-Q421	Groundwater	12/15/2021 10:16:00 AM	16OZP	1	1	
N048400-009E / MW-20-100-Q421	Groundwater	12/15/2021 8:55:00 AM	16OZP	1	1	
N048400-010E / MW-20-130-Q421	Groundwater	12/15/2021 9:38:00 AM	16OZP	1	1	
N048400-011E / MW-26-Q421	Groundwater	12/15/2021 11:02:00 AM	16OZP	1	1	
N048400-012E / MW-51-Q421	Groundwater	12/15/2021 11:42:00 AM	16OZP	1	1	
N048400-013E / MW-934-Q421	Groundwater	12/15/2021 11:52:00 AM	16OZP	1	1	

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48400A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite and Ammonia by SM4500NH3D. EDD requirement Labspec7 edata.

GSO #: 555562630

	Date/Time		Date/Time
Relinquished by: YRJ	12/16/2021 1630	**Received by:**	
Relinquished by:		**Received by:**	

January 06, 2022

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048418

RE: PG&E Topock - RCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 16, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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:

Nitrate/Nitrite and Ammonia were subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (1.9 ug/L) and hexavalent chromium (0 ug/L) for sample N048418-001 (MW-66BR-270-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (8.4 ug/L) and hexavalent chromium (6.2 ug/L) for sample N048418-009 (MW-83-180-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (1.9 ug/L) and hexavalent chromium (0 ug/L) for sample N048418-001 (MW-66BR-270-Q421) 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 1.9 and 1.5 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (8.4 ug/L) and hexavalent chromium (6.2 ug/L) for sample N048418-009 (MW-83-180-Q421) 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 8.7 and 7.5 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) (MS) is outside recovery criteria for Chromium in QC sample N048418-006BMS since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) passed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048418
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048418-001A	MW-66BR-270-Q421	Groundwater	12/16/2021 8:30:00 AM	12/16/2021	1/6/2022
N048418-001B	MW-66BR-270-Q421	Groundwater	12/16/2021 8:30:00 AM	12/16/2021	1/6/2022
N048418-002A	MW-63-065-Q421	Groundwater	12/16/2021 7:30:00 AM	12/16/2021	1/6/2022
N048418-002B	MW-63-065-Q421	Groundwater	12/16/2021 7:30:00 AM	12/16/2021	1/6/2022
N048418-002C	MW-63-065-Q421	Groundwater	12/16/2021 7:30:00 AM	12/16/2021	1/6/2022
N048418-003A	MW-60-125-Q421	Groundwater	12/16/2021 11:25:00 AM	12/16/2021	1/6/2022
N048418-003B	MW-60-125-Q421	Groundwater	12/16/2021 11:25:00 AM	12/16/2021	1/6/2022
N048418-003C	MW-60-125-Q421	Groundwater	12/16/2021 11:25:00 AM	12/16/2021	1/6/2022
N048418-004A	MW-60BR-245-Q421	Groundwater	12/16/2021 12:08:00 PM	12/16/2021	1/6/2022
N048418-004B	MW-60BR-245-Q421	Groundwater	12/16/2021 12:08:00 PM	12/16/2021	1/6/2022
N048418-005A	MW-64BR-Q421	Groundwater	12/16/2021 12:52:00 PM	12/16/2021	1/6/2022
N048418-005B	MW-64BR-Q421	Groundwater	12/16/2021 12:52:00 PM	12/16/2021	1/6/2022
N048418-005C	MW-64BR-Q421	Groundwater	12/16/2021 12:52:00 PM	12/16/2021	1/6/2022
N048418-006A	MW-98-055-Q421	Groundwater	12/16/2021 1:43:00 PM	12/16/2021	1/6/2022
N048418-006B	MW-98-055-Q421	Groundwater	12/16/2021 1:43:00 PM	12/16/2021	1/6/2022
N048418-007A	MW-98-077-Q421	Groundwater	12/16/2021 2:12:00 PM	12/16/2021	1/6/2022
N048418-007B	MW-98-077-Q421	Groundwater	12/16/2021 2:12:00 PM	12/16/2021	1/6/2022
N048418-008A	MW-83-090-Q421	Groundwater	12/16/2021 11:14:00 AM	12/16/2021	1/6/2022
N048418-008B	MW-83-090-Q421	Groundwater	12/16/2021 11:14:00 AM	12/16/2021	1/6/2022
N048418-008C	MW-83-090-Q421	Groundwater	12/16/2021 11:14:00 AM	12/16/2021	1/6/2022
N048418-009A	MW-83-180-Q421	Groundwater	12/16/2021 10:40:00 AM	12/16/2021	1/6/2022
N048418-009B	MW-83-180-Q421	Groundwater	12/16/2021 10:40:00 AM	12/16/2021	1/6/2022
N048418-009C	MW-83-180-Q421	Groundwater	12/16/2021 10:40:00 AM	12/16/2021	1/6/2022
N048418-010A	MW-83-225-Q421	Groundwater	12/16/2021 9:45:00 AM	12/16/2021	1/6/2022
N048418-010B	MW-83-225-Q421	Groundwater	12/16/2021 9:45:00 AM	12/16/2021	1/6/2022
N048418-010C	MW-83-225-Q421	Groundwater	12/16/2021 9:45:00 AM	12/16/2021	1/6/2022
N048418-011A	MW-83-245-Q421	Groundwater	12/16/2021 9:07:00 AM	12/16/2021	1/6/2022
N048418-011B	MW-83-245-Q421	Groundwater	12/16/2021 9:07:00 AM	12/16/2021	1/6/2022
N048418-011C	MW-83-245-Q421	Groundwater	12/16/2021 9:07:00 AM	12/16/2021	1/6/2022

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048418
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048418-012A	EB-750-Q421	Groundwater	12/16/2021 11:45:00 AM	12/16/2021	1/6/2022

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 8:30:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211217B** QC Batch: **R159036**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/18/2021 12:28 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211230D** QC Batch: **90747**				PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	1.9	0.035	1.0		µg/L	1	12/30/2021 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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 7:30:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217B** QC Batch: **R159036**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1.4	0.025	0.20		µg/L	1	12/17/2021 07:53 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211230D** QC Batch: **90747**				PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	1.3	0.035	1.0		µg/L	1	12/30/2021 02:32 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:**	MW-60-125-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 11:25:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217B**	QC Batch: **R159036**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	480	1.3	10		µg/L	50	12/17/2021 08:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211230D**	QC Batch: **90747**			PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	480	0.18	5.0		µg/L	5	12/30/2021 02:49 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:**	MW-60BR-245-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 12:08:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217B** QC Batch: **R159036**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	7.1	0.13	1.0		µg/L	5	12/18/2021 12:47 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211230D** QC Batch: **90747**				PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	8.6	0.035	1.0		µg/L	1	12/30/2021 02:55 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:**	MW-64BR-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 12:52:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211217B** QC Batch: **R159036**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/18/2021 01:06 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211230D** QC Batch: **90747**				PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/30/2021 03:19 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:**	MW-98-055-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 1:43:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217B** QC Batch: **R159036**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	240	0.50	4.0		µg/L	20	12/17/2021 07:25 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211230D** QC Batch: **90747**				PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	230	0.18	5.0		µg/L	5	12/30/2021 03:37 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:**	MW-98-077-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 2:12:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217B**	QC Batch: **R159036**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	340	1.3	10		µg/L	50	12/17/2021 09:00 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211230D**	QC Batch: **90747**			PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	320	0.18	5.0		µg/L	5	12/30/2021 03:55 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:**	MW-83-090-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 11:14:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217B** QC Batch: **R159036**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	67	0.25	2.0		µg/L	10	12/17/2021 09:37 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211230D** QC Batch: **90747**				PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	65	0.035	1.0		µg/L	1	12/30/2021 04:01 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:**	MW-83-180-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 10:40:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217B** QC Batch: **R159036**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	6.2	0.13	1.0		µg/L	5	12/18/2021 01:25 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211230D** QC Batch: **90747**				PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	8.4	0.035	1.0		µg/L	1	12/30/2021 04:12 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:**	MW-83-225-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 9:45:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217B** QC Batch: **R159036**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	250	1.3	10		µg/L	50	12/17/2021 09:18 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211230D** QC Batch: **90747**				PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	220	0.18	5.0		µg/L	5	12/30/2021 04:42 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:**	MW-83-245-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 9:07:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211220A** QC Batch: **R159037**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	3.6	0.13	1.0		µg/L	5	12/20/2021 12:55 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211230D** QC Batch: **90747**				PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	4.1	0.035	1.0		µg/L	1	12/30/2021 04:48 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:**	EB-750-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 11:45:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211217B** QC Batch: **R159036**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/17/2021 11:50 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
Work Order: N048418
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **LCS-R159036**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159036**
Client ID: **LCSW**	Batch ID: **R159036**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.881	0.20	5.000	0	97.6	90	110				

Sample ID: **MB-R159036**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159036**
Client ID: **PBW**	Batch ID: **R159036**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472064**

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

Sample ID: **N048418-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159036**
Client ID: **ZZZZZZ**	Batch ID: **R159036**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	334.188	4.0	100.0	235.7	98.5	90	110				

Sample ID: **N048418-006AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159036**
Client ID: **ZZZZZZ**	Batch ID: **R159036**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	333.648	4.0	100.0	235.7	97.9	90	110	334.2	0.162	20	

Sample ID: **N048418-002ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159036**
Client ID: **ZZZZZZ**	Batch ID: **R159036**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.451	0.20						1.442	0.664	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: N048418
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048418-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159036**
Client ID: **ZZZZZZ**	Batch ID: **R159036**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.503	0.20	1.000	1.442	106	90	110				

Sample ID: **N048418-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159036**
Client ID: **ZZZZZZ**	Batch ID: **R159036**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	728.140	10	250.0	483.8	97.7	90	110				

Sample ID: **N048418-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159036**
Client ID: **ZZZZZZ**	Batch ID: **R159036**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	589.805	10	250.0	341.6	99.3	90	110				

Sample ID: **N048418-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159036**
Client ID: **ZZZZZZ**	Batch ID: **R159036**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	499.300	10	250.0	251.1	99.3	90	110				

Sample ID: **N048418-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159036**
Client ID: **ZZZZZZ**	Batch ID: **R159036**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472080**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	116.162	2.0	50.00	66.74	98.8	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: N048418
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048418-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159036**
Client ID: **ZZZZZZ** Batch ID: **R159036** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.990	0.20	1.000	0	99.0	90	110				

Sample ID: **N048418-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159036**
Client ID: **ZZZZZZ** Batch ID: **R159036** TestNo: **EPA 218.6** Analysis Date: **12/18/2021** SeqNo: **4472088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.921	1.0	5.000	0	98.4	90	110				

Sample ID: **N048418-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159036**
Client ID: **ZZZZZZ** Batch ID: **R159036** TestNo: **EPA 218.6** Analysis Date: **12/18/2021** SeqNo: **4472090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.104	1.0	5.000	7.112	99.8	90	110				

Sample ID: **N048418-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159036**
Client ID: **ZZZZZZ** Batch ID: **R159036** TestNo: **EPA 218.6** Analysis Date: **12/18/2021** SeqNo: **4472092**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.063	1.0	5.000	0	101	90	110				

Sample ID: **N048418-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159036**
Client ID: **ZZZZZZ** Batch ID: **R159036** TestNo: **EPA 218.6** Analysis Date: **12/18/2021** SeqNo: **4472094**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.297	1.0	5.000	6.228	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: N048418
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R159037**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159037**
Client ID: **PBW**	Batch ID: **R159037**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2021**	SeqNo: **4472103**

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-R159037**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159037**
Client ID: **LCSW**	Batch ID: **R159037**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2021**	SeqNo: **4472104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.912	0.20	5.000	0	98.2	90	110				

Sample ID: **N048422-002ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159037**
Client ID: **ZZZZZZ**	Batch ID: **R159037**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2021**	SeqNo: **4472107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.676	0.20						7.746	0.916	20	

Sample ID: **N048419-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159037**
Client ID: **ZZZZZZ**	Batch ID: **R159037**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2021**	SeqNo: **4472109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.989	1.0	5.000	6.950	101	90	110				

Sample ID: **N048419-004AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159037**
Client ID: **ZZZZZZ**	Batch ID: **R159037**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2021**	SeqNo: **4472110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.231	1.0	5.000	6.950	106	90	110	11.99	2.00	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: N048418
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048418-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159037**
Client ID: **ZZZZZZ**	Batch ID: **R159037**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2021**	SeqNo: **4472114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.419	1.0	5.000	3.566	97.1	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: N048418
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **MB-90747**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159301**
Client ID: **PBW**	Batch ID: **90747**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2021**	SeqNo: **4487219**

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

Sample ID: **LCS-90747**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159301**
Client ID: **LCSW**	Batch ID: **90747**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2021**	SeqNo: **4487220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.458	1.0	10.00	0	94.6	85	115				

Sample ID: **N048418-006BMS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159301**
Client ID: **ZZZZZZ**	Batch ID: **90747**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2021**	SeqNo: **4487251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	233.779	5.0	10.00	227.1	66.5	75	125				S

Sample ID: **N048418-006BMSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159301**
Client ID: **ZZZZZZ**	Batch ID: **90747**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2021**	SeqNo: **4487255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	235.820	5.0	10.00	227.1	86.9	75	125	233.8	0.869	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: N048418
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **N048418-006B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **159301**
Client ID: **ZZZZZZ** Batch ID: **90747** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2021** SeqNo: **4487249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	238.766	5.0	10.00	227.1	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	**Client Sample ID:**	MW-66BR-270-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 8:30:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211230D**	QC Batch: **90747**				PrepDate:	**12/17/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 02:20 PM
Manganese	820	0.13	2.5		µg/L	5	12/30/2021 02:26 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:**	MW-63-065-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 7:30:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211230D**	QC Batch: **90747**				PrepDate:	**12/17/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 02:32 PM
Manganese	ND	0.026	0.50		µg/L	1	12/30/2021 02:32 PM
Molybdenum	16	0.12	0.50		µg/L	1	12/30/2021 02:32 PM
Selenium	0.74	0.044	0.50		µg/L	1	12/30/2021 02:32 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:**	MW-60-125-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 11:25:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-003		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211230D** QC Batch: **90747** PrepDate: **12/17/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 02:43 PM
Manganese	6.1	0.026	0.50		µg/L	1	12/30/2021 02:43 PM
Molybdenum	19	0.12	0.50		µg/L	1	12/30/2021 02:43 PM
Selenium	5.8	0.044	0.50		µg/L	1	12/30/2021 02:43 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
Lab Order: N048418
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048418-004

Client Sample ID: MW-60BR-245-Q421
Collection Date: 12/16/2021 12:08:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211230D**	QC Batch: **90747**				PrepDate:	**12/17/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 02:55 PM
Manganese	1.6	0.026	0.50		µg/L	1	12/30/2021 02:55 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: N048418
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048418-005

Client Sample ID: MW-64BR-Q421
Collection Date: 12/16/2021 12:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211230D**	QC Batch: **90747**			PrepDate:	**12/17/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 03:19 PM
Manganese	1000	0.66	12		µg/L	25	12/30/2021 05:47 PM
Molybdenum	58	0.12	0.50		µg/L	1	12/30/2021 03:19 PM
Selenium	ND	0.044	0.50		µg/L	1	12/30/2021 03:19 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:**	MW-98-055-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 1:43:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211230D**	QC Batch: **90747**			PrepDate:	**12/17/2021**		Analyst: **CEI**
Arsenic	2.8	0.050	0.10		µg/L	1	12/30/2021 03:31 PM
Manganese	1.3	0.026	0.50		µg/L	1	12/30/2021 03:31 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:**	MW-98-077-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 2:12:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211230D**	QC Batch: **90747**			PrepDate:	**12/17/2021**		Analyst: **CEI**
Arsenic	3.0	0.050	0.10		µg/L	1	12/30/2021 03:49 PM
Manganese	2.8	0.026	0.50		µg/L	1	12/30/2021 03:49 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:**	MW-83-090-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 11:14:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-008		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211230D** QC Batch: **90747** PrepDate: **12/17/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	0.30	0.050	0.10		µg/L	1	12/30/2021 04:01 PM
Manganese	3.5	0.026	0.50		µg/L	1	12/30/2021 04:01 PM
Molybdenum	4.0	0.12	0.50		µg/L	1	12/30/2021 04:01 PM
Selenium	3.1	0.044	0.50		µg/L	1	12/30/2021 04:01 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:**	MW-83-180-Q421
Lab Order:	N048418	**Collection Date:**	12/16/2021 10:40:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048418-009		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211231C** QC Batch: **90747** PrepDate: **12/17/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/31/2021 04:48 PM
Manganese	1.1	0.026	0.50		µg/L	1	12/30/2021 04:12 PM
Molybdenum	33	0.12	0.50		µg/L	1	12/30/2021 04:12 PM
Selenium	0.54	0.044	0.50		µg/L	1	12/30/2021 05:53 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
Lab Order: N048418
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048418-010

Client Sample ID: MW-83-225-Q421
Collection Date: 12/16/2021 9:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211230D**	QC Batch: **90747**			PrepDate:	**12/17/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 04:36 PM
Manganese	5.3	0.026	0.50		µg/L	1	12/30/2021 04:36 PM
Molybdenum	47	0.12	0.50		µg/L	1	12/30/2021 04:36 PM
Selenium	ND	0.044	0.50		µg/L	1	12/30/2021 04:36 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: N048418
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048418-011

Client Sample ID: MW-83-245-Q421
Collection Date: 12/16/2021 9:07:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211230D**	QC Batch: **90747**			PrepDate:	**12/17/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 04:48 PM
Manganese	42	0.026	0.50		µg/L	1	12/30/2021 04:48 PM
Molybdenum	64	0.12	0.50		µg/L	1	12/30/2021 04:48 PM
Selenium	ND	0.044	0.50		µg/L	1	12/30/2021 04:48 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: N048418
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **MB-90747**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159301**
Client ID: **PBW**	Batch ID: **90747**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2021**	SeqNo: **4487378**

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

Sample ID: **LCS-90747**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159301**
Client ID: **LCSW**	Batch ID: **90747**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2021**	SeqNo: **4487379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.145	0.10	10.00	0	101	85	115				
Manganese	98.443	0.50	100.0	0	98.4	85	115				
Molybdenum	10.410	0.50	10.00	0	104	85	115				
Selenium	9.093	0.50	10.00	0	90.9	85	115				

Sample ID: **N048418-006BMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159301**
Client ID: **ZZZZZZ**	Batch ID: **90747**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2021**	SeqNo: **4487409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.022	0.10	10.00	2.786	102	75	125				
Manganese	95.143	0.50	100.0	1.296	93.8	75	125				
Molybdenum	30.252	0.50	10.00	19.59	107	75	125				
Selenium	15.739	0.50	10.00	6.683	90.6	75	125				

Sample ID: **N048418-006BMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159301**
Client ID: **ZZZZZZ**	Batch ID: **90747**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2021**	SeqNo: **4487411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.271	0.10	10.00	2.786	105	75	125	13.02	1.89	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: N048418
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N048418-006BMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159301**
Client ID: **ZZZZZZ**	Batch ID: **90747**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2021**	SeqNo: **4487411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	95.704	0.50	100.0	1.296	94.4	75	125	95.14	0.588	20	
Molybdenum	30.172	0.50	10.00	19.59	106	75	125	30.25	0.266	20	
Selenium	15.511	0.50	10.00	6.683	88.3	75	125	15.74	1.46	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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

N048418

CHAIN OF CUSTODY RECORD

Page 1 of 1

| | | |

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:	12/16/2021	Workorder:	N048418
Rep sample Temp (Deg C):	0.2/0.1/0.4	IR Gun ID:	3
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 By: GGJ GGarcia 12/17/2021

Reviewed By: MBC 12/21/2021

ASSET Laboratories

WORK ORDER Summary

17-Dec-21

WorkOrder: N048418

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/16/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048418-001A	MW-66BR-270-Q421	12/16/2021 8:30:00 AM	1/3/2022	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048418-001B			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048418-002A	MW-63-065-Q421	12/16/2021 7:30:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048418-002B			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048418-002C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048418-003A	MW-60-125-Q421	12/16/2021 11:25:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048418-003B			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048418-003C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048418-004A	MW-60BR-245-Q421	12/16/2021 12:08:00 PM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048418-004B			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048418-005A	MW-64BR-Q421	12/16/2021 12:52:00 PM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048418-005B			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048418-005C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

17-Dec-21

WorkOrder: N048418

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/16/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048418-005C	MW-64BR-Q421	12/16/2021 12:52:00 PM	1/3/2022	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048418-006A	MW-98-055-Q421	12/16/2021 1:43:00 PM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☑	☐	WW
N048418-006B			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
N048418-007A	MW-98-077-Q421	12/16/2021 2:12:00 PM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048418-007B			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048418-008A	MW-83-090-Q421	12/16/2021 11:14:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048418-008B			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048418-008C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048418-009A	MW-83-180-Q421	12/16/2021 10:40:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048418-009B			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048418-009C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048418-010A	MW-83-225-Q421	12/16/2021 9:45:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

17-Dec-21

WorkOrder: N048418

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/16/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048418-010B	MW-83-225-Q421	12/16/2021 9:45:00 AM	1/3/2022	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048418-010C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048418-011A	MW-83-245-Q421	12/16/2021 9:07:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048418-011B			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048418-011C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048418-012A	EB-750-Q421	12/16/2021 11:45:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048418-013A	FOLDER	1/3/2022	1/3/2022		Folder	Folder	☐	☐	☐	LAB
			1/3/2022		Folder	Level IV Report	☐	☐	☐	LAB
			1/3/2022		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Riggie Tep

20-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: SM4500-NO3F		
N048418-002B / MW-63-065-Q421	Groundwater	12/16/2021 7:30:00 AM	8OZP	1		
N048418-003B / MW-60-125-Q421	Groundwater	12/16/2021 11:25:00 AM	8OZP	1		
N048418-005B / MW-64BR-Q421	Groundwater	12/16/2021 12:52:00 PM	8OZP	1		
N048418-008B / MW-83-090-Q421	Groundwater	12/16/2021 11:14:00 AM	8OZP	1		
N048418-009B / MW-83-180-Q421	Groundwater	12/16/2021 10:40:00 AM	8OZP	1		
N048418-010B / MW-83-225-Q421	Groundwater	12/16/2021 9:45:00 AM	8OZP	1		
N048418-011B / MW-83-245-Q421	Groundwater	12/16/2021 9:07:00 AM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48418A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555596250

		Date/Time			Date/Time
Relinquished by:	GGarcia	12/20/2021 16:30	**Received by:**		
Relinquished by:			**Received by:**		

January 06, 2022

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048419

RE: PG&E Topock - PCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 16, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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 and Nitrate/Nitrite were subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (2.0 ug/L) and hexavalent chromium (0.88 ug/L) for sample N048419-003 (MW-82-112-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (2.9 ug/L) and hexavalent chromium (0 ug/L) for sample N048419-005 (MW-82-198-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 300.0:

Dilution was necessary due to precipitation of sample upon the addition of eluent.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Nitrite in QC samples N048419-012DMS and N048419-012DMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B:

Matrix Spike Duplicate (MSD) is outside recovery and RPD criteria for Iron in QC sample N048419-007CMSD1 possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (2.0 ug/L) and hexavalent chromium (0.88 ug/L) for sample N048419-003 (MW-82-112-Q421) 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 1.7 and 1.3 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (2.9 ug/L) and hexavalent chromium (0 ug/L) for sample N048419-005 (MW-82-198-Q421) 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 2.7 and 1.9 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048419
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048419-001A	MW-82-046-Q421	Groundwater	12/16/2021 11:56:00 AM	12/16/2021	1/6/2022
N048419-001B	MW-82-046-Q421	Groundwater	12/16/2021 11:56:00 AM	12/16/2021	1/6/2022
N048419-001C	MW-82-046-Q421	Groundwater	12/16/2021 11:56:00 AM	12/16/2021	1/6/2022
N048419-001D	MW-82-046-Q421	Groundwater	12/16/2021 11:56:00 AM	12/16/2021	1/6/2022
N048419-002A	MW-938-Q421	Groundwater	12/16/2021 12:06:00 PM	12/16/2021	1/6/2022
N048419-002B	MW-938-Q421	Groundwater	12/16/2021 12:06:00 PM	12/16/2021	1/6/2022
N048419-002C	MW-938-Q421	Groundwater	12/16/2021 12:06:00 PM	12/16/2021	1/6/2022
N048419-002D	MW-938-Q421	Groundwater	12/16/2021 12:06:00 PM	12/16/2021	1/6/2022
N048419-003A	MW-82-112-Q421	Groundwater	12/16/2021 11:18:00 AM	12/16/2021	1/6/2022
N048419-003B	MW-82-112-Q421	Groundwater	12/16/2021 11:18:00 AM	12/16/2021	1/6/2022
N048419-003C	MW-82-112-Q421	Groundwater	12/16/2021 11:18:00 AM	12/16/2021	1/6/2022
N048419-003D	MW-82-112-Q421	Groundwater	12/16/2021 11:18:00 AM	12/16/2021	1/6/2022
N048419-004A	MW-82-168-Q421	Groundwater	12/16/2021 10:36:00 AM	12/16/2021	1/6/2022
N048419-004B	MW-82-168-Q421	Groundwater	12/16/2021 10:36:00 AM	12/16/2021	1/6/2022
N048419-004C	MW-82-168-Q421	Groundwater	12/16/2021 10:36:00 AM	12/16/2021	1/6/2022
N048419-004D	MW-82-168-Q421	Groundwater	12/16/2021 10:36:00 AM	12/16/2021	1/6/2022
N048419-005A	MW-82-198-Q421	Groundwater	12/16/2021 9:54:00 AM	12/16/2021	1/6/2022
N048419-005B	MW-82-198-Q421	Groundwater	12/16/2021 9:54:00 AM	12/16/2021	1/6/2022
N048419-005C	MW-82-198-Q421	Groundwater	12/16/2021 9:54:00 AM	12/16/2021	1/6/2022
N048419-005D	MW-82-198-Q421	Groundwater	12/16/2021 9:54:00 AM	12/16/2021	1/6/2022
N048419-006A	PT5D-Q421	Groundwater	12/16/2021 12:44:00 PM	12/16/2021	1/6/2022
N048419-006B	PT5D-Q421	Groundwater	12/16/2021 12:44:00 PM	12/16/2021	1/6/2022
N048419-006C	PT5D-Q421	Groundwater	12/16/2021 12:44:00 PM	12/16/2021	1/6/2022
N048419-006D	PT5D-Q421	Groundwater	12/16/2021 12:44:00 PM	12/16/2021	1/6/2022
N048419-007A	PT5M-Q421	Groundwater	12/16/2021 1:20:00 PM	12/16/2021	1/6/2022
N048419-007B	PT5M-Q421	Groundwater	12/16/2021 1:20:00 PM	12/16/2021	1/6/2022
N048419-007C	PT5M-Q421	Groundwater	12/16/2021 1:20:00 PM	12/16/2021	1/6/2022
N048419-007D	PT5M-Q421	Groundwater	12/16/2021 1:20:00 PM	12/16/2021	1/6/2022
N048419-008A	PT5S-Q421	Groundwater	12/16/2021 1:54:00 PM	12/16/2021	1/6/2022

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048419
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048419-008B	PT5S-Q421	Groundwater	12/16/2021 1:54:00 PM	12/16/2021	1/6/2022
N048419-008C	PT5S-Q421	Groundwater	12/16/2021 1:54:00 PM	12/16/2021	1/6/2022
N048419-008D	PT5S-Q421	Groundwater	12/16/2021 1:54:00 PM	12/16/2021	1/6/2022
N048419-009A	MW-21-Q421	Groundwater	12/16/2021 7:25:00 AM	12/16/2021	1/6/2022
N048419-009B	MW-21-Q421	Groundwater	12/16/2021 7:25:00 AM	12/16/2021	1/6/2022
N048419-009C	MW-21-Q421	Groundwater	12/16/2021 7:25:00 AM	12/16/2021	1/6/2022
N048419-009D	MW-21-Q421	Groundwater	12/16/2021 7:25:00 AM	12/16/2021	1/6/2022
N048419-009E	MW-21-Q421	Groundwater	12/16/2021 7:25:00 AM	12/16/2021	1/6/2022
N048419-009F	MW-21-Q421	Groundwater	12/16/2021 7:25:00 AM	12/16/2021	1/6/2022
N048419-010A	MW-21-EB-Q421	Groundwater	12/16/2021 7:20:00 AM	12/16/2021	1/6/2022
N048419-011A	EB-752-Q421	Groundwater	12/16/2021 2:20:00 PM	12/16/2021	1/6/2022
N048419-012A	MW-31-060-Q421	Groundwater	12/16/2021 9:15:00 AM	12/16/2021	1/6/2022
N048419-012B	MW-31-060-Q421	Groundwater	12/16/2021 9:15:00 AM	12/16/2021	1/6/2022
N048419-012C	MW-31-060-Q421	Groundwater	12/16/2021 9:15:00 AM	12/16/2021	1/6/2022
N048419-012D	MW-31-060-Q421	Groundwater	12/16/2021 9:15:00 AM	12/16/2021	1/6/2022
N048419-012E	MW-31-060-Q421	Groundwater	12/16/2021 9:15:00 AM	12/16/2021	1/6/2022
N048419-012F	MW-31-060-Q421	Groundwater	12/16/2021 9:15:00 AM	12/16/2021	1/6/2022
N048419-013A	MW-928-Q421	Groundwater	12/16/2021 9:25:00 AM	12/16/2021	1/6/2022
N048419-013B	MW-928-Q421	Groundwater	12/16/2021 9:25:00 AM	12/16/2021	1/6/2022
N048419-013C	MW-928-Q421	Groundwater	12/16/2021 9:25:00 AM	12/16/2021	1/6/2022
N048419-013D	MW-928-Q421	Groundwater	12/16/2021 9:25:00 AM	12/16/2021	1/6/2022
N048419-013E	MW-928-Q421	Groundwater	12/16/2021 9:25:00 AM	12/16/2021	1/6/2022
N048419-013F	MW-928-Q421	Groundwater	12/16/2021 9:25:00 AM	12/16/2021	1/6/2022
N048419-014A	MW-31-135-Q421	Groundwater	12/16/2021 8:32:00 AM	12/16/2021	1/6/2022
N048419-014B	MW-31-135-Q421	Groundwater	12/16/2021 8:32:00 AM	12/16/2021	1/6/2022
N048419-014C	MW-31-135-Q421	Groundwater	12/16/2021 8:32:00 AM	12/16/2021	1/6/2022
N048419-014D	MW-31-135-Q421	Groundwater	12/16/2021 8:32:00 AM	12/16/2021	1/6/2022
N048419-014E	MW-31-135-Q421	Groundwater	12/16/2021 8:32:00 AM	12/16/2021	1/6/2022
N048419-014F	MW-31-135-Q421	Groundwater	12/16/2021 8:32:00 AM	12/16/2021	1/6/2022
N048419-015A	MW-71-035-Q421	Groundwater	12/16/2021 10:14:00 AM	12/16/2021	1/6/2022

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048419
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048419-015B	MW-71-035-Q421	Groundwater	12/16/2021 10:14:00 AM	12/16/2021	1/6/2022
N048419-015C	MW-71-035-Q421	Groundwater	12/16/2021 10:14:00 AM	12/16/2021	1/6/2022
N048419-015D	MW-71-035-Q421	Groundwater	12/16/2021 10:14:00 AM	12/16/2021	1/6/2022
N048419-015E	MW-71-035-Q421	Groundwater	12/16/2021 10:14:00 AM	12/16/2021	1/6/2022
N048419-015F	MW-71-035-Q421	Groundwater	12/16/2021 10:14:00 AM	12/16/2021	1/6/2022
N048419-016A	EB-751-Q421	Groundwater	12/16/2021 2:15:00 PM	12/16/2021	1/6/2022
N048419-017A	TW-03D-Q421	Groundwater	12/16/2021 8:10:00 AM	12/16/2021	1/6/2022
N048419-017B	TW-03D-Q421	Groundwater	12/16/2021 8:10:00 AM	12/16/2021	1/6/2022
N048419-017C	TW-03D-Q421	Groundwater	12/16/2021 8:10:00 AM	12/16/2021	1/6/2022
N048419-017D	TW-03D-Q421	Groundwater	12/16/2021 8:10:00 AM	12/16/2021	1/6/2022
N048419-017E	TW-03D-Q421	Groundwater	12/16/2021 8:10:00 AM	12/16/2021	1/6/2022
N048419-017F	TW-03D-Q421	Groundwater	12/16/2021 8:10:00 AM	12/16/2021	1/6/2022

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-82-046-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 11:56:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217A**	QC Batch: **R159035**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/17/2021 10:57 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211230D**	QC Batch: **90748**			PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/30/2021 06:40 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:**	MW-938-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 12:06:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211217A** QC Batch: **R159035** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/17/2021 11:16 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP8_211230D** QC Batch: **90748** PrepDate: **12/17/2021** Analyst: **CEI**							
Chromium	ND	0.035	1.0		µg/L	1	12/30/2021 06:52 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:**	MW-82-112-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 11:18:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217A**	QC Batch: **R159035**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	0.88	0.025	0.20		µg/L	1	12/17/2021 11:35 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211230D**	QC Batch: **90748**			PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	2.0	0.035	1.0		µg/L	1	12/30/2021 07:04 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-004

Client Sample ID: MW-82-168-Q421
Collection Date: 12/16/2021 10:36:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211220A** QC Batch: **R159037**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	7.0	0.13	1.0		µg/L	5	12/20/2021 11:49 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP8_211230D** QC Batch: **90748**				PrepDate: **12/17/2021**			Analyst: **CEI**
Chromium	7.5	0.035	1.0		µg/L	1	12/30/2021 07:16 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:**	MW-82-198-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 9:54:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217A**	QC Batch: **R159035**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/17/2021 05:15 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211230D**	QC Batch: **90748**			PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	2.9	0.035	1.0		µg/L	1	12/30/2021 07:40 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:**	PT5D-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 12:44:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217A** QC Batch: **R159035**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	31	0.13	1.0		µg/L	5	12/17/2021 05:34 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211230D** QC Batch: **90748**				PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	29	0.035	1.0		µg/L	1	12/30/2021 07:52 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:**	PT5M-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 1:20:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217A**	QC Batch: **R159035**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/17/2021 09:57 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211230D**	QC Batch: **90748**			PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/30/2021 08:04 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-008

Client Sample ID: PT5S-Q421
Collection Date: 12/16/2021 1:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217A** QC Batch: **R159035**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/17/2021 12:50 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP8_211230D** QC Batch: **90748**				PrepDate: **12/17/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/30/2021 09:09 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:**	MW-21-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 7:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211217A**	QC Batch: **R159035**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/17/2021 05:53 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211230D**	QC Batch: **90748**			PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/30/2021 09:20 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-EB-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 7:20:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211217A** QC Batch: **R159035** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/17/2021 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	**Client Sample ID:**	EB-752-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 2:20:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211217A** QC Batch: **R159035** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/17/2021 03:22 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:**	MW-31-060-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 9:15:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217A** QC Batch: **R159035**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	310	2.5	20		µg/L	100	12/17/2021 01:47 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211230D** QC Batch: **90748**				PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	310	0.18	5.0		µg/L	5	12/30/2021 09:38 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:**	MW-928-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 9:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217A** QC Batch: **R159035**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	310	2.5	20		µg/L	100	12/17/2021 04:00 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211230D** QC Batch: **90748**				PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	310	0.18	5.0		µg/L	5	12/30/2021 10:02 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-014

Client Sample ID: MW-31-135-Q421
Collection Date: 12/16/2021 8:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217A** QC Batch: **R159035**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	13	0.13	1.0		µg/L	5	12/17/2021 02:44 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211230D** QC Batch: **90748**				PrepDate:	**12/17/2021**		Analyst: **CEI**
Chromium	14	0.035	1.0		µg/L	1	12/30/2021 10:08 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-015

Client Sample ID: MW-71-035-Q421
Collection Date: 12/16/2021 10:14:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217A** QC Batch: **R159035**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/17/2021 06:57 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211230D** QC Batch: **90748**				PrepDate: **12/17/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/30/2021 10:20 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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	EB-751-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 2:15:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211217A** QC Batch: **R159035** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/17/2021 03:41 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-017

Client Sample ID: TW-03D-Q421
Collection Date: 12/16/2021 8:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211217A** QC Batch: **R159035**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	400	1.3	10		µg/L	50	12/17/2021 02:06 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211230D** QC Batch: **90748**				PrepDate: **12/17/2021**			Analyst: **CEI**
Chromium	390	0.18	5.0		µg/L	5	12/30/2021 10:38 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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R159035**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **PBW**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472005**

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-R159035**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **LCSW**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.101	0.20	5.000	0	102	90	110				

Sample ID: **N048399-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.977	0.20	1.000	0	97.7	90	110				

Sample ID: **N048398-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.511	0.20	5.000	8.431	102	90	110				

Sample ID: **N048419-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.013	0.20	1.000	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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048419-007AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075	0.20	1.000	0	108	90	110	1.013	5.92	20	

Sample ID: **N048419-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.039	0.20	1.000	0	104	90	110				

Sample ID: **N048419-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID: **N048419-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.937	0.20	1.000	0.8836	105	90	110				

Sample ID: **N048419-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472025**

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	108	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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048398-003ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.678	0.20						8.431	2.89	20	

Sample ID: **N048419-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	795.710	20	500.0	306.3	97.9	90	110				

Sample ID: **N048419-017AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	650.530	10	250.0	399.2	101	90	110				

Sample ID: **N048419-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	38.597	1.0	25.00	13.22	101	90	110				

Sample ID: **N048419-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.001	0.20	1.000	0	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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048419-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	0	102	90	110				

Sample ID: **N048419-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	809.750	20	500.0	309.2	100	90	110				

Sample ID: **N048419-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.010	0.20	1.000	0	101	90	110				

Sample ID: **N048419-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.091	1.0	5.000	0	102	90	110				

Sample ID: **N048419-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **159035**
Client ID: **ZZZZZZ** Batch ID: **R159035** TestNo: **EPA 218.6** Analysis Date: **12/17/2021** SeqNo: **4472048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.860	1.0	25.00	30.88	99.9	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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048419-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.016	1.0	5.000	0	100	90	110				

Sample ID: **N048419-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159035**
Client ID: **ZZZZZZ**	Batch ID: **R159035**	TestNo: **EPA 218.6**		Analysis Date: **12/17/2021**	SeqNo: **4472053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.063	1.0	5.000	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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R159037**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159037**
Client ID: **PBW**	Batch ID: **R159037**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2021**	SeqNo: **4472103**

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-R159037**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159037**
Client ID: **LCSW**	Batch ID: **R159037**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2021**	SeqNo: **4472104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.912	0.20	5.000	0	98.2	90	110				

Sample ID: **N048422-002ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159037**
Client ID: **ZZZZZZ**	Batch ID: **R159037**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2021**	SeqNo: **4472107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.676	0.20						7.746	0.916	20	

Sample ID: **N048419-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159037**
Client ID: **ZZZZZZ**	Batch ID: **R159037**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2021**	SeqNo: **4472109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.989	1.0	5.000	6.950	101	90	110				

Sample ID: **N048419-004AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159037**
Client ID: **ZZZZZZ**	Batch ID: **R159037**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2021**	SeqNo: **4472110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.231	1.0	5.000	6.950	106	90	110	11.99	2.00	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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048418-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159037**
Client ID: **ZZZZZZ**	Batch ID: **R159037**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2021**	SeqNo: **4472114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.419	1.0	5.000	3.566	97.1	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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **MB-90748**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159301**
Client ID: **PBW**	Batch ID: **90748**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2021**	SeqNo: **4487263**

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

Sample ID: **LCS-90748**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159301**
Client ID: **LCSW**	Batch ID: **90748**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2021**	SeqNo: **4487264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.378	1.0	10.00	0	93.8	85	115				

Sample ID: **N048419-007CMS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159301**
Client ID: **ZZZZZZ**	Batch ID: **90748**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2021**	SeqNo: **4487284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.178	1.0	10.00	0.06559	91.1	75	125				

Sample ID: **N048419-007CMSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159301**
Client ID: **ZZZZZZ**	Batch ID: **90748**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2021**	SeqNo: **4487288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.956	1.0	10.00	0.06559	88.9	75	125	9.178	2.45	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:**	MW-21-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 7:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217A** QC Batch: **R159008**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/17/2021 10:57 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217A** QC Batch: **R159008**				PrepDate:			Analyst: **RAB**
Sulfate	1600	12	100		mg/L	200	12/17/2021 06:51 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:**	MW-31-060-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 9:15:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217A** QC Batch: **R159008**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.015	2.5		mg/L	5	12/17/2021 11:13 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217A** QC Batch: **R159008**				PrepDate:			Analyst: **RAB**
Sulfate	210	1.2	10		mg/L	20	12/17/2021 07:07 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:**	MW-928-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 9:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217A** QC Batch: **R159008**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.015	2.5		mg/L	5	12/17/2021 12:16 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217A** QC Batch: **R159008**				PrepDate:			Analyst: **RAB**
Sulfate	210	1.2	10		mg/L	20	12/17/2021 07:55 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-014

Client Sample ID: MW-31-135-Q421
Collection Date: 12/16/2021 8:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217A** QC Batch: **R159008**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/17/2021 11:29 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217A** QC Batch: **R159008**				PrepDate:			Analyst: **RAB**
Sulfate	500	3.0	25		mg/L	50	12/17/2021 03:10 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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 10:14:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217A** QC Batch: **R159008**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/17/2021 11:45 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217A** QC Batch: **R159008**				PrepDate:			Analyst: **RAB**
Sulfate	1200	6.1	50		mg/L	100	12/17/2021 08:10 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-017

Client Sample ID: TW-03D-Q421
Collection Date: 12/16/2021 8:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217A** QC Batch: **R159008**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/17/2021 12:01 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211217A** QC Batch: **R159008**				PrepDate:			Analyst: **RAB**
Sulfate	500	3.0	25		mg/L	50	12/17/2021 08:26 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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_NO2PGE

Sample ID: **MB-R159008_NO2**	SampType: **MBLK**	TestCode: **300_W_NO2P**	Units: **mg/L**	Prep Date:	RunNo: **159008**
Client ID: **PBW**	Batch ID: **R159008**	TestNo: **EPA 300.0**		Analysis Date: **12/17/2021**	SeqNo: **4471569**

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

Sample ID: **LCS-R159008_NO2**	SampType: **LCS**	TestCode: **300_W_NO2P**	Units: **mg/L**	Prep Date:	RunNo: **159008**
Client ID: **LCSW**	Batch ID: **R159008**	TestNo: **EPA 300.0**		Analysis Date: **12/17/2021**	SeqNo: **4471570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	1.297	0.50	1.250	0	104	90	110				

Sample ID: **N048419-012DMS**	SampType: **MS**	TestCode: **300_W_NO2P**	Units: **mg/L**	Prep Date:	RunNo: **159008**
Client ID: **ZZZZZZ**	Batch ID: **R159008**	TestNo: **EPA 300.0**		Analysis Date: **12/17/2021**	SeqNo: **4471577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	10.339	2.5	6.250	0	165	80	120				S

Sample ID: **N048419-012DMSD**	SampType: **MSD**	TestCode: **300_W_NO2P**	Units: **mg/L**	Prep Date:	RunNo: **159008**
Client ID: **ZZZZZZ**	Batch ID: **R159008**	TestNo: **EPA 300.0**		Analysis Date: **12/17/2021**	SeqNo: **4471578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	10.258	2.5	6.250	0	164	80	120	10.34	0.782	20	S

Sample ID: **N048419-014DDUP**	SampType: **DUP**	TestCode: **300_W_NO2P**	Units: **mg/L**	Prep Date:	RunNo: **159008**
Client ID: **ZZZZZZ**	Batch ID: **R159008**	TestNo: **EPA 300.0**		Analysis Date: **12/17/2021**	SeqNo: **4471581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	ND	5.0						0	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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID: **MB-R159008_SO4**	SampType: **MBLK**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **159008**
Client ID: **PBW**	Batch ID: **R159008**	TestNo: **EPA 300.0**		Analysis Date: **12/17/2021**	SeqNo: **4471590**

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

Sample ID: **LCS-R159008_SO4**	SampType: **LCS**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **159008**
Client ID: **LCSW**	Batch ID: **R159008**	TestNo: **EPA 300.0**		Analysis Date: **12/17/2021**	SeqNo: **4471591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.025	0.50	4.000	0	101	90	110				

Sample ID: **N048407-002BMS**	SampType: **MS**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **159008**
Client ID: **ZZZZZZ**	Batch ID: **R159008**	TestNo: **EPA 300.0**		Analysis Date: **12/17/2021**	SeqNo: **4471595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	313.206	10	80.00	226.6	108	80	120				

Sample ID: **N048407-002BMSD**	SampType: **MSD**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **159008**
Client ID: **ZZZZZZ**	Batch ID: **R159008**	TestNo: **EPA 300.0**		Analysis Date: **12/17/2021**	SeqNo: **4471596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	312.616	10	80.00	226.6	107	80	120	313.2	0.189	20	

Sample ID: **N048405-003BDUP**	SampType: **DUP**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **159008**
Client ID: **ZZZZZZ**	Batch ID: **R159008**	TestNo: **EPA 300.0**		Analysis Date: **12/17/2021**	SeqNo: **4471598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	246.976	10						248.7	0.688	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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID: **N048419-014DMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **159008**
Client ID: **ZZZZZZ** Batch ID: **R159008** TestNo: **EPA 300.0** Analysis Date: **12/17/2021** SeqNo: **4471600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	713.840	25	200.0	498.7	108	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	**Client Sample ID:**	MW-82-046-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 11:56:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211218A**	QC Batch: **R159006**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.8	0.084	1.0		mg/L	1	12/18/2021 10:26 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:**	MW-938-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 12:06:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211218A**	QC Batch: **R159006**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.8	0.084	1.0		mg/L	1	12/18/2021 10:42 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:**	MW-82-112-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 11:18:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211218A**	QC Batch: **R159006**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/18/2021 10:57 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:**	MW-82-168-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 10:36:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211218A**	QC Batch: **R159006**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/18/2021 11:13 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:**	MW-82-198-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 9:54:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211218A**	QC Batch: **R159006**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/18/2021 11:28 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-006

Client Sample ID: PT5D-Q421
Collection Date: 12/16/2021 12:44:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211218A**	QC Batch: **R159006**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/18/2021 12:15 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:**	PT5M-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 1:20:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211218A**	QC Batch: **R159006**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/18/2021 09:38 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:**	PT5S-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 1:54:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211218A**	QC Batch: **R159006**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	3.0	0.084	1.0		mg/L	1	12/18/2021 12:30 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	**Client Sample ID:**	MW-21-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 7:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211218A**	QC Batch: **R159006**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/18/2021 12:46 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:**	MW-31-060-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 9:15:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211218A**	QC Batch: **R159006**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/18/2021 01:01 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:**	MW-928-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 9:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211218A**	QC Batch: **R159006**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/18/2021 01:17 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:**	MW-31-135-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 8:32:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211218A**	QC Batch: **R159006**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/18/2021 01:33 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:**	MW-71-035-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 10:14:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211218A**	QC Batch: **R159006**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/18/2021 01:48 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:**	TW-03D-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 8:10:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211218A**	QC Batch: **R159006**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/18/2021 02:04 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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID: **MB-R159006**	SampType: **MBLK**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159006**
Client ID: **PBW**	Batch ID: **R159006**	TestNo: **SM 5310C**		Analysis Date: **12/18/2021**	SeqNo: **4470852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID: **LCS-R159006**	SampType: **LCS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159006**
Client ID: **LCSW**	Batch ID: **R159006**	TestNo: **SM 5310C**		Analysis Date: **12/18/2021**	SeqNo: **4470853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.811	1.0	5.000	0	96.2	85	115				

Sample ID: **N048419-007D-MS**	SampType: **MS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159006**
Client ID: **ZZZZZZ**	Batch ID: **R159006**	TestNo: **SM 5310C**		Analysis Date: **12/18/2021**	SeqNo: **4470855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.861	1.0	5.000	0.3944	89.3	75	125				

Sample ID: **N048419-007D-MSD**	SampType: **MSD**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159006**
Client ID: **ZZZZZZ**	Batch ID: **R159006**	TestNo: **SM 5310C**		Analysis Date: **12/18/2021**	SeqNo: **4470856**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.903	1.0	5.000	0.3944	90.2	75	125	4.861	0.868	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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-001

Client Sample ID: MW-82-046-Q421
Collection Date: 12/16/2021 11:56:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222D**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Iron	2900	13	20		µg/L	1	12/22/2021 07:33 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-002

Client Sample ID: MW-938-Q421
Collection Date: 12/16/2021 12:06:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222D**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Iron	3200	13	20		µg/L	1	12/22/2021 07:38 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-003

Client Sample ID: MW-82-112-Q421
Collection Date: 12/16/2021 11:18:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222D**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/22/2021 07:44 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-004

Client Sample ID: MW-82-168-Q421
Collection Date: 12/16/2021 10:36:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222D**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Iron	31	13	20		µg/L	1	12/22/2021 07:49 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:**	MW-82-198-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 9:54:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222D**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Iron	120	13	20		µg/L	1	12/22/2021 07:54 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-006

Client Sample ID: PT5D-Q421
Collection Date: 12/16/2021 12:44:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222D**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/22/2021 08:00 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-007

Client Sample ID: PT5M-Q421
Collection Date: 12/16/2021 1:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222D**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/22/2021 08:05 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		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-008

Client Sample ID: PT5S-Q421
Collection Date: 12/16/2021 1:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222D**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Iron	650	13	20		µg/L	1	12/22/2021 08:38 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:**	MW-21-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 7:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211222D**	QC Batch: **90778**			PrepDate:	**12/20/2021**		Analyst: **DJ**
Iron	76	13	20		µg/L	1	12/22/2021 08:42 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:**	MW-31-060-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 9:15:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222D**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Iron	21	13	20		µg/L	1	12/22/2021 08:47 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-013

Client Sample ID: MW-928-Q421
Collection Date: 12/16/2021 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222D**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/22/2021 08:52 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-014

Client Sample ID: MW-31-135-Q421
Collection Date: 12/16/2021 8:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222D**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/22/2021 08:57 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:**	MW-71-035-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 10:14:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222D**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Iron	31	13	20		µg/L	1	12/22/2021 09:03 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:**	TW-03D-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 8:10:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211222D**	QC Batch: **90778**				PrepDate:	**12/20/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/22/2021 09:08 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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N048398-002CMS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **12/20/2021**	RunNo: **159140**
Client ID: **ZZZZZZ**	Batch ID: **90778**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/22/2021**	SeqNo: **4476539**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	236.961	20	100.0	121.3	116	75	125				

Sample ID: **N048398-002CMSD1**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **12/20/2021**	RunNo: **159140**
Client ID: **ZZZZZZ**	Batch ID: **90778**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/22/2021**	SeqNo: **4476540**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	198.519	20	100.0	121.3	77.2	75	125	237.0	17.7	20	

Sample ID: **MB-90778**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **12/20/2021**	RunNo: **159140**
Client ID: **PBW**	Batch ID: **90778**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/22/2021**	SeqNo: **4476544**

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

Sample ID: **N048419-007CMS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **12/20/2021**	RunNo: **159140**
Client ID: **ZZZZZZ**	Batch ID: **90778**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/22/2021**	SeqNo: **4476562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	98.013	20	100.0	0	98.0	75	125				

Sample ID: **N048419-007CMSD1**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **12/20/2021**	RunNo: **159140**
Client ID: **ZZZZZZ**	Batch ID: **90778**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/22/2021**	SeqNo: **4476563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	265.219	20	100.0	0	265	75	125	98.01	92.1	20	SR

Qualifiers:

- B Analyte detected in 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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **LCS1-90778**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **12/20/2021**	RunNo: **159140**
Client ID: **LCSW**	Batch ID: **90778**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/22/2021**	SeqNo: **4476966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	103.536	20	100.0	0	104	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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N048398-002C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **159140**
Client ID: **ZZZZZZ**	Batch ID: **90778**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/22/2021**	SeqNo: **4476538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	227.066	20	100.0	121.3	106	80	120				

Sample ID: **N048419-007C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **159140**
Client ID: **ZZZZZZ**	Batch ID: **90778**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/22/2021**	SeqNo: **4476559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	199.471	20	100.0	0	199	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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-001

Client Sample ID: MW-82-046-Q421
Collection Date: 12/16/2021 11:56:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211230D**	QC Batch: **90748**				PrepDate:	**12/17/2021**	Analyst: **CEI**
Arsenic	15	0.050	0.10		µg/L	1	12/30/2021 06:40 PM
Barium	61	0.083	1.0		µg/L	1	12/30/2021 06:40 PM
Manganese	170	0.026	0.50		µg/L	1	12/30/2021 06:40 PM
Molybdenum	11	0.12	0.50		µg/L	1	12/30/2021 06:40 PM
Selenium	2.0	0.044	0.50		µg/L	1	12/30/2021 06:40 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-002

Client Sample ID: MW-938-Q421
Collection Date: 12/16/2021 12:06:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211230D**	QC Batch: **90748**			PrepDate:		**12/17/2021**	Analyst: **CEI**
Arsenic	15	0.050	0.10		µg/L	1	12/30/2021 06:52 PM
Barium	59	0.083	1.0		µg/L	1	12/30/2021 06:52 PM
Manganese	170	0.026	0.50		µg/L	1	12/30/2021 06:52 PM
Molybdenum	11	0.12	0.50		µg/L	1	12/30/2021 06:52 PM
Selenium	1.8	0.044	0.50		µg/L	1	12/30/2021 06:52 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:**	MW-82-112-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 11:18:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-003		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211230D** QC Batch: **90748** PrepDate: **12/17/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 07:04 PM
Barium	35	0.083	1.0		µg/L	1	12/30/2021 07:04 PM
Manganese	27	0.026	0.50		µg/L	1	12/30/2021 07:04 PM
Molybdenum	8.7	0.12	0.50		µg/L	1	12/30/2021 07:04 PM
Selenium	ND	0.044	0.50		µg/L	1	12/30/2021 07:04 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:**	MW-82-168-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 10:36:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-004		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211230D** QC Batch: **90748** PrepDate: **12/17/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 07:16 PM
Barium	48	0.083	1.0		µg/L	1	12/30/2021 07:16 PM
Manganese	140	0.026	0.50		µg/L	1	12/30/2021 07:16 PM
Molybdenum	15	0.12	0.50		µg/L	1	12/30/2021 07:16 PM
Selenium	ND	0.044	0.50		µg/L	1	12/30/2021 07:16 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:**	MW-82-198-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 9:54:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-005		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211230D** QC Batch: **90748** PrepDate: **12/17/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 07:40 PM
Barium	34	0.083	1.0		µg/L	1	12/30/2021 07:40 PM
Manganese	57	0.026	0.50		µg/L	1	12/30/2021 07:40 PM
Molybdenum	140	0.12	0.50		µg/L	1	12/30/2021 07:40 PM
Selenium	ND	0.044	0.50		µg/L	1	12/30/2021 07:40 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-006

Client Sample ID: PT5D-Q421
Collection Date: 12/16/2021 12:44:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211231C**	QC Batch: **90748**			PrepDate:		**12/17/2021**	Analyst: **CEI**
Arsenic	1.5	0.050	0.10		µg/L	1	12/31/2021 05:30 PM
Barium	20	0.083	1.0		µg/L	1	12/30/2021 07:52 PM
Manganese	31	0.026	0.50		µg/L	1	12/30/2021 07:52 PM
Molybdenum	100	0.12	0.50		µg/L	1	12/30/2021 07:52 PM
Selenium	ND	0.044	0.50		µg/L	1	12/30/2021 07:52 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-007

Client Sample ID: PT5M-Q421
Collection Date: 12/16/2021 1:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211230D**	QC Batch: **90748**			PrepDate:	**12/17/2021**		Analyst: **CEI**
Arsenic	1.7	0.050	0.10		µg/L	1	12/30/2021 08:04 PM
Barium	23	0.083	1.0		µg/L	1	12/30/2021 08:04 PM
Manganese	940	0.66	12		µg/L	25	12/31/2021 05:00 PM
Molybdenum	11	0.12	0.50		µg/L	1	12/30/2021 08:04 PM
Selenium	ND	0.044	0.50		µg/L	1	12/30/2021 08:04 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-008

Client Sample ID: PT5S-Q421
Collection Date: 12/16/2021 1:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211230D**	QC Batch: **90748**			PrepDate:		**12/17/2021**	Analyst: **CEI**
Arsenic	13	0.050	0.10		µg/L	1	12/30/2021 09:09 PM
Barium	84	0.083	1.0		µg/L	1	12/30/2021 09:09 PM
Manganese	210	0.13	2.5		µg/L	5	12/30/2021 09:14 PM
Molybdenum	6.1	0.12	0.50		µg/L	1	12/30/2021 09:09 PM
Selenium	ND	0.044	0.50		µg/L	1	12/30/2021 09:09 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:**	MW-21-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 7:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211231C**	QC Batch: **90748**				PrepDate:	**12/17/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/31/2021 05:36 PM
Barium	41	0.083	1.0		µg/L	1	12/30/2021 09:20 PM
Manganese	200	0.13	2.5		µg/L	5	12/30/2021 09:26 PM
Molybdenum	65	0.12	0.50		µg/L	1	12/30/2021 09:20 PM
Selenium	4.5	0.044	0.50		µg/L	1	12/30/2021 09:20 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		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-012

Client Sample ID: MW-31-060-Q421
Collection Date: 12/16/2021 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211230D**	QC Batch: **90748**			PrepDate:		**12/17/2021**	Analyst: **CEI**
Arsenic	0.52	0.050	0.10		µg/L	1	12/30/2021 09:32 PM
Barium	55	0.083	1.0		µg/L	1	12/30/2021 09:32 PM
Manganese	1.3	0.026	0.50		µg/L	1	12/30/2021 09:32 PM
Molybdenum	25	0.12	0.50		µg/L	1	12/30/2021 09:32 PM
Selenium	3.1	0.044	0.50		µg/L	1	12/30/2021 09:32 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
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-013

Client Sample ID: MW-928-Q421
Collection Date: 12/16/2021 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_220103C**	QC Batch: **90748**			PrepDate:		**12/17/2021**	Analyst: **CEI**
Arsenic	0.32	0.050	0.10		µg/L	1	1/3/2022 12:32 PM
Barium	57	0.083	1.0		µg/L	1	12/30/2021 09:44 PM
Manganese	1.3	0.026	0.50		µg/L	1	12/30/2021 09:44 PM
Molybdenum	26	0.12	0.50		µg/L	1	12/30/2021 09:44 PM
Selenium	3.1	0.044	0.50		µg/L	1	12/30/2021 09:44 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:**	MW-31-135-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 8:32:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-014		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211230D** QC Batch: **90748** PrepDate: **12/17/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 10:08 PM
Barium	46	0.083	1.0		µg/L	1	12/31/2021 05:59 PM
Manganese	ND	0.026	0.50		µg/L	1	12/30/2021 10:08 PM
Molybdenum	27	0.12	0.50		µg/L	1	12/30/2021 10:08 PM
Selenium	0.58	0.044	0.50		µg/L	1	12/30/2021 10:08 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:**	MW-71-035-Q421
Lab Order:	N048419	**Collection Date:**	12/16/2021 10:14:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048419-015		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211230D** QC Batch: **90748** PrepDate: **12/17/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 10:20 PM
Barium	42	0.083	1.0		µg/L	1	12/31/2021 06:05 PM
Manganese	71	0.026	0.50		µg/L	1	12/30/2021 10:20 PM
Molybdenum	15	0.12	0.50		µg/L	1	12/30/2021 10:20 PM
Selenium	ND	0.044	0.50		µg/L	1	12/30/2021 10:20 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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048419-017

Client Sample ID: TW-03D-Q421
Collection Date: 12/16/2021 8:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211230D**	QC Batch: **90748**				PrepDate:	**12/17/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/30/2021 10:32 PM
Barium	36	0.083	1.0		µg/L	1	12/31/2021 06:11 PM
Manganese	13	0.026	0.50		µg/L	1	12/30/2021 10:32 PM
Molybdenum	22	0.12	0.50		µg/L	1	12/30/2021 10:32 PM
Selenium	3.4	0.044	0.50		µg/L	1	12/30/2021 10:32 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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **MB-90748** SampType: **MBLK** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/17/2021** RunNo: **159301**
Client ID: **PBW** Batch ID: **90748** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2021** SeqNo: **4487422**

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									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-90748** SampType: **LCS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/17/2021** RunNo: **159301**
Client ID: **LCSW** Batch ID: **90748** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2021** SeqNo: **4487423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.091	0.10	10.00	0	101	85	115				
Barium	10.545	1.0	10.00	0	105	85	115				
Manganese	99.519	0.50	100.0	0	99.5	85	115				
Molybdenum	10.215	0.50	10.00	0	102	85	115				
Selenium	9.284	0.50	10.00	0	92.8	85	115				

Sample ID: **N048419-007CMS** SampType: **MS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/17/2021** RunNo: **159301**
Client ID: **ZZZZZZ** Batch ID: **90748** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/30/2021** SeqNo: **4487443**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.654	0.10	10.00	1.652	100	75	125				
Barium	31.777	1.0	10.00	22.50	92.8	75	125				
Molybdenum	21.411	0.50	10.00	10.98	104	75	125				
Selenium	9.100	0.50	10.00	0	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: N048419
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N048419-007CMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159301**
Client ID: **ZZZZZZ**	Batch ID: **90748**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/30/2021**	SeqNo: **4487447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.909	0.10	10.00	1.652	103	75	125	11.65	2.16	20	
Barium	32.057	1.0	10.00	22.50	95.6	75	125	31.78	0.878	20	
Molybdenum	21.133	0.50	10.00	10.98	101	75	125	21.41	1.31	20	
Selenium	8.896	0.50	10.00	0	89.0	75	125	9.100	2.26	20	

Sample ID: **N048419-007CMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159307**
Client ID: **ZZZZZZ**	Batch ID: **90748**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/31/2021**	SeqNo: **4487884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	1022.878	12	100.0	939.3	83.6	75	125				

Sample ID: **N048419-007CMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/17/2021**	RunNo: **159307**
Client ID: **ZZZZZZ**	Batch ID: **90748**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/31/2021**	SeqNo: **4487885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	1036.689	12	100.0	939.3	97.4	75	125	1023	1.34	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

N048419

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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

| | | |

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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 ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: [redacted]	Address:	Sample Receipt Condition (Y / N): 1. Chilled X; 2. Headspace; 3. Container Intact X; 4. Seal Present; 5. IR number 3; 6. Method of Cooling: ICE
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pwox.com P.O.#	Sample Temp: 0.2, 0.1, 0.4
Submitted By: Reggie Tep		Phone: 949-727-1400, ext 200 Fax:	Global ID:
Title: Field Tech	Phone: 916-786-3302 Fax:		Courier: ASSET
Signature: Date: 12/16/21	Sampled By: Reggie Tep		Tracking No.:
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*		
Project Name: PG&E Topock - PCM	Signature: Date: 12/16/21		
Project Number: 30110373.4Q21GW			

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Barium, Iron, Molybdenum, Selenium (500mL poly)	Nitrite, sulfate (EPA 300.0) (1 L poly)	Ammonia as Nitrogen (SM4500NH3); H2SO4 (1 L poly)	Total Organic Carbon (SM5310C); H2SO4 (3x40 mL VOA)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048419-15	MW-71-035-Q421	12/16/21	10:14		X	X	X	X	X	X	X	X	E	8	P	BNS	
2	-16	EB-751-Q421	12/16/21	14:15		X								E	1	P	BNS	
3	-17	TW-03D-Q421	12/16/21	8:10		X	X	X	X	X	X	X	X	E	8	P	BNS	
4																		
5																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Reggie Tep	12/16/21 1615	[signature]	12/16/21 @ 1615
REL/REC: MACARTIN		[signature]	12/16/21 @ 1830
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished 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
- [x] E = Routine 5-7 Workdays

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	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:	12/16/2021	Workorder:	N048419
Rep sample Temp (Deg C):	0.2/0.1/0.4	IR Gun ID:	3
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	Other
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 By: GGJ GGarcia 12/17/2021

Reviewed By: MBC 12/23/2021

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048419

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/16/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048419-001A	MW-82-046-Q421	12/16/2021 11:56:00 AM	1/3/2022	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-001B			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048419-001C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048419-001D			1/3/2022		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048419-002A	MW-938-Q421	12/16/2021 12:06:00 PM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-002B			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048419-002C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048419-002D			1/3/2022		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048419-003A	MW-82-112-Q421	12/16/2021 11:18:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-003B			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048419-003C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048419

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/16/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048419-003C	MW-82-112-Q421	12/16/2021 11:18:00 AM	1/3/2022	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048419-003D			1/3/2022		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048419-004A	MW-82-168-Q421	12/16/2021 10:36:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-004B			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048419-004C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048419-004D			1/3/2022		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048419-005A	MW-82-198-Q421	12/16/2021 9:54:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-005B			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048419-005C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048419-005D			1/3/2022		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048419-006A	PT5D-Q421	12/16/2021 12:44:00 PM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-006B			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048419

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/16/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048419-006C	PT5D-Q421	12/16/2021 12:44:00 PM	1/3/2022	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048419-006D			1/3/2022		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048419-007A	PT5M-Q421	12/16/2021 1:20:00 PM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☑	☐	WW
N048419-007B			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☑	☑	SUB
N048419-007C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			1/3/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☑	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
N048419-007D			1/3/2022		SM 5310C	TOTAL ORGANIC CARBON	☐	☑	☐	VW
N048419-008A	PT5S-Q421	12/16/2021 1:54:00 PM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-008B			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048419-008C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048419

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/16/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048419-008D	PT5S-Q421	12/16/2021 1:54:00 PM	1/3/2022	Groundwater	SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048419-009A	MW-21-Q421	12/16/2021 7:25:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-009B							☐	☐	☐	WW
N048419-009C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048419-009D			1/3/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/3/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048419-009E			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			1/3/2022		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048419-009F			1/3/2022		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048419-010A	MW-21-EB-Q421	12/16/2021 7:20:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-011A	EB-752-Q421	12/16/2021 2:20:00 PM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-012A	MW-31-060-Q421	12/16/2021 9:15:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-012B							☐	☐	☐	WW
N048419-012C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048419

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/16/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048419-012C	MW-31-060-Q421	12/16/2021 9:15:00 AM	1/3/2022	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048419-012D			1/3/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/3/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048419-012E			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			1/3/2022		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048419-012F			1/3/2022		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048419-013A	MW-928-Q421	12/16/2021 9:25:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-013B							☐	☐	☐	WW
N048419-013C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048419-013D			1/3/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/3/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048419-013E			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			1/3/2022		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048419-013F			1/3/2022		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048419-014A	MW-31-135-Q421	12/16/2021 8:32:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-014B							☐	☐	☐	WW
N048419-014C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048419

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/16/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048419-014C	MW-31-135-Q421	12/16/2021 8:32:00 AM	1/3/2022	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048419-014D			1/3/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/3/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048419-014E			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			1/3/2022		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048419-014F			1/3/2022		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048419-015A	MW-71-035-Q421	12/16/2021 10:14:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-015B							☐	☐	☐	WW
N048419-015C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048419-015D			1/3/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/3/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048419-015E			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			1/3/2022		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048419-015F			1/3/2022		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW

ASSET Laboratories

WORK ORDER Summary

23-Dec-21

WorkOrder: N048419

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/16/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048419-016A	EB-751-Q421	12/16/2021 2:15:00 PM	1/3/2022	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-017A	TW-03D-Q421	12/16/2021 8:10:00 AM	1/3/2022		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048419-017B							☐	☐	☐	WW
N048419-017C			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/3/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/3/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048419-017D			1/3/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/3/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048419-017E			1/3/2022		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			1/3/2022		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048419-017F			1/3/2022		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048419-018A	FOLDER	1/3/2022	1/3/2022		Folder	Folder	☐	☐	☐	LAB
			1/3/2022		Folder	Level IV Report	☐	☐	☐	LAB
			1/3/2022		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Riggie Tep

20-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3D	SM4500-NO3F	
N048419-001B / MW-82-046-Q421	Groundwater	12/16/2021 11:56:00 AM	8OZP		1	
N048419-002B / MW-938-Q421	Groundwater	12/16/2021 12:06:00 PM	8OZP		1	
N048419-003B / MW-82-112-Q421	Groundwater	12/16/2021 11:18:00 AM	8OZP		1	
N048419-004B / MW-82-168-Q421	Groundwater	12/16/2021 10:36:00 AM	8OZP		1	
N048419-005B / MW-82-198-Q421	Groundwater	12/16/2021 9:54:00 AM	8OZP		1	
N048419-006B / PT5D-Q421	Groundwater	12/16/2021 12:44:00 PM	8OZP		1	
N048419-007B / PT5M-Q421	Groundwater	12/16/2021 1:20:00 PM	8OZP		1	MS/MSD
N048419-008B / PT5S-Q421	Groundwater	12/16/2021 1:54:00 PM	8OZP		1	
N048419-009E / MW-21-Q421	Groundwater	12/16/2021 7:25:00 AM	16OZP	1	1	
N048419-012E / MW-31-060-Q421	Groundwater	12/16/2021 9:15:00 AM	16OZP	1	1	
N048419-013E / MW-928-Q421	Groundwater	12/16/2021 9:25:00 AM	16OZP	1	1	
N048419-014E / MW-31-135-Q421	Groundwater	12/16/2021 8:32:00 AM	16OZP	1	1	
N048419-015E / MW-71-035-Q421	Groundwater	12/16/2021 10:14:00 AM	16OZP	1	1	
N048419-017E / TW-03D-Q421	Groundwater	12/16/2021 8:10:00 AM	16OZP	1	1	

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48219A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT

Please analyze for Ammonia (SM4500NH3) and Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555596250

		Date/Time			Date/Time
Relinquished by:	GGarcia	12/20/2021 16:30	**Received by:**		
Relinquished by:			**Received by:**		

January 25, 2022

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048464

RE: PG&E Topock- Rem Well Baseline, 30106892

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 21, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock- Rem Well Baseline, 30106892
Lab Order: N048464

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.

Subcontracted Analyses:

Ammonia, TKN, BOD and Sulfide were subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 300.0:

Dilution was necessary due to precipitation of sample upon the addition of eluent.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Nitrite possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery and RPD criteria for some analytes in QC samples N048464-001I-MS1, N048464-001I-MSD1, N048464-001I-MS2 and N048464-001I-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery and RPD criteria for some analytes in QC samples N048464-001I-MSD1 and N048464-001I-MSD2 possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. 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 and RPD criteria for some analytes in QC samples N048464-001J-MS1, N048464-001J-MSD1and N048464-001J-MSD2 possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N048458-001E-MS and N048458-001E-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N048458-001E-MS and N048458-001E-MSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) have no recovery for Nickel in QC samples at 1x dilution possibly due to matrix interference. The whole batch was re-digested and reanalyzed for Nickel and PS/MS/MSD at 25x dilution was recovered at above 50%. Thus sample reference N045458-001 and MS/MSD were reported at 25x dilution. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Total:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N048458-001F-MS and N048458-001F-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery and RPD criteria for some analytes in QC samples N048458-001F-MS and N048458-001F-MSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) have no recovery for Nickel in QC samples at 1x dilution possibly due to matrix interference. The whole batch was re-digested and reanalyzed for Nickel and PS/MS/MSD at 25x dilution was recovered at above 50%. Thus sample reference N045458-

001 and MS/MSD were reported at 25x dilution. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 5310C:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N048464-001H-MS and N048464-001H-MSD at lower dilutions possibly due to matrix interference. QC samples were further diluted and recovery passed criteria. Thus sample reference N048464-001H and MS/MSD were reported at 10x dilution. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock- Rem Well Baseline, 30106892
Lab Order: N048464
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048464-001A	IRZ-23-143-122121	Groundwater	12/21/2021 10:30:00 AM	12/21/2021	1/25/2022
N048464-001B	IRZ-23-143-122121	Groundwater	12/21/2021 10:30:00 AM	12/21/2021	1/25/2022
N048464-001C	IRZ-23-143-122121	Groundwater	12/21/2021 10:30:00 AM	12/21/2021	1/25/2022
N048464-001D	IRZ-23-143-122121	Groundwater	12/21/2021 10:30:00 AM	12/21/2021	1/25/2022
N048464-001E	IRZ-23-143-122121	Groundwater	12/21/2021 10:30:00 AM	12/21/2021	1/25/2022
N048464-001F	IRZ-23-143-122121	Groundwater	12/21/2021 10:30:00 AM	12/21/2021	1/25/2022
N048464-001G	IRZ-23-143-122121	Groundwater	12/21/2021 10:30:00 AM	12/21/2021	1/25/2022
N048464-001H	IRZ-23-143-122121	Groundwater	12/21/2021 10:30:00 AM	12/21/2021	1/25/2022
N048464-001I	IRZ-23-143-122121	Groundwater	12/21/2021 10:30:00 AM	12/21/2021	1/25/2022
N048464-001J	IRZ-23-143-122121	Groundwater	12/21/2021 10:30:00 AM	12/21/2021	1/25/2022
N048464-001K	IRZ-23-143-122121	Groundwater	12/21/2021 10:30:00 AM	12/21/2021	1/25/2022
N048464-001L	IRZ-23-143-122121	Groundwater	12/21/2021 10:30:00 AM	12/21/2021	1/25/2022

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	IRZ-23-143-122121
Lab Order:	N048464	**Collection Date:**	12/21/2021 10:30:00 AM
Project:	PG&E Topock- Rem Well Baseline, 30106892	**Matrix:**	GROUNDWATER
Lab ID:	N048464-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211223D**	QC Batch: **90857**			PrepDate:	**12/23/2021**		Analyst: **NS**
Total Dissolved Solids (Residue, Filterable)	2200	25	25		mg/L	1	12/23/2021 01:02 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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-90857**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/23/2021**	RunNo: **159169**
Client ID: **PBW**	Batch ID: **90857**	TestNo: **SM2540C**		Analysis Date: **12/23/2021**	SeqNo: **4479374**

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-90857**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/23/2021**	RunNo: **159169**
Client ID: **LCSW**	Batch ID: **90857**	TestNo: **SM2540C**		Analysis Date: **12/23/2021**	SeqNo: **4479375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1038.000	10	1000	0	104	80	120				

Sample ID **N048464-001E-DUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/23/2021**	RunNo: **159169**
Client ID: **ZZZZZZ**	Batch ID: **90857**	TestNo: **SM2540C**		Analysis Date: **12/23/2021**	SeqNo: **4479384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	2235.000	25						2208	1.24	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:**	IRZ-23-143-122121
Lab Order:	N048464	**Collection Date:**	12/21/2021 10:30:00 AM
Project:	PG&E Topock- Rem Well Baseline, 30106892	**Matrix:**	GROUNDWATER
Lab ID:	N048464-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211221A**	QC Batch: **R159112**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	150	0.50	4.0		µg/L	20	12/21/2021 07:13 PM
TOTAL METALS BY ICPMS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211231A**	QC Batch: **90908**			PrepDate:	**12/30/2021**		Analyst: **CEI**
Chromium	370	0.18	5.0		µg/L	5	1/1/2022 05:40 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211231B**	QC Batch: **90907**			PrepDate:	**12/30/2021**		Analyst: **CEI**
Chromium	150	0.035	1.0		µg/L	1	12/31/2021 11:50 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
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R159112	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159112		
Client ID:	PBW	Batch ID:	R159112	TestNo:	EPA 218.6			Analysis Date:	12/21/2021	SeqNo:	4474866		
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-R159112	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159112		
Client ID:	LCSW	Batch ID:	R159112	TestNo:	EPA 218.6			Analysis Date:	12/21/2021	SeqNo:	4474867		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.843	0.20	5.000	0	96.9	90	110						

Sample ID	N048458-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159112		
Client ID:	ZZZZZZ	Batch ID:	R159112	TestNo:	EPA 218.6			Analysis Date:	12/21/2021	SeqNo:	4474876		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	45.043	1.0	25.00	19.73	101	90	110						

Sample ID	N048458-006AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159112		
Client ID:	ZZZZZZ	Batch ID:	R159112	TestNo:	EPA 218.6			Analysis Date:	12/21/2021	SeqNo:	4474877		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	45.226	1.0	25.00	19.73	102	90	110	45.04	0.404	20			

Sample ID	N048458-010ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159112		
Client ID:	ZZZZZZ	Batch ID:	R159112	TestNo:	EPA 218.6			Analysis Date:	12/21/2021	SeqNo:	4474879		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	147.316	4.0						143.5	2.63	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048458-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474880**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	245.634	4.0	100.0	143.5	102	90	110				

Sample ID **N048458-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3000.920	40	1000	1977	102	90	110				

Sample ID **N048458-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	140.036	2.0	50.00	90.51	99.1	90	110				

Sample ID **N048458-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	565.900	10	250.0	303.0	105	90	110				

Sample ID **N048458-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	515.180	10	250.0	267.2	99.2	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048458-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1014.950	20	500.0	515.0	100	90	110				

Sample ID **N048458-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5370.100	100	2500	2920	98.0	90	110				

Sample ID **N048458-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5708.650	100	2500	3185	101	90	110				

Sample ID **N048458-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6150.400	100	2500	3710	97.6	90	110				

Sample ID **N048458-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474901**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1086.460	20	500.0	585.4	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048458-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474903**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	474.480	10	250.0	220.9	101	90	110				

Sample ID **N048458-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	116.308	2.0	50.00	64.64	103	90	110				

Sample ID **N048458-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2417.480	40	1000	1409	101	90	110				

Sample ID **N048458-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	77.304	1.0	25.00	51.92	102	90	110				

Sample ID **N048458-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **159112**
Client ID: **ZZZZZZ**	Batch ID: **R159112**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2021**	SeqNo: **4474911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	114.918	2.0	50.00	65.21	99.4	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048464-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	159112
Client ID:	ZZZZZZ	Batch ID:	R159112	TestNo:	EPA 218.6			Analysis Date:	12/21/2021	SeqNo:	4474913

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	251.328	4.0	100.0	149.1	102	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W_CRPGE_TPK

Sample ID	MB-90908	SampType:	MBLK	TestCode:	6020_W_CRP	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159309
Client ID:	PBW	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/1/2022	SeqNo:	4488543

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.140	1.0									

Sample ID	LCS-90908	SampType:	LCS	TestCode:	6020_W_CRP	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159309
Client ID:	LCSW	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/1/2022	SeqNo:	4488544

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.382	1.0	10.00	0	104	85	115				

Sample ID	N048458-001F-MS	SampType:	MS	TestCode:	6020_W_CRP	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159309
Client ID:	ZZZZZZ	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/1/2022	SeqNo:	4488551

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	648.590	5.0	10.00	630.6	180	75	125				S

Sample ID	N048458-001F-MSD	SampType:	MSD	TestCode:	6020_W_CRP	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159309
Client ID:	ZZZZZZ	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/1/2022	SeqNo:	4488555

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	647.990	5.0	10.00	630.6	174	75	125	648.6	0.0925	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90907	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159308
Client ID:	PBW	Batch ID:	90907	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/31/2021	SeqNo:	4488094

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

Sample ID	LCS-90907	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159308
Client ID:	LCSW	Batch ID:	90907	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/31/2021	SeqNo:	4488095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.344	1.0	10.00	0	103	85	115				

Sample ID	N048458-001E-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159395
Client ID:	ZZZZZZ	Batch ID:	90907	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2022	SeqNo:	4491442

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	686.759	5.0	10.00	690.1	-33.3	75	125				S

Sample ID	N048458-001E-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159395
Client ID:	ZZZZZZ	Batch ID:	90907	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2022	SeqNo:	4491446

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	696.781	5.0	10.00	690.1	66.9	75	125	686.8	1.45	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W_CRPGE_TPK

Sample ID	**N048458-001F-PS**	SampType: **PS**	TestCode: **6020_W_CRP**	Units: **µg/L**	Prep Date:	RunNo: **159309**
Client ID:	**ZZZZZZ**	Batch ID: **90908**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/1/2022**	SeqNo: **4488549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	635.250	5.0	10.00	630.6	46.9	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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	N048458-001E-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	159395
Client ID:	ZZZZZZ	Batch ID:	90907	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2022	SeqNo:	4491440

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	688.306	5.0	10.00	690.1	-17.9	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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	IRZ-23-143-122121
Lab Order:	N048464	**Collection Date:**	12/21/2021 10:30:00 AM
Project:	PG&E Topock- Rem Well Baseline, 30106892	**Matrix:**	GROUNDWATER
Lab ID:	N048464-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211223B**	QC Batch: **R159146**			PrepDate:			Analyst: **QBM**
Alkalinity, Bicarbonate (As CaCO3)	87	1.2	5.0		mg/L	1	12/23/2021
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	12/23/2021
Alkalinity, Total (As CaCO3)	87	1.2	5.0		mg/L	1	12/23/2021

Qualifiers:

B	Analyte detected in 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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R159146** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **159146**
Client ID: **LCSW** Batch ID: **R159146** TestNo: **SM 2320 B** Analysis Date: **12/23/2021** SeqNo: **4477670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	96.033	5.0	100.0	0	96.0	85	115				
Alkalinity, Total (As CaCO3)	100.209	5.0	100.0	0	100	85	115				

Sample ID **MB-R159146** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **159146**
Client ID: **PBW** Batch ID: **R159146** TestNo: **SM 2320 B** Analysis Date: **12/23/2021** SeqNo: **4477671**

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, Total (As CaCO3)	ND	5.0									

Sample ID **N048458-001GDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **159146**
Client ID: **ZZZZZZ** Batch ID: **R159146** TestNo: **SM 2320 B** Analysis Date: **12/23/2021** SeqNo: **4477674**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	37.578	5.0						37.58	0	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	37.578	5.0						37.58	0	30	

Sample ID **N048458-002GMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **159146**
Client ID: **ZZZZZZ** Batch ID: **R159146** TestNo: **SM 2320 B** Analysis Date: **12/23/2021** SeqNo: **4477676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	180.585	5.0	100.0	81.42	99.2	75	125				
Alkalinity, Total (As CaCO3)	180.585	5.0	100.0	81.42	99.2	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	N048458-002GMSD	SampType:	MSD	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	159146
Client ID:	ZZZZZZ	Batch ID:	R159146	TestNo:	SM 2320 B			Analysis Date:	12/23/2021	SeqNo:	4477677

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	179.541	5.0	100.0	81.42	98.1	75	125	180.6	0.580	20	
Alkalinity, Total (As CaCO3)	179.541	5.0	100.0	81.42	98.1	75	125	180.6	0.580	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892
Lab ID: N048464-001

Client Sample ID: IRZ-23-143-122121
Collection Date: 12/21/2021 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_211221A** QC Batch: **R159080**				PrepDate:			Analyst: **RAB**
Bromide	ND	0.23	5.0		mg/L	10	12/21/2021 03:41 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_211221A** QC Batch: **R159080**				PrepDate:			Analyst: **RAB**
Chloride	990	13	100		mg/L	200	12/22/2021 01:41 AM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_211221A** QC Batch: **R159080**				PrepDate:			Analyst: **RAB**
Fluoride	2.0	0.13	1.0		mg/L	10	12/21/2021 03:41 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_211221A** QC Batch: **R159080**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/21/2021 03:41 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_211221A** QC Batch: **R159080**				PrepDate:			Analyst: **RAB**
Orthophosphate, Dissolved (as P)	ND	0.93	1.0		mg/L	10	12/21/2021 03:41 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_211221A** QC Batch: **R159080**				PrepDate:			Analyst: **RAB**
Sulfate	220	1.2	10		mg/L	20	12/21/2021 10:31 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_211221A** QC Batch: **R159080**				PrepDate:			Analyst: **RAB**
Nitrate as N	5.5	0.095	0.50		mg/L	10	12/21/2021 03:41 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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R159080_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	PBW	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474630

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

Sample ID	LCS-R159080_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	LCSW	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474631

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.305	0.50	1.250	0	104	90	110				

Sample ID	N048458-007CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474650

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	14.820	5.0	12.50	0	119	80	120				

Sample ID	N048458-007CMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474651

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	13.983	5.0	12.50	0	112	80	120	14.82	5.81	20	

Sample ID	N048458-010CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474654

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	14.640	5.0	12.50	0	117	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N048458-002CDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474655

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	5.0						0	0	20	

Sample ID	N048464-001EDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474657

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	5.0						0	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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R159080_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	PBW	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474537

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.138	0.50									

Sample ID	LCS-R159080_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	LCSW	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474538

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.987	0.50	2.000	0	99.3	90	110				

Sample ID	N048458-011CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474548

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	673.610	50	200.0	467.8	103	80	120				

Sample ID	N048458-011CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474549

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	674.860	50	200.0	467.8	104	80	120	673.6	0.185	20	

Sample ID	N048458-013CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/22/2021	SeqNo:	4474553

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	489.190	50						489.7	0.112	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N048458-013CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/22/2021	SeqNo:	4474554

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	700.210	50	200.0	489.7	105	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R159080_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	159080		
Client ID:	PBW	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474495		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Fluoride		ND	0.10										

Sample ID	LCS-R159080_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	159080		
Client ID:	LCSW	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474496		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Fluoride		1.270	0.10	1.250	0	102	90	110					

Sample ID	N048458-007CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	159080		
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474515		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Fluoride		16.038	1.0	12.50	3.050	104	80	120					

Sample ID	N048458-007CMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	159080		
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474516		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Fluoride		16.039	1.0	12.50	3.050	104	80	120	16.04	0.00623	20		

Sample ID	N048458-010CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	159080		
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474519		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Fluoride		14.899	1.0	12.50	2.192	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	N048458-002CDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474520

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.740	1.0						2.800	2.17	20	

Sample ID	N048464-001EDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474522

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.859	1.0						1.984	6.51	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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_NO2PGE

Sample ID	MB-R159080_NO2	SampType:	MBLK	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	PBW	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474578

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

Sample ID	LCS-R159080_NO2	SampType:	LCS	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	LCSW	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474579

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	1.282	0.50	1.250	0	103	90	110				

Sample ID	N048458-007CMS	SampType:	MS	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474598

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	17.542	5.0	12.50	0	140	80	120				S

Sample ID	N048458-007CMSD	SampType:	MSD	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474599

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	17.422	5.0	12.50	0	139	80	120	17.54	0.686	20	S

Sample ID	N048458-010CMS	SampType:	MS	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474602

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	16.679	5.0	12.50	0	133	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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_NO2PGE

Sample ID	N048458-002CDUP	SampType:	DUP	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474603

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	ND	5.0						0	0	20	

Sample ID	N048464-001EDUP	SampType:	DUP	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474605

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	ND	5.0						0	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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_PO4PGE

Sample ID	MB-R159080_PO4	SampType:	MBLK	TestCode:	300_W_PO4P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	PBW	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474714

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Orthophosphate, Dissolved (as P)	ND	0.10									

Sample ID	LCS-R159080_PO4	SampType:	LCS	TestCode:	300_W_PO4P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	LCSW	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474715

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Orthophosphate, Dissolved (as P)	1.159	0.10	1.250	0	92.8	90	110				

Sample ID	N048464-001EMS	SampType:	MS	TestCode:	300_W_PO4P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474721

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Orthophosphate, Dissolved (as P)	12.274	1.0	12.50	0	98.2	80	120				

Sample ID	N048464-001EMSD	SampType:	MSD	TestCode:	300_W_PO4P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474722

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Orthophosphate, Dissolved (as P)	12.772	1.0	12.50	0	102	80	120	12.27	3.98	20	

Sample ID	N048464-001EDUP	SampType:	DUP	TestCode:	300_W_PO4P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474723

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Orthophosphate, Dissolved (as P)	ND	1.0						0	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R159080_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	PBW	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474738

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

Sample ID	LCS-R159080_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	LCSW	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474739

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.032	0.50	4.000	0	101	90	110				

Sample ID	N048458-001CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474745

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1369.250	50	400.0	922.8	112	80	120				

Sample ID	N048458-001CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474746

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1358.470	50	400.0	922.8	109	80	120	1369	0.790	20	

Sample ID	N048458-012CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474750

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1241.650	50	400.0	842.6	99.8	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N048458-008CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474752

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	837.980	50						832.0	0.715	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 300WLLNO3PGE

Sample ID	MB-R159080_NO3	SampType:	MBLK	TestCode:	300WLLNO3	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	PBW	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474672

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

Sample ID	LCS-R159080_NO3	SampType:	LCS	TestCode:	300WLLNO3	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	LCSW	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474673

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	1.313	0.050	1.250	0	105	90	110				

Sample ID	N048458-007CMS	SampType:	MS	TestCode:	300WLLNO3	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474692

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	16.625	0.50	12.50	3.897	102	80	120				

Sample ID	N048458-007CMSD	SampType:	MSD	TestCode:	300WLLNO3	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474693

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	16.630	0.50	12.50	3.897	102	80	120	16.62	0.0301	20	

Sample ID	N048458-010CMS	SampType:	MS	TestCode:	300WLLNO3	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474696

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	17.242	0.50	12.50	4.202	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 300WLLNO3PGE

Sample ID	N048458-002CDUP	SampType:	DUP	TestCode:	300WLLNO3	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474697

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	2.315	0.50						2.338	0.989	20	

Sample ID	N048464-001EDUP	SampType:	DUP	TestCode:	300WLLNO3	Units:	mg/L	Prep Date:		RunNo:	159080
Client ID:	ZZZZZZ	Batch ID:	R159080	TestNo:	EPA 300.0			Analysis Date:	12/21/2021	SeqNo:	4474699

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	5.623	0.50						5.533	1.61	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:**	IRZ-23-143-122121
Lab Order:	N048464	**Collection Date:**	12/21/2021 10:30:00 AM
Project:	PG&E Topock- Rem Well Baseline, 30106892	**Matrix:**	GROUNDWATER
Lab ID:	N048464-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL PHOSPHORUS							
			EPA 365.3				
RunID: **NV00922-WC_211230B**	QC Batch: **90881**			PrepDate:	**12/28/2021**		Analyst: **CEI**
Phosphorus, Total (As P)	ND	0.0062	0.020		mg/L	1	12/30/2021

Qualifiers:

B	Analyte detected in 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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 365.3_W_T

Sample ID **LCS-90881**	SampType: **LCS**	TestCode: **365.3_W_T**	Units: **mg/L**	Prep Date: **12/28/2021**	RunNo: **159260**
Client ID: **LCSW**	Batch ID: **90881**	TestNo: **EPA 365.3**		Analysis Date: **12/30/2021**	SeqNo: **4485590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.389	0.020	0.4000	0	97.2	80	120				

Sample ID **MB-90881**	SampType: **MBLK**	TestCode: **365.3_W_T**	Units: **mg/L**	Prep Date: **12/28/2021**	RunNo: **159260**
Client ID: **PBW**	Batch ID: **90881**	TestNo: **EPA 365.3**		Analysis Date: **12/30/2021**	SeqNo: **4485592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.020									

Sample ID **N048464-001K-MS**	SampType: **MS**	TestCode: **365.3_W_T**	Units: **mg/L**	Prep Date: **12/28/2021**	RunNo: **159260**
Client ID: **ZZZZZZ**	Batch ID: **90881**	TestNo: **EPA 365.3**		Analysis Date: **12/30/2021**	SeqNo: **4485595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.406	0.020	0.4000	0	102	80	120				

Sample ID **N048464-001K-MSD**	SampType: **MSD**	TestCode: **365.3_W_T**	Units: **mg/L**	Prep Date: **12/28/2021**	RunNo: **159260**
Client ID: **ZZZZZZ**	Batch ID: **90881**	TestNo: **EPA 365.3**		Analysis Date: **12/30/2021**	SeqNo: **4485596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.405	0.020	0.4000	0	101	80	120	0.4060	0.247	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:**	IRZ-23-143-122121
Lab Order:	N048464	**Collection Date:**	12/21/2021 10:30:00 AM
Project:	PG&E Topock- Rem Well Baseline, 30106892	**Matrix:**	GROUNDWATER
Lab ID:	N048464-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211230A**	QC Batch: **R159291**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.84	10		mg/L	10	12/30/2021 01:55 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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID **MB-R159291**	SampType: **MBLK**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159291**
Client ID: **PBW**	Batch ID: **R159291**	TestNo: **SM 5310C**		Analysis Date: **12/30/2021**	SeqNo: **4486917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID **LCS-R159291**	SampType: **LCS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159291**
Client ID: **LCSW**	Batch ID: **R159291**	TestNo: **SM 5310C**		Analysis Date: **12/30/2021**	SeqNo: **4486918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.826	1.0	5.000	0	96.5	85	115				

Sample ID **N048464-001H-MS**	SampType: **MS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159291**
Client ID: **ZZZZZZ**	Batch ID: **R159291**	TestNo: **SM 5310C**		Analysis Date: **12/30/2021**	SeqNo: **4486925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	45.643	10	50.00	0	91.3	75	125				

Sample ID **N048464-001H-MSD**	SampType: **MSD**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159291**
Client ID: **ZZZZZZ**	Batch ID: **R159291**	TestNo: **SM 5310C**		Analysis Date: **12/30/2021**	SeqNo: **4486926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	46.120	10	50.00	0	92.2	75	125	44.56	3.43	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
Lab Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892
Lab ID: N048464-001

Client Sample ID: IRZ-23-143-122121
Collection Date: 12/21/2021 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HARDNESS BY CALCULATION							
	EPA 3010A			**SM 2340 B**			
RunID: **NV00922-ICP2_220106D**	QC Batch: **90954**			PrepDate:		**1/6/2022**	Analyst: **DJ**
Hardness, Calcium (As CaCO3)	430	0.50	0.50		mg/L	1	1/6/2022
Hardness, Magnesium (As CaCO3)	110	0.50	0.50		mg/L	1	1/6/2022
Total Hardness (As CaCO3)	540	1.0	1.0		mg/L	1	1/6/2022
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_220106D**	QC Batch: **90954**			PrepDate:		**1/6/2022**	Analyst: **DJ**
Silica (SiO2)	21	0.081	0.50		mg/L	5	1/6/2022 05:14 PM
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_220123A**	QC Batch: **90954**			PrepDate:		**1/6/2022**	Analyst: **DJ**
Aluminum	ND	20	50		µg/L	1	1/23/2022 02:58 PM
Iron	91	13	20		µg/L	1	1/6/2022 03:53 PM
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_220106D**	QC Batch: **90954**			PrepDate:		**1/6/2022**	Analyst: **DJ**
Boron	0.63	0.035	0.10		mg/L	1	1/6/2022 03:53 PM
Calcium	170	0.18	0.50		mg/L	1	1/6/2022 03:53 PM
Magnesium	26	0.017	0.10		mg/L	1	1/6/2022 03:53 PM
Potassium	9.9	0.69	2.5		mg/L	5	1/7/2022 09:21 AM
Sodium	580	17	25		mg/L	50	1/7/2022 11:57 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_220106E**	QC Batch: **90955**			PrepDate:		**1/6/2022**	Analyst: **DJ**
Aluminum	ND	20	50		µg/L	1	1/6/2022 06:33 PM
Boron	620	35	100		µg/L	1	1/6/2022 06:33 PM
Calcium	170000	180	500		µg/L	1	1/6/2022 06:33 PM
Iron	690	13	20		µg/L	1	1/6/2022 06:33 PM
Magnesium	25000	17	100		µg/L	1	1/6/2022 06:33 PM
Potassium	10000	690	2500		µg/L	5	1/7/2022 10:34 AM
Sodium	610000	34000	50000		µg/L	100	1/7/2022 12:44 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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WD_SiO2

Sample ID: **MB-90954**	SampType: **MBLK**	TestCode: **6010_WD_Si**	Units: **mg/L**	Prep Date: **1/6/2022**	RunNo: **159399**
Client ID: **PBW**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/6/2022**	SeqNo: **4493136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silica (SiO2)	ND	0.10									

Sample ID: **LCS1-90954**	SampType: **LCS**	TestCode: **6010_WD_Si**	Units: **mg/L**	Prep Date: **1/6/2022**	RunNo: **159399**
Client ID: **LCSW**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/6/2022**	SeqNo: **4493137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silica (SiO2)	9.416	0.10	10.70	0	88.0	85	115				

Sample ID: **N048464-001I-MS1**	SampType: **MS**	TestCode: **6010_WD_Si**	Units: **mg/L**	Prep Date: **1/6/2022**	RunNo: **159399**
Client ID: **ZZZZZZ**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/6/2022**	SeqNo: **4493195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silica (SiO2)	20.072	0.50	10.70	20.83	-7.07	75	125				S

Sample ID: **N048464-001I-MSD1**	SampType: **MSD**	TestCode: **6010_WD_Si**	Units: **mg/L**	Prep Date: **1/6/2022**	RunNo: **159399**
Client ID: **ZZZZZZ**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/6/2022**	SeqNo: **4493196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silica (SiO2)	19.835	0.50	10.70	20.83	-9.28	75	125	20.07	1.19	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N048464-001I-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **1/6/2022**	RunNo: **159399**
Client ID: **ZZZZZZ**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/6/2022**	SeqNo: **4493047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	167.757	20	100.0	90.69	77.1	75	125				

Sample ID: **N048464-001I-MSD1**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **1/6/2022**	RunNo: **159399**
Client ID: **ZZZZZZ**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/6/2022**	SeqNo: **4493048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	45.988	20	100.0	90.69	-44.7	75	125	167.8	114	20	SR

Sample ID: **MB-90954**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **1/6/2022**	RunNo: **159399**
Client ID: **PBW**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/6/2022**	SeqNo: **4493092**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	50									
Iron	ND	20									

Sample ID: **LCS1-90954**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **1/6/2022**	RunNo: **159399**
Client ID: **LCSW**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/6/2022**	SeqNo: **4493093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9921.549	50	10000	0	99.2	85	115				
Iron	87.798	20	100.0	0	87.8	85	115				

Sample ID: **N048464-001I-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **1/6/2022**	RunNo: **159399**
Client ID: **ZZZZZZ**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/6/2022**	SeqNo: **4511811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9210.860	50	10000	0	92.1	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N048464-001I-MSD1** SampType: **MSD** TestCode: **6010_WDPG** Units: **µg/L** Prep Date: **1/6/2022** RunNo: **159399**
Client ID: **ZZZZZZ** Batch ID: **90954** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/6/2022** SeqNo: **4511845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.050	50	10000	0	0.401	75	125	9211	0	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID: **N048464-001I-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **1/6/2022** RunNo: **159399**
Client ID: **ZZZZZZ** Batch ID: **90954** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/6/2022** SeqNo: **4491764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5.165	0.10	5.000	0.6292	90.7	75	125				
Calcium	174.425	0.50	10.00	171.0	34.7	75	125				S
Magnesium	34.149	0.10	10.00	25.83	83.1	75	125				

Sample ID: **N048464-001I-MSD1** SampType: **MSD** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **1/6/2022** RunNo: **159399**
Client ID: **ZZZZZZ** Batch ID: **90954** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/6/2022** SeqNo: **4491765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.621	0.10	5.000	0.6292	-0.163	75	125	5.165	157	20	SR
Calcium	168.889	0.50	10.00	171.0	-20.7	75	125	174.4	3.22	20	S
Magnesium	25.163	0.10	10.00	25.83	-6.71	75	125	34.15	30.3	20	SR

Sample ID: **MB-90954** SampType: **MBLK** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **1/6/2022** RunNo: **159399**
Client ID: **PBW** Batch ID: **90954** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/6/2022** SeqNo: **4492989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.10									
Calcium	ND	0.50									
Magnesium	ND	0.10									

Sample ID: **LCS1-90954** SampType: **LCS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **1/6/2022** RunNo: **159399**
Client ID: **LCSW** Batch ID: **90954** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/6/2022** SeqNo: **4492990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4.786	0.10	5.000	0	95.7	85	115				
Calcium	9.641	0.50	10.00	0	96.4	85	115				
Magnesium	9.439	0.10	10.00	0	94.4	85	115				

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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID: **MB-90954**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date: **1/6/2022**	RunNo: **159434**
Client ID: **PBW**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/7/2022**	SeqNo: **4494660**

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

Sample ID: **LCS2-90954**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date: **1/6/2022**	RunNo: **159434**
Client ID: **LCSW**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/7/2022**	SeqNo: **4494661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19.640	0.50	20.00	0	98.2	85	115				
Sodium	19.938	0.50	20.00	0	99.7	85	115				

Sample ID: **N048464-001I-MS2**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date: **1/6/2022**	RunNo: **159434**
Client ID: **ZZZZZZ**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/7/2022**	SeqNo: **4494665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	31.166	2.5	20.00	9.904	106	75	125				

Sample ID: **N048464-001I-MSD2**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date: **1/6/2022**	RunNo: **159434**
Client ID: **ZZZZZZ**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/7/2022**	SeqNo: **4494666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10.497	2.5	20.00	9.904	2.96	75	125	31.17	99.2	20	SR

Sample ID: **N048464-001I-MS2**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date: **1/6/2022**	RunNo: **159434**
Client ID: **ZZZZZZ**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/7/2022**	SeqNo: **4494703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	582.979	25	20.00	580.9	10.6	75	125				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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID: **N048464-001I-MSD2**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date: **1/6/2022**	RunNo: **159434**
Client ID: **ZZZZZZ**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/7/2022**	SeqNo: **4494704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	584.925	25	20.00	580.9	20.3	75	125	583.0	0.333	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID: **LCS1-90955** SampType: **LCS** TestCode: **6010_WPGE** Units: **µg/L** Prep Date: **1/6/2022** RunNo: **159402**
Client ID: **LCSW** Batch ID: **90955** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/6/2022** SeqNo: **4491971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9398.785	50	10000	0	94.0	85	115				
Boron	4558.757	100	5000	0	91.2	85	115				
Calcium	9034.530	500	10000	0	90.3	85	115				
Iron	95.115	20	100.0	0	95.1	85	115				
Magnesium	9236.864	100	10000	0	92.4	85	115				

Sample ID: **N048464-001J-MS1** SampType: **MS** TestCode: **6010_WPGE** Units: **µg/L** Prep Date: **1/6/2022** RunNo: **159402**
Client ID: **ZZZZZZ** Batch ID: **90955** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/6/2022** SeqNo: **4491975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9539.197	50	10000	0	95.4	75	125				
Boron	5509.821	100	5000	620.5	97.8	75	125				
Calcium	184947.462	500	10000	172200	127	75	125				S
Iron	804.284	20	100.0	689.8	114	75	125				
Magnesium	35245.510	100	10000	25210	100	75	125				

Sample ID: **N048464-001J-MSD1** SampType: **MSD** TestCode: **6010_WPGE** Units: **µg/L** Prep Date: **1/6/2022** RunNo: **159402**
Client ID: **ZZZZZZ** Batch ID: **90955** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/6/2022** SeqNo: **4491976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9521.261	50	10000	0	95.2	75	125	9539	0.188	20	
Boron	5510.156	100	5000	620.5	97.8	75	125	5510	0.00608	20	
Calcium	181733.590	500	10000	172200	95.4	75	125	184900	1.75	20	
Iron	1315.138	20	100.0	689.8	625	75	125	804.3	48.2	20	SR
Magnesium	34868.530	100	10000	25210	96.6	75	125	35250	1.08	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID: **MB-90955**	SampType: **MBLK**	TestCode: **6010_WPGE**	Units: **µg/L**	Prep Date: **1/6/2022**	RunNo: **159402**
Client ID: **PBW**	Batch ID: **90955**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/6/2022**	SeqNo: **4492896**

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: **MB-90955**	SampType: **MBLK**	TestCode: **6010_WPGE**	Units: **µg/L**	Prep Date: **1/6/2022**	RunNo: **159434**
Client ID: **PBW**	Batch ID: **90955**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/7/2022**	SeqNo: **4494934**

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: **LCS2-90955**	SampType: **LCS**	TestCode: **6010_WPGE**	Units: **µg/L**	Prep Date: **1/6/2022**	RunNo: **159434**
Client ID: **LCSW**	Batch ID: **90955**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/7/2022**	SeqNo: **4494935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19665.110	500	20000	0	98.3	85	115				
Sodium	20306.719	500	20000	0	102	85	115				

Sample ID: **N048464-001J-MS2**	SampType: **MS**	TestCode: **6010_WPGE**	Units: **µg/L**	Prep Date: **1/6/2022**	RunNo: **159434**
Client ID: **ZZZZZZ**	Batch ID: **90955**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/7/2022**	SeqNo: **4494941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	32667.626	2500	20000	10330	112	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID: **N048464-001J-MSD2**	SampType: **MSD**	TestCode: **6010_WPGE**	Units: **µg/L**	Prep Date: **1/6/2022**	RunNo: **159434**
Client ID: **ZZZZZZ**	Batch ID: **90955**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/7/2022**	SeqNo: **4494942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	32555.232	2500	20000	10330	111	75	125	32670	0.345	20	

Sample ID: **N048464-001J-MS2**	SampType: **MS**	TestCode: **6010_WPGE**	Units: **µg/L**	Prep Date: **1/6/2022**	RunNo: **159434**
Client ID: **ZZZZZZ**	Batch ID: **90955**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/7/2022**	SeqNo: **4494975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	634245.307	50000	20000	610000	121	75	125				

Sample ID: **N048464-001J-MSD2**	SampType: **MSD**	TestCode: **6010_WPGE**	Units: **µg/L**	Prep Date: **1/6/2022**	RunNo: **159434**
Client ID: **ZZZZZZ**	Batch ID: **90955**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/7/2022**	SeqNo: **4494978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	636026.752	50000	20000	610000	130	75	125	634200	0.280	20	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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WD_SiO2

Sample ID: **N048464-001I-PS** SampType: **PS** TestCode: **6010_WD_Si** Units: **mg/L** Prep Date: RunNo: **159399**
Client ID: **ZZZZZZ** Batch ID: **90954** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/6/2022** SeqNo: **4493194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silica (SiO2)	22.543	0.50	10.70	20.83	16.0	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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N048464-001I-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **159399**
Client ID: **ZZZZZZ**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/6/2022**	SeqNo: **4493046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	86.086	20	100.0	90.69	-4.60	80	120				S

Sample ID: **N048464-001I-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **159399**
Client ID: **ZZZZZZ**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/6/2022**	SeqNo: **4511810**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4590.390	50	10000	0	45.9	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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID: **N048464-001I-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date:	RunNo: **159399**
Client ID: **ZZZZZZ**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/6/2022**	SeqNo: **4491763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.982	0.10	5.000	0.6292	47.1	80	120				S
Calcium	169.894	0.50	10.00	171.0	-10.6	80	120				S
Magnesium	29.920	0.10	10.00	25.83	40.9	80	120				S

Sample ID: **N048464-001I-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date:	RunNo: **159434**
Client ID: **ZZZZZZ**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/7/2022**	SeqNo: **4494664**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	120.544	2.5	100.0	9.904	111	80	120				

Sample ID: **N048464-001I-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date:	RunNo: **159434**
Client ID: **ZZZZZZ**	Batch ID: **90954**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/7/2022**	SeqNo: **4494702**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1655.258	25	1000	580.9	107	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID: **N048464-001J-PS** SampType: **PS** TestCode: **6010_WPGE** Units: **µg/L** Prep Date: RunNo: **159402**
Client ID: **ZZZZZZ** Batch ID: **90955** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/6/2022** SeqNo: **4491974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9526.831	50	10000	0	95.3	80	120				
Boron	5506.993	100	5000	620.5	97.7	80	120				
Calcium	182948.870	500	10000	172200	108	80	120				
Iron	1141.977	20	100.0	689.8	452	80	120				S
Magnesium	35089.725	100	10000	25210	98.8	80	120				

Sample ID: **N048464-001J-PS** SampType: **PS** TestCode: **6010_WPGE** Units: **µg/L** Prep Date: RunNo: **159434**
Client ID: **ZZZZZZ** Batch ID: **90955** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/7/2022** SeqNo: **4494940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	123670.338	2500	100000	10330	113	80	120				

Sample ID: **N048646-001J-PS** SampType: **PS** TestCode: **6010_WPGE** Units: **µg/L** Prep Date: RunNo: **159434**
Client ID: **ZZZZZZ** Batch ID: **90955** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **1/7/2022** SeqNo: **4494974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2847397.710	50000	20000	610000	11200	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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Jan-22*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892
Lab ID: N048464-001

Client Sample ID: IRZ-23-143-122121
Collection Date: 12/21/2021 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211231B**	QC Batch: **90907**			PrepDate:	**12/30/2021**		Analyst: **CEI**
Antimony	ND	0.22	0.50		µg/L	1	12/31/2021 11:50 PM
Arsenic	0.92	0.050	0.10		µg/L	1	1/4/2022 01:56 AM
Barium	51	0.083	1.0		µg/L	1	12/31/2021 11:50 PM
Beryllium	ND	0.030	0.50		µg/L	1	12/31/2021 11:50 PM
Cadmium	ND	0.045	0.50		µg/L	1	12/31/2021 11:50 PM
Cobalt	ND	0.017	0.50		µg/L	1	12/31/2021 11:50 PM
Copper	ND	0.046	1.0		µg/L	1	12/31/2021 11:50 PM
Lead	ND	0.018	1.0		µg/L	1	12/31/2021 11:50 PM
Manganese	ND	0.026	0.50		µg/L	1	12/31/2021 11:50 PM
Molybdenum	6.7	0.12	0.50		µg/L	1	12/31/2021 11:50 PM
Nickel	9.0	0.034	1.0		µg/L	1	1/6/2022 08:05 AM
Selenium	4.1	0.044	0.50		µg/L	1	12/31/2021 11:50 PM
Silver	ND	0.028	0.50		µg/L	1	12/31/2021 11:50 PM
Thallium	ND	0.12	0.50		µg/L	1	12/31/2021 11:50 PM
Vanadium	9.6	0.067	1.0		µg/L	1	12/31/2021 11:50 PM
Zinc	ND	0.26	10		µg/L	1	12/31/2021 11:50 PM
TOTAL METALS BY ICPMS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211231A**	QC Batch: **90908**			PrepDate:	**12/30/2021**		Analyst: **CEI**
Antimony	ND	0.22	0.50		µg/L	1	1/1/2022 05:34 AM
Arsenic	2.7	0.050	0.10		µg/L	1	1/4/2022 07:57 AM
Barium	55	0.083	1.0		µg/L	1	1/1/2022 05:34 AM
Beryllium	ND	0.030	0.50		µg/L	1	1/4/2022 07:57 AM
Cadmium	ND	0.045	0.50		µg/L	1	1/1/2022 05:34 AM
Cobalt	4.6	0.017	0.50		µg/L	1	1/1/2022 05:34 AM
Copper	3.4	0.046	1.0		µg/L	1	1/1/2022 05:34 AM
Lead	ND	0.018	1.0		µg/L	1	1/1/2022 05:34 AM
Manganese	29	0.026	0.50		µg/L	1	1/1/2022 05:34 AM
Molybdenum	11	0.12	0.50		µg/L	1	1/1/2022 05:34 AM
Nickel	16	0.034	1.0		µg/L	1	1/6/2022 11:39 AM
Selenium	4.7	0.044	0.50		µg/L	1	1/1/2022 05:34 AM
Silver	ND	0.028	0.50		µg/L	1	1/1/2022 05:34 AM
Thallium	ND	0.12	0.50		µg/L	1	1/1/2022 05:34 AM
Vanadium	17	0.067	1.0		µg/L	1	1/1/2022 05:34 AM
Zinc	ND	0.26	10		µg/L	1	1/1/2022 05:34 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
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90907**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/30/2021**	RunNo: **159308**
Client ID: **PBW**	Batch ID: **90907**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/31/2021**	SeqNo: **4488290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									
Silver	ND	0.50									
Thallium	ND	0.50									
Vanadium	0.115	1.0									
Zinc	ND	10									

Sample ID **LCS-90907**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/30/2021**	RunNo: **159308**
Client ID: **LCSW**	Batch ID: **90907**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/31/2021**	SeqNo: **4488291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.349	0.50	10.00	0	103	85	115				
Arsenic	10.040	0.10	10.00	0	100	85	115				
Barium	10.294	1.0	10.00	0	103	85	115				
Beryllium	11.228	0.50	10.00	0	112	85	115				
Cadmium	10.501	0.50	10.00	0	105	85	115				
Cobalt	10.306	0.50	10.00	0	103	85	115				
Copper	9.795	1.0	10.00	0	97.9	85	115				
Lead	10.133	1.0	10.00	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	LCS-90907	SampType:	LCS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159308
Client ID:	LCSW	Batch ID:	90907	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/31/2021	SeqNo:	4488291

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	99.477	0.50	100.0	0	99.5	85	115				
Molybdenum	9.910	0.50	10.00	0	99.1	85	115				
Selenium	9.858	0.50	10.00	0	98.6	85	115				
Silver	10.429	0.50	10.00	0	104	85	115				
Thallium	10.150	0.50	10.00	0	102	85	115				
Vanadium	10.845	1.0	10.00	0	108	85	115				
Zinc	97.787	10	100.0	0	97.8	85	115				

Sample ID	N048458-001E-MS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159308
Client ID:	ZZZZZZ	Batch ID:	90907	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/31/2021	SeqNo:	4488297

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.672	0.50	10.00	0	107	75	125				
Barium	57.779	1.0	10.00	44.60	132	75	125				S
Beryllium	5.671	0.50	10.00	0	56.7	75	125				S
Cadmium	10.112	0.50	10.00	0	101	75	125				
Cobalt	8.308	0.50	10.00	0.1447	81.6	75	125				
Copper	9.740	1.0	10.00	1.710	80.3	75	125				
Lead	10.165	1.0	10.00	0.03971	101	75	125				
Manganese	100.059	0.50	100.0	13.80	86.3	75	125				
Molybdenum	56.788	0.50	10.00	45.08	117	75	125				
Selenium	11.805	0.50	10.00	1.463	103	75	125				
Silver	9.422	0.50	10.00	0	94.2	75	125				
Thallium	10.403	0.50	10.00	0	104	75	125				
Vanadium	13.357	1.0	10.00	3.696	96.6	75	125				
Zinc	86.046	10	100.0	2.747	83.3	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048458-001E-MSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159308
Client ID:	ZZZZZZ	Batch ID:	90907	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/31/2021	SeqNo:	4488299

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.446	0.50	10.00	0	104	75	125	10.67	2.14	20	
Barium	57.017	1.0	10.00	44.60	124	75	125	57.78	1.33	20	
Beryllium	5.464	0.50	10.00	0	54.6	75	125	5.671	3.73	20	S
Cadmium	9.943	0.50	10.00	0	99.4	75	125	10.11	1.68	20	
Cobalt	8.351	0.50	10.00	0.1447	82.1	75	125	8.308	0.514	20	
Copper	10.937	1.0	10.00	1.710	92.3	75	125	9.740	11.6	20	
Lead	10.261	1.0	10.00	0.03971	102	75	125	10.16	0.946	20	
Manganese	101.345	0.50	100.0	13.80	87.5	75	125	100.1	1.28	20	
Molybdenum	57.274	0.50	10.00	45.08	122	75	125	56.79	0.853	20	
Selenium	11.341	0.50	10.00	1.463	98.8	75	125	11.81	4.01	20	
Silver	9.457	0.50	10.00	0	94.6	75	125	9.422	0.364	20	
Thallium	10.304	0.50	10.00	0	103	75	125	10.40	0.953	20	
Vanadium	13.208	1.0	10.00	3.696	95.1	75	125	13.36	1.12	20	
Zinc	86.534	10	100.0	2.747	83.8	75	125	86.05	0.565	20	

Sample ID	N048458-001E-MS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159395
Client ID:	ZZZZZZ	Batch ID:	90907	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2022	SeqNo:	4491613

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	6.226	0.10	10.00	0	62.3	75	125				S

Sample ID	N048458-001E-MSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159395
Client ID:	ZZZZZZ	Batch ID:	90907	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2022	SeqNo:	4491615

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	6.274	0.10	10.00	0	62.7	75	125	6.226	0.769	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	MB-90929	SampType:	MBLK	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	1/3/2022	RunNo:	159412
Client ID:	PBW	Batch ID:	90929	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2022	SeqNo:	4493405

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

Sample ID	LCS-90929	SampType:	LCS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	1/3/2022	RunNo:	159412
Client ID:	LCSW	Batch ID:	90929	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2022	SeqNo:	4493406

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	10.082	1.0	10.00	0	101	85	115				

Sample ID	N048458-001E-MS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	1/3/2022	RunNo:	159412
Client ID:	ZZZZZZ	Batch ID:	90929	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2022	SeqNo:	4493486

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	148.246	25	250.0	0	59.3	75	125				S

Sample ID	N048458-001E-MSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	1/3/2022	RunNo:	159412
Client ID:	ZZZZZZ	Batch ID:	90929	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2022	SeqNo:	4493487

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	143.956	25	250.0	0	57.6	75	125	148.2	2.94	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W_TPK

Sample ID **MB-90908**	SampType: **MBLK**	TestCode: **6020_W_TPK**	Units: **µg/L**	Prep Date: **12/30/2021**	RunNo: **159309**
Client ID: **PBW**	Batch ID: **90908**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/1/2022**	SeqNo: **4488744**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.064	0.50									
Silver	ND	0.50									
Thallium	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **LCS-90908**	SampType: **LCS**	TestCode: **6020_W_TPK**	Units: **µg/L**	Prep Date: **12/30/2021**	RunNo: **159309**
Client ID: **LCSW**	Batch ID: **90908**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/1/2022**	SeqNo: **4488745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.388	0.50	10.00	0	104	85	115				
Arsenic	9.862	0.10	10.00	0	98.6	85	115				
Barium	10.336	1.0	10.00	0	103	85	115				
Cadmium	10.826	0.50	10.00	0	108	85	115				
Cobalt	10.256	0.50	10.00	0	103	85	115				
Copper	9.656	1.0	10.00	0	96.6	85	115				
Lead	10.127	1.0	10.00	0	101	85	115				
Manganese	99.409	0.50	100.0	0	99.4	85	115				
Molybdenum	9.713	0.50	10.00	0	97.1	85	115				
Selenium	10.672	0.50	10.00	0	107	85	115				
Silver	10.291	0.50	10.00	0	103	85	115				

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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W_TPK

Sample ID	LCS-90908	SampType:	LCS	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159309
Client ID:	LCSW	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/1/2022	SeqNo:	4488745

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.078	0.50	10.00	0	101	85	115				
Vanadium	11.044	1.0	10.00	0	110	85	115				
Zinc	95.530	10	100.0	0	95.5	85	115				

Sample ID	N048458-001F-MS	SampType:	MS	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159309
Client ID:	ZZZZZZ	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/1/2022	SeqNo:	4488751

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.679	0.50	10.00	0	107	75	125				
Arsenic	14.892	0.10	10.00	0	149	75	125				S
Cadmium	10.262	0.50	10.00	0	103	75	125				
Cobalt	8.281	0.50	10.00	0.2062	80.7	75	125				
Copper	10.123	1.0	10.00	2.940	71.8	75	125				S
Lead	10.168	1.0	10.00	0.08958	101	75	125				
Manganese	113.670	0.50	100.0	26.39	87.3	75	125				
Molybdenum	70.008	0.50	10.00	58.06	120	75	125				
Selenium	12.296	0.50	10.00	1.348	109	75	125				
Silver	9.482	0.50	10.00	0	94.8	75	125				
Thallium	10.235	0.50	10.00	0	102	75	125				
Vanadium	13.806	1.0	10.00	4.345	94.6	75	125				
Zinc	89.191	10	100.0	0	89.2	75	125				

Sample ID	N048458-001F-MSD	SampType:	MSD	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159309
Client ID:	ZZZZZZ	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/1/2022	SeqNo:	4488753

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.579	0.50	10.00	0	106	75	125	10.68	0.947	20	
Arsenic	5.971	0.10	10.00	0	59.7	75	125	14.89	85.5	20	SR
Cadmium	10.375	0.50	10.00	0	104	75	125	10.26	1.10	20	
Cobalt	8.426	0.50	10.00	0.2062	82.2	75	125	8.281	1.74	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W_TPK

Sample ID	N048458-001F-MSD	SampType:	MSD	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159309
Client ID:	ZZZZZZ	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/1/2022	SeqNo:	4488753

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	10.362	1.0	10.00	2.940	74.2	75	125	10.12	2.34	20	S
Lead	10.246	1.0	10.00	0.08958	102	75	125	10.17	0.768	20	
Manganese	112.847	0.50	100.0	26.39	86.5	75	125	113.7	0.726	20	
Molybdenum	70.048	0.50	10.00	58.06	120	75	125	70.01	0.0568	20	
Selenium	11.426	0.50	10.00	1.348	101	75	125	12.30	7.34	20	
Silver	9.363	0.50	10.00	0	93.6	75	125	9.482	1.26	20	
Thallium	10.179	0.50	10.00	0	102	75	125	10.24	0.553	20	
Vanadium	13.787	1.0	10.00	4.345	94.4	75	125	13.81	0.136	20	
Zinc	59.422	10	100.0	0	59.4	75	125	89.19	40.1	20	SR

Sample ID	MB-90908	SampType:	MBLK	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159404
Client ID:	PBW	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2022	SeqNo:	4492625

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

Sample ID	LCS-90908	SampType:	LCS	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159404
Client ID:	LCSW	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2022	SeqNo:	4492626

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	9.604	0.50	10.00	0	96.0	85	115				

Sample ID	N048458-001F-MS	SampType:	MS	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159404
Client ID:	ZZZZZZ	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2022	SeqNo:	4492633

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	7.882	2.5	10.00	0	78.8	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W_TPK

Sample ID	N048458-001F-MSD	SampType:	MSD	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159404
Client ID:	ZZZZZZ	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2022	SeqNo:	4492637

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	7.754	2.5	10.00	0	77.5	75	125	7.882	1.65	20	

Sample ID	N048458-001F-MS	SampType:	MS	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159309
Client ID:	ZZZZZZ	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/1/2022	SeqNo:	4503019

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	57.722	1.0	10.00	45.44	123	75	125				

Sample ID	N048458-001F-MSD	SampType:	MSD	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:	12/30/2021	RunNo:	159309
Client ID:	ZZZZZZ	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/1/2022	SeqNo:	4503020

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	57.961	1.0	10.00	45.44	125	75	125	57.72	0.414	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W_TPK

Sample ID	MB-90947	SampType:	MBLK	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:	1/3/2022	RunNo:	159413
Client ID:	PBW	Batch ID:	90947	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2022	SeqNo:	4493552

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

Sample ID	LCS-90947	SampType:	LCS	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:	1/3/2022	RunNo:	159413
Client ID:	LCSW	Batch ID:	90947	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2022	SeqNo:	4493553

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	9.600	1.0	10.00	0	96.0	85	115				

Sample ID	N048458-001F-MS	SampType:	MS	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:	1/3/2022	RunNo:	159413
Client ID:	ZZZZZZ	Batch ID:	90947	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2022	SeqNo:	4493610

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	143.118	25	250.0	0	57.2	75	125				S

Sample ID	N048458-001F-MSD	SampType:	MSD	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:	1/3/2022	RunNo:	159413
Client ID:	ZZZZZZ	Batch ID:	90947	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2022	SeqNo:	4493611

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	143.085	25	250.0	0	57.2	75	125	143.1	0.0229	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **N048458-001E-PS**	SampType: **PS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date:	RunNo: **159308**
Client ID: **ZZZZZZ**	Batch ID: **90907**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/31/2021**	SeqNo: **4488295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.515	0.50	10.00	0	105	80	120				
Barium	55.713	1.0	10.00	44.60	111	80	120				
Beryllium	5.618	0.50	10.00	0	56.2	80	120				S
Cadmium	10.278	0.50	10.00	0	103	80	120				
Cobalt	8.436	0.50	10.00	0.1447	82.9	80	120				
Copper	9.663	1.0	10.00	1.710	79.5	80	120				S
Lead	10.131	1.0	10.00	0.03971	101	80	120				
Manganese	101.338	0.50	100.0	13.80	87.5	80	120				
Molybdenum	56.926	0.50	10.00	45.08	118	80	120				
Selenium	11.929	0.50	10.00	1.463	105	80	120				
Silver	9.427	0.50	10.00	0	94.3	80	120				
Thallium	10.377	0.50	10.00	0	104	80	120				
Vanadium	13.356	1.0	10.00	3.696	96.6	80	120				
Zinc	89.534	10	100.0	2.747	86.8	80	120				

Sample ID **N048458-001E-PS**	SampType: **PS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date:	RunNo: **159395**
Client ID: **ZZZZZZ**	Batch ID: **90907**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/3/2022**	SeqNo: **4491611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	6.375	0.10	10.00	0	63.8	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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048458-001E-PS	SampType:	PS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:		RunNo:	159412
Client ID:	ZZZZZZ	Batch ID:	90929	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2022	SeqNo:	4493485

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	143.132	25	250.0	0	57.3	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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W_TPK

Sample ID	N048458-001F-PS	SampType:	PS	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:		RunNo:	159309
Client ID:	ZZZZZZ	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/1/2022	SeqNo:	4488749

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.781	0.50	10.00	0	108	80	120				
Cadmium	10.654	0.50	10.00	0	107	80	120				
Cobalt	8.452	0.50	10.00	0.2062	82.5	80	120				
Copper	10.502	1.0	10.00	2.940	75.6	80	120				S
Lead	10.238	1.0	10.00	0.08958	101	80	120				
Manganese	114.198	0.50	100.0	26.39	87.8	80	120				
Molybdenum	70.599	0.50	10.00	58.06	125	80	120				S
Selenium	12.520	0.50	10.00	1.348	112	80	120				
Silver	9.619	0.50	10.00	0	96.2	80	120				
Thallium	10.244	0.50	10.00	0	102	80	120				
Vanadium	13.768	1.0	10.00	4.345	94.2	80	120				

Sample ID	N048458-001F-PS	SampType:	PS	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:		RunNo:	159404
Client ID:	ZZZZZZ	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2022	SeqNo:	4492630

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	6.685	0.10	10.00	0	66.8	80	120				S
Zinc	60.531	10	100.0	0	60.5	80	120				S

Sample ID	N048458-001F-PS	SampType:	PS	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:		RunNo:	159404
Client ID:	ZZZZZZ	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2022	SeqNo:	4492631

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	7.773	2.5	10.00	0	77.7	80	120				S

Sample ID	N048458-001F-PS	SampType:	PS	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:		RunNo:	159309
Client ID:	ZZZZZZ	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/1/2022	SeqNo:	4503018

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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W_TPK

Sample ID	N048458-001F-PS	SampType:	PS	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:		RunNo:	159309
Client ID:	ZZZZZZ	Batch ID:	90908	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/1/2022	SeqNo:	4503018

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	58.056	1.0	10.00	45.44	126	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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W_TPK

Sample ID	N048458-001F-PS	SampType:	PS	TestCode:	6020_W_TPK	Units:	µg/L	Prep Date:		RunNo:	159413
Client ID:	ZZZZZZ	Batch ID:	90947	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2022	SeqNo:	4493607

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	141.433	25	250.0	0	56.6	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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	IRZ-23-143-122121
Lab Order:	N048464	**Collection Date:**	12/21/2021 10:30:00 AM
Project:	PG&E Topock- Rem Well Baseline, 30106892	**Matrix:**	GROUNDWATER
Lab ID:	N048464-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA2_211227A** QC Batch: **90873**				PrepDate:		**12/27/2021**	Analyst: **DJ**
Mercury	ND	0.12	0.20		µg/L	1	12/27/2021 03:28 PM
TOTAL MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA2_211227A** QC Batch: **90873**				PrepDate:		**12/27/2021**	Analyst: **DJ**
Mercury	ND	0.12	0.20		µg/L	1	12/27/2021 03:11 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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISSPGE

Sample ID	MB-90873	SampType:	MBLK	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/27/2021	RunNo:	159187
Client ID:	PBW	Batch ID:	90873	TestNo:	EPA 7470A			Analysis Date:	12/27/2021	SeqNo:	4480129

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

Sample ID	LCS-90873	SampType:	LCS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/27/2021	RunNo:	159187
Client ID:	LCSW	Batch ID:	90873	TestNo:	EPA 7470A			Analysis Date:	12/27/2021	SeqNo:	4480131

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.470	0.20	5.000	0	109	85	115				

Sample ID	N048464-001J-MS	SampType:	MS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/27/2021	RunNo:	159187
Client ID:	ZZZZZZ	Batch ID:	90873	TestNo:	EPA 7470A			Analysis Date:	12/27/2021	SeqNo:	4480135

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.350	0.20	5.000	0	107	75	125				

Sample ID	N048464-001J-MSD	SampType:	MSD	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/27/2021	RunNo:	159187
Client ID:	ZZZZZZ	Batch ID:	90873	TestNo:	EPA 7470A			Analysis Date:	12/27/2021	SeqNo:	4480136

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	6.150	0.20	5.000	0	123	75	125	5.350	13.9	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_PGE

Sample ID	MB-90873	SampType:	MBLK	TestCode:	7470_W_PGE	Units:	µg/L	Prep Date:	12/27/2021	RunNo:	159187
Client ID:	PBW	Batch ID:	90873	TestNo:	EPA 7470A			Analysis Date:	12/27/2021	SeqNo:	4480102

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

Sample ID	LCS-90873	SampType:	LCS	TestCode:	7470_W_PGE	Units:	µg/L	Prep Date:	12/27/2021	RunNo:	159187
Client ID:	LCSW	Batch ID:	90873	TestNo:	EPA 7470A			Analysis Date:	12/27/2021	SeqNo:	4480104

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.470	0.20	5.000	0	109	85	115				

Sample ID	N048464-001J-MS	SampType:	MS	TestCode:	7470_W_PGE	Units:	µg/L	Prep Date:	12/27/2021	RunNo:	159187
Client ID:	ZZZZZZ	Batch ID:	90873	TestNo:	EPA 7470A			Analysis Date:	12/27/2021	SeqNo:	4480108

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.350	0.20	5.000	0	107	75	125				

Sample ID	N048464-001J-MSD	SampType:	MSD	TestCode:	7470_W_PGE	Units:	µg/L	Prep Date:	12/27/2021	RunNo:	159187
Client ID:	ZZZZZZ	Batch ID:	90873	TestNo:	EPA 7470A			Analysis Date:	12/27/2021	SeqNo:	4480109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	6.150	0.20	5.000	0	123	75	125	5.350	13.9	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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892
Lab ID: N048464-001

Client Sample ID: IRZ-23-143-122121
Collection Date: 12/21/2021 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
MODIFIED FOULING INDEX				**MFI**			
RunID: **NV00922-WC_211222F** QC Batch: **R159650**				PrepDate:			Analyst: **MBC**
Modified Fouling Index (MFI-0.45)	7.5	0.10	0.10		s/L2	1	12/22/2021 02:24 PM
APPROXIMATE IRB POPULATION BY IRB-BART				**BART**			
RunID: **NV00922-WC_211222D** QC Batch: **R159284**				PrepDate:			Analyst: **GGJ**
Iron Related Bacteria	2200	0	0		cfu/mL	1	12/22/2021 10:35 AM
APPROXIMATE SLIME POPULATION BY SLYM-BART				**BART**			
RunID: **NV00922-WC_211222C** QC Batch: **R159282**				PrepDate:			Analyst: **GGJ**
Slime Forming Bacteria	2500	0	0		cfu/mL	1	12/22/2021 10:30 AM
APPROXIMATE SRB POPULATION BY SRB-BART				**BART**			
RunID: **NV00922-WC_211222E** QC Batch: **R159286**				PrepDate:			Analyst: **GGJ**
Sulfate Reducing Bacteria	Absent	0	0		cfu/mL	1	12/22/2021 10:37 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
Work Order: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: IRB-BART

Sample ID **N048464-001DDUP**	SampType: **DUP**	TestCode: **IRB-BART**	Units: **cfu/mL**	Prep Date:				RunNo: **159284**	
Client ID: **ZZZZZZ**	Batch ID: **R159284**	TestNo: **BART**		Analysis Date: **12/22/2021**				SeqNo: **4486801**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron Related Bacteria	2200.000	0						2200	0	15	

Qualifiers:

B	Analyte detected in 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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: SLYM-BART

Sample ID	N048464-001DDUP	SampType:	DUP	TestCode:	SLYM-BART	Units:	cfu/mL	Prep Date:		RunNo:	159282
Client ID:	ZZZZZZ	Batch ID:	R159282	TestNo:	BART			Analysis Date:	12/22/2021	SeqNo:	4486782

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Slime Forming Bacteria	2500.000	0						2500	0	15	

Qualifiers:

B	Analyte detected in 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: N048464
Project: PG&E Topock- Rem Well Baseline, 30106892

ANALYTICAL QC SUMMARY REPORT

TestCode: SRB-BART

Sample ID **N048464-001DDUP**	SampType: **DUP**	TestCode: **SRB-BART**	Units: **cfu/mL**		Prep Date:					RunNo: **159286**		
Client ID: **ZZZZZZ**	Batch ID: **R159286**	TestNo: **BART**			Analysis Date: **12/22/2021**					SeqNo: **4486820**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sulfate Reducing Bacteria	Absent	0						0	0	15		

Qualifiers:

B	Analyte detected in 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		

ARCUS02 C: 1/6/2021 12:00 AM
FOLDER R: 12/21/2021
N048464-002A 1 of 1

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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 ✓ (Specify: RWQCB)
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	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.# SWA-ASSET-C9617-051
Submitted By: Daniel Garcia	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200	Fax:
Title: Staff Engineer			Global ID:
Signature: Date: 12/21/21	Sampled By: Daniel Garcia		Specify State:

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, data or time of collection is considered fraud and may be grounds for

Project Name: PG&E Topock - Rem Well Baseline
Project Number: 30106892
Signature: Date: 12/21/21

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

Sample Receipt Condition

	Y	N
1. Chilled	X	
2. Headspace		
3. Container Intact	X	
4. Seal Present		X
5. IR number	3	

6. Method of Cooling: ICE

Sample Temp: 2.7 °C

Courier: ASSET

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; Filtered 250 mL poly	Silica (EPA6010), HNO3; Filtered 16 oz poly	Hardness SM 2340B), HNO3 16 oz poly	Ammonia as Nitrogen (SM4500-NH3C); H2SO4 16 oz poly	Total Kjeldahl Nitrogen (SM4500-Norg); H2SO4 16 oz poly	Biochemical Oxygen Demand (SM5210Bg); None 32 oz poly	Nitrate, Bromide, Nitrite, Sulfate, Fluoride, Chloride, Phosphate (EPA 300.0) 1 liter poly	Total Dissolved Solids (SM92540) 1 liter poly	Sulfide (SM2332DB); ZnAc/NaOH 16 oz poly	Alkalinity Total (2320B); None 32 oz poly	Bicarbonate (SM 2320B); None 32 oz poly	Biological Activity Test (HACH); None 32 oz poly	Carbonate (SM 2320B); None 32 oz poly	Modified Fouling Index (ASTM); None 32 oz poly	Total Organic Carbon (SM5310C); H2SO4 3x40 mL poly	Mercury Dissolved (EPA7470A) HNO3; Filtered 500 mL poly	Dissolved metals Title 22 (SW 6020), HNO3; filtered 500 mL poly	Calcium, Magnesium, Potassium, Sodium, Iron (SW6010B); HNO3 500 mL poly	Mercury (SW 7470A); HNO3 500 mL poly	Total metals Title 22 (SW 6020), HNO3 500 mL poly	Total Phophorus(EPA365.3) H2SO4 8 oz poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1																																
2																																
3																																
4	N048464-01	IRZ-23-143-122021	12/2/21	1030		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	17	PV	BNS	17 Containers
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																
13																																
14																																

Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
Daniel Garcia	12/2/21 1110	Romeo Acantara	12/21/21 1110
Romeo Acantara	12/21/21 1400	Romeo Acantara	12/21/21 1400

Turn Around Time (TAT)

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

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

Special Instruction:

Title 22 Metals Dissolved- 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

Title 22 Metals TOTAL- Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn

Terms

1. All samples will be disposed in 45 days 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=33 % 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. Surchaige 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:	B	(NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	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:	12/21/2021	Workorder:	N048464
Rep sample Temp (Deg C):	2.7	IR Gun ID:	3
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: See correspondence

Checklist Completed By: GGJ GGarcia 12/28/2021

Reviewed By: MBC 12/28/2021

Subject: Re: PG&E Topock- Rem Well, 30106892 (ASSET Labs No. N048464)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 12/21/2021, 7:03 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "giselle@assetlaboratories.com" <giselle@assetlaboratories.com>, "rustico.aquino@assetlaboratoriesph.com" <rustico.aquino@assetlaboratoriesph.com>

The end of the ID should be -122121

Thanks
Laura

Get Outlook for iOS

From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Tuesday, December 21, 2021 9:05:00 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>; Tina Rice <Tina.Rice@critigen.com>
Cc: maryann.balilu@assetlaboratoriesph.com <maryann.balilu@assetlaboratoriesph.com>; giselle@assetlaboratories.com <giselle@assetlaboratories.com>; rustico.aquino@assetlaboratoriesph.com <rustico.aquino@assetlaboratoriesph.com>
Subject: PG&E Topock- Rem Well, 30106892 (ASSET Labs No. N048464)

Hi Laura,

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

- ID is IRZ-23-143-122021 on COC and IRZ-23-143-122121 on labels

--
Thanks,

Yoandra Rodriguez
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 | F: 702.307.2691
California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436

ASSET LABORATORIES - Serving Clients with Passion and Professionalism

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ASSET Laboratories

WORK ORDER Summary

28-Dec-21

WorkOrder: N048464

Client ID: ARCUS02

Project: PG&E Topock- Rem Well Baseline, 30106892 **QC Level:** Level IV **Date Received:** 12/21/2021

Comments: Title 22 Metals Dissolved- 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048464-001A	IRZ-23-143-122121	12/21/2021 10:30:00 AM	1/6/2022	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048464-001B			1/6/2022		MFI	Modified Fouling Index	☐	☐	☐	WW
N048464-001C			1/6/2022		SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB
			1/6/2022		SM4500-NH3C	TOTAL KJELDAHL NITROGEN	☐	☐	☑	SUB
N048464-001D			1/6/2022		BART	Approximate IRB Population by IRB-BART	☐	☐	☐	WW
			1/6/2022		BART	Approximate Slime Population by SLYM-BART	☐	☐	☐	WW
			1/6/2022		BART	Approximate SRB Population by SRB-BART	☐	☐	☐	WW
N048464-001E			1/6/2022		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			1/6/2022			Total Dissolved Solids Prep	☐	☐	☐	WW
			1/6/2022		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			1/6/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/6/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/6/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/6/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/6/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/6/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/6/2022		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/6/2022		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N048464-001F			1/6/2022		SM 5210 B	BIOCHEMICAL OXYGEN DEMAND	☐	☐	☑	SUB
N048464-001G			1/6/2022		SM4500-S-2D	SULFIDE, TOTAL	☐	☐	☑	SUB
N048464-001H			1/6/2022		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048464-001I			1/6/2022		SM 2340 B	Hardness by Calculation	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

28-Dec-21

WorkOrder: N048464

Client ID: ARCUS02

Project: PG&E Topock- Rem Well Baseline, 30106892 **QC Level:** Level IV **Date Received:** 12/21/2021

Comments: Title 22 Metals Dissolved- 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048464-001I	IRZ-23-143-122121	12/21/2021 10:30:00 AM	1/6/2022	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/6/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/6/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/6/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/6/2022		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/6/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/6/2022		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/6/2022			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			1/6/2022		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N048464-001J			1/6/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/6/2022		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/6/2022		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
			1/6/2022		EPA 6020	TOTAL METALS BY ICPMS	☐	☐	☐	WW
			1/6/2022		EPA 6020	TOTAL METALS BY ICPMS	☐	☐	☐	WW
			1/6/2022			MERCURY PREP	☐	☐	☐	WW
			1/6/2022		EPA 7470A	TOTAL MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N048464-001K			1/6/2022		EPA 365.3	TOTAL PHOSPHORUS	☐	☐	☐	WW
			1/6/2022			Total Phosphorus Prep	☐	☐	☐	WW
N048464-001L							☐	☐	☐	WW
N048464-002A	FOLDER	1/6/2021	1/6/2022		Folder	Folder	☐	☐	☐	LAB
			1/6/2022		Folder	Level IV Report	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

28-Dec-21

WorkOrder: N048464

Client ID: ARCUS02

Project: PG&E Topock- Rem Well Baseline, 30106892 **QC Level:** Level IV **Date Received:** 12/21/2021

Comments: Title 22 Metals Dissolved- 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048464-002A	FOLDER	1/6/2021	1/6/2022		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: **Daniel Garcia**

21-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests			TKN
				SM 5210 B	SM4500-NH3C	SM4500-S-2D	
N048464-001C / IRZ-23-143-~~122021~~ 122121	Groundwater	12/21/2021 10:30:00 AM	16OZP		~~2~~ 1		1
N048464-001F / IRZ-23-143-~~122021~~ 122121	Groundwater	12/21/2021 10:30:00 AM	32OZP	1			
N048464-001G / IRZ-23-143-~~122021~~ 122121	Groundwater	12/21/2021 10:30:00 AM	8OZP			1	

YLJ 12/22/2021

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48464A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT

Please analyze for Biochemical Oxygen Demand (BOD), Ammonia as Nitrogen, Total Kjeldahl Nitrogen and Suldide. EDD requirement Labspec7 edata.

GSO #: 555617796

		Date/Time			Date/Time
Relinquished by:	GGarcia	12/21/2021 16:30	**Received by:**		
Relinquished by:			**Received by:**		

EMAX
LABORATORIES, INC.
3051 Fujita Street
Torrance, CA 90505
Tel: (310)-618-8889

Date: 12-21-2021
EMAX Batch No.: 21K137

Attn: Laura Madsen

ARCADIS
1410 Rocly Ridge Dr #330
Roseville CA 95661

Subject: Laboratory Report
Project: PG&E TOPOCK-GMP

Enclosed is the Laboratory report for samples received on 11/16/21.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MTS-1-Q421	K137-01	11/15/21	WATER	CHROMIUM HEXAVALENT BY IC
				TOTAL DISSOLVED SOLIDS
				TOTAL ALKALINITY
				DISSOLVED METALS BY ICP-MS
				DISSOLVED MERCURY
				ANIONS BY IC
				AMMONIA-N BY SM4500-NH3 F
MTS-2-Q421	K137-02	11/15/21	WATER	CHROMIUM HEXAVALENT BY IC
				TOTAL DISSOLVED SOLIDS
				TOTAL ALKALINITY
				DISSOLVED METALS BY ICP-MS
				DISSOLVED MERCURY
				ANIONS BY IC
				AMMONIA-N BY SM4500-NH3 F

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912021-19
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

EMAX LABORATORIES, INC.

Contact us:
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

CHAIN OF CUSTODY RECORD

21K137

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Dan Bush	EDD Requirement	QA/QC	Sample 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	Address:	Geotracker	RWQCB ✓	1. Chilled
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: dan.bush@arcadis.com	Labspec	CalTrans	2. Headspace
Submitted By: Riggie Tep	Phone: 916-786-3302 Fax:	Phone: 916-786-3302 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Field Tech			Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 11/15/21	Sampled By: Riggie Tep	Matrix: Ground water x; Potable; NPDES; Surface; Sediment; Soil; Other Solid	Global ID	Regulatory	5. IR number
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:
Project Name: PG&E Topock - AZ Hydro6	Signature: Date: 11/15/21				Sample Temp:
Project Number: RC000753.0801					Courier: Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 125 mL poly	Cr(VI) FF (SM3500B) (NH4)2, SO4, NH4, OH 250 mL poly	Metals Dissolved (6020AFF) Potassium, Calcium, Iron, Sodium, Magnesium, Manganese; HNO3 250 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 250 mL poly	Dissolved Title 22 metals (SW6020B) FF; HNO3 250 mL poly	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se, Mn); HNO3 250 mL poly	Alkalinity, Total (SM 2320B) 500 mL poly	Chloride, Fluoride, Sulfate, Nitrate (EPA 300.0) 500 mL poly	TDS (SM 2540C) 500 mL poly	Ammonia as Nitrogen (SM4500-NH3D); H2SO4 125 L poly	TRUE	TRUE	TRUE	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		MTS-1-Q421	11/15/2021	9:40		X		X		X		X	X	X	X	###	###	###	E	5	P	BN	
2		MTS-2-Q421	11/15/2021	9:50		X		X		X		X	X	X	X	###	###	###	E	5	P	BN	
3																###	###	###					
4																###	###	###					
5																###	###	###					
6																###	###	###					
7																###	###	###					
8																							
9																							
10																							

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Riggie Tep	11/15/21 1400	FEDEX	
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
		Johanna Ramirez	11/16/21 0940

Turn Around Time (TAT)

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

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

Special Instruction:
Tittle 22 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

Terms
1. All samples will be disposed in 45 days 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.
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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:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

5.9

Type of Delivery	Airbill / Tracking Number	ECN 21K137
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7752 1617 9260	Recipient Johanna Ramirez
☐ EMAX Courier ☐ Client Delivery		Date 11/16/21 Time 0940

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☑ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☑ Other Plastic		
Condition	☐ Custody Seal	☐ Intact	☐ Damaged		
Packaging	☐ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 5.9 °C	☐ Cooler 2 _____ °C	☐ Cooler 3 _____ °C	☐ Cooler 4 _____ °C	☐ Cooler 5 _____ °C
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C
Thermometer:	*A - S/N* 210191066	*B - S/N* 210271396	*C - S/N* _____	*D - S/N* _____	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action

11/16/21 11/17/21

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS:

LEGEND:

☐ **Continue to next page.**

Code	Description- Sample Management
D1	Analysis is not indicated in _____
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in _____
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
D10	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in _____
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	_____
D23	_____
D24	_____

Code	Description-Sample Management
R1	Proceed as indicated in ☐ COC ☐ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	_____
R9	_____
R10	_____
R11	_____
R12	_____

REVIEWS:

Sample Labeling Johanna Ramirez 11/16/21 — SRF 11/16/21 — PM 11/17/21

ORIGIN ID:IXDA (913) 998-6908
ARCADIS KANSAS CITY
ARCADIS U.S., INC.
8725 ROSEHILL ROAD
SUITE 350
LENEXA, KS 66215
UNITED STATES US

SHIP DATE: 15NOV21
ACTWGT: 30.00 LB
CAD: 4502286/INET4400
DIMS: 34x22x22 IN

BILL SENDER

TO **RECEIVING**
EMAX LABS
3051 FUJITA ST

TORRANCE CA 90505
(310) 618-8889 X 117 REF: 30035275.3Q21GW.ANA
INV:
PO: DEPT:

56DJ29A7E/FE4A

FedEx Express

J21222110180 1uu

FedEx Ship Manager - Print Your Label(s)

FedEx

TRK# 0201 TRK# 0201 **7752 1617 9260**

TUE – 16 NOV AA
PRIORITY OVERNIGHT

A QZ HHRA

90505
CA-US **LAX**

#535186 11/15 56DJ2/9A7E/FE4A

11/15/21, 3:39 PM

EXP 08/22

11/16/21
0940

B: 5,9

Plastic

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

ARCADIS

PG&E TOPOCK-GMP

METALS / MERCURY

SDG#: 21K137

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21K137

METHOD SW6020A (DISSOLVED)
DISSOLVED METALS BY ICP-MS

A total of two(2) water samples were received on 11/16/21 to be analyzed for Dissolved Metals by ICP-MS in accordance with Method SW6020A (DISSOLVED) and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were satisfied.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. IMK016WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. IMK016WL/IMK016WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

K137-01: Boron and Sodium were reported from dilution due to over-calibration range results.
K137-02: Boron, Calcium and Sodium were reported from dilution due to over-calibration range results.

LAB CHRONICLE
DISSOLVED METALS BY ICP-MS

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 21K137
Instrument ID : H6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IMK016WB	1	NA	11/18/2111:50	11/16/2111:55	H6K19025	H6K19023	IMK016W	Method Blank
LCD1W	IMK016WC	1	NA	11/18/2112:00	11/16/2111:55	H6K19027	H6K19023	IMK016W	LCS Duplicate
LCS1W	IMK016WL	1	NA	11/18/2112:11	11/16/2111:55	H6K19028	H6K19023	IMK016W	Lab Control Sample (LCS)
MTS-1-Q421	K137-01I	10	NA	11/18/2112:40	11/16/2111:55	H6K19035	H6K19031	IMK016W	Diluted Sample
MTS-2-Q421	K137-02I	10	NA	11/18/2112:43	11/16/2111:55	H6K19036	H6K19031	IMK016W	Diluted Sample
MTS-1-Q421	K137-01	1	NA	11/18/2112:46	11/16/2111:55	H6K19037	H6K19031	IMK016W	Field Sample
MTS-2-Q421	K137-02	1	NA	11/18/2112:48	11/16/2111:55	H6K19038	H6K19031	IMK016W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A (DISSOLVED)
DISSOLVED METALS BY ICP-MS

Client : ARCADIS — Date Collected: 11/15/21 09:40
Project : PG&E TOPOCK-GMP — Date Received: 11/16/21
SDG NO. : 21K137 — Date Extracted: 11/16/21 11:55
Sample ID: MTS-1-Q421 — Date Analyzed: 11/18/21 12:46
Lab Samp ID: K137-01 — Dilution Factor: 1
Lab File ID: H6K19037 — Matrix: WATER
Ext Btch ID: IMK016W — % Moisture: NA
Calib. Ref.: H6K19031 — Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	200	100
Antimony	ND	1.00	0.500
Arsenic	23.9	1.00	0.250
Barium	28.1	1.00	0.500
Beryllium	ND	1.00	0.200
Cadmium	ND	1.00	0.300
Calcium	11200	100	60.0
Chromium	ND	1.00	0.300
Cobalt	ND	1.00	0.200
Copper	ND	2.00	1.00
Iron	ND	100	50.0
Lead	ND	1.00	0.200
Magnesium	358	100	20.0
Manganese	ND	10.0	0.500
Molybdenum	14.3	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	6380	100	25.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

Sample ID: MTS-1-Q421 — Date Analyzed: 11/18/21 12:40
Lab Samp ID: K137-01I — Dilution Factor: 10
Lab File ID: H6K19035 — Matrix: WATER
Ext Btch ID: IMK016W — % Moisture: NA
Calib. Ref.: H6K19031 — Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Boron	487	100	50.0
Sodium	352000	5000	500

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml — Final Volume:50ml
Prepared by : CKaing — Analyzed by:LYaman

METHOD SW6020A (DISSOLVED)
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	11/15/21 09:40
Project	: PG&E TOPOCK-GMP	Date Received:	11/16/21
SDG NO.	: 21K137	Date Extracted:	11/16/21 11:55
Sample ID:	MTS-1-Q421	Date Analyzed:	11/18/21 12:46
Lab Samp ID:	K137-01	Dilution Factor:	1
Lab File ID:	H6K19037	Matrix:	WATER
Ext Btch ID:	IMK016W	% Moisture:	NA
Calib. Ref.:	H6K19031	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	200	100
Antimony	ND	1.00	0.500
Arsenic	23.9	1.00	0.250
Barium	28.1	1.00	0.500
Beryllium	ND	1.00	0.200
Boron	555E	10.0	5.00
Cadmium	ND	1.00	0.300
Calcium	11200	100	60.0
Chromium	ND	1.00	0.300
Cobalt	ND	1.00	0.200
Copper	ND	2.00	1.00
Iron	ND	100	50.0
Lead	ND	1.00	0.200
Magnesium	358	100	20.0
Manganese	ND	10.0	0.500
Molybdenum	14.3	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	6380	100	25.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	351000E	500	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

METHOD SW6020A (DISSOLVED)
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	11/15/21 09:40
Project	: PG&E TOPOCK-GMP	Date Received:	11/16/21
SDG NO.	: 21K137	Date Extracted:	11/16/21 11:55
Sample ID:	MTS-1-Q421	Date Analyzed:	11/18/21 12:40
Lab Samp ID:	K137-01I	Dilution Factor:	10
Lab File ID:	H6K19035	Matrix:	WATER
Ext Btch ID:	IMK016W	% Moisture:	NA
Calib. Ref.:	H6K19031	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	2000	1000
Antimony	ND	10.0	5.00
Arsenic	23.9	10.0	2.50
Barium	28.7	10.0	5.00
Beryllium	ND	10.0	2.00
Boron	487	100	50.0
Cadmium	ND	10.0	3.00
Calcium	11400	1000	600
Chromium	ND	10.0	3.00
Cobalt	ND	10.0	2.00
Copper	ND	20.0	10.0
Iron	ND	1000	500
Lead	ND	10.0	2.00
Magnesium	ND	1000	200
Manganese	ND	100	5.00
Molybdenum	ND	20.0	5.00
Nickel	ND	10.0	5.00
Potassium	6180	1000	250
Selenium	ND	10.0	3.00
Silver	ND	10.0	2.00
Sodium	352000	5000	500
Thallium	ND	10.0	2.00
Vanadium	ND	10.0	5.00
Zinc	ND	200	100

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

METHOD SW6020A (DISSOLVED)
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	11/15/21 09:50
Project	: PG&E TOPOCK-GMP	Date Received:	11/16/21
SDG NO.	: 21K137	Date Extracted:	11/16/21 11:55
Sample ID:	MTS-2-Q421	Date Analyzed:	11/18/21 12:48
Lab Samp ID:	K137-02	Dilution Factor:	1
Lab File ID:	H6K19038	Matrix:	WATER
Ext Btch ID:	IMK016W	% Moisture:	NA
Calib. Ref.:	H6K19031	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	200	100
Antimony	ND	1.00	0.500
Arsenic	17.3	1.00	0.250
Barium	82.6	1.00	0.500
Beryllium	ND	1.00	0.200
Cadmium	ND	1.00	0.300
Chromium	7.30	1.00	0.300
Cobalt	ND	1.00	0.200
Copper	ND	2.00	1.00
Iron	ND	100	50.0
Lead	ND	1.00	0.200
Magnesium	3070	100	20.0
Manganese	ND	10.0	0.500
Molybdenum	17.9	2.00	0.500
Nickel	2.39	1.00	0.500
Potassium	7680	100	25.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Thallium	ND	1.00	0.200
Vanadium	11.2	1.00	0.500
Zinc	ND	20.0	10.0

Sample ID:	MTS-2-Q421	Date Analyzed:	11/18/21 12:43
Lab Samp ID:	K137-02I	Dilution Factor:	10
Lab File ID:	H6K19036	Matrix:	WATER
Ext Btch ID:	IMK016W	% Moisture:	NA
Calib. Ref.:	H6K19031	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Boron	756	100	50.0
Calcium	85600	1000	600
Sodium	370000	5000	500

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

METHOD SW6020A (DISSOLVED)
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	11/15/21 09:50
Project	: PG&E TOPOCK-GMP	Date Received:	11/16/21
SDG NO.	: 21K137	Date Extracted:	11/16/21 11:55
Sample ID:	MTS-2-Q421	Date Analyzed:	11/18/21 12:48
Lab Samp ID:	K137-02	Dilution Factor:	1
Lab File ID:	H6K19038	Matrix:	WATER
Ext Btch ID:	IMK016W	% Moisture:	NA
Calib. Ref.:	H6K19031	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	200	100
Antimony	ND	1.00	0.500
Arsenic	17.3	1.00	0.250
Barium	82.6	1.00	0.500
Beryllium	ND	1.00	0.200
Boron	848E	10.0	5.00
Cadmium	ND	1.00	0.300
Calcium	86200E	100	60.0
Chromium	7.30	1.00	0.300
Cobalt	ND	1.00	0.200
Copper	ND	2.00	1.00
Iron	ND	100	50.0
Lead	ND	1.00	0.200
Magnesium	3070	100	20.0
Manganese	ND	10.0	0.500
Molybdenum	17.9	2.00	0.500
Nickel	2.39	1.00	0.500
Potassium	7680	100	25.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	367000E	500	50.0
Thallium	ND	1.00	0.200
Vanadium	11.2	1.00	0.500
Zinc	ND	20.0	10.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

METHOD SW6020A (DISSOLVED)
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	11/15/21 09:50
Project	: PG&E TOPOCK-GMP	Date Received:	11/16/21
SDG NO.	: 21K137	Date Extracted:	11/16/21 11:55
Sample ID:	MTS-2-Q421	Date Analyzed:	11/18/21 12:43
Lab Samp ID:	K137-02I	Dilution Factor:	10
Lab File ID:	H6K19036	Matrix:	WATER
Ext Btch ID:	IMK016W	% Moisture:	NA
Calib. Ref.:	H6K19031	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	2000	1000
Antimony	ND	10.0	5.00
Arsenic	16.7	10.0	2.50
Barium	81.6	10.0	5.00
Beryllium	ND	10.0	2.00
Boron	756	100	50.0
Cadmium	ND	10.0	3.00
Calcium	85600	1000	600
Chromium	ND	10.0	3.00
Cobalt	ND	10.0	2.00
Copper	ND	20.0	10.0
Iron	ND	1000	500
Lead	ND	10.0	2.00
Magnesium	3050	1000	200
Manganese	ND	100	5.00
Molybdenum	ND	20.0	5.00
Nickel	ND	10.0	5.00
Potassium	7370	1000	250
Selenium	ND	10.0	3.00
Silver	ND	10.0	2.00
Sodium	370000	5000	500
Thallium	ND	10.0	2.00
Vanadium	10.8	10.0	5.00
Zinc	ND	200	100

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

METHOD SW6020A (DISSOLVED)
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	NA
Project	: PG&E TOPOCK-GMP	Date Received:	NA
SDG NO.	: 21K137	Date Extracted:	11/16/21 11:55
Sample ID:	MBLK1W	Date Analyzed:	11/18/21 11:50
Lab Samp ID:	IMK016WB	Dilution Factor:	1
Lab File ID:	H6K19025	Matrix:	WATER
Ext Btch ID:	IMK016W	% Moisture:	NA
Calib. Ref.:	H6K19023	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	200	100
Antimony	ND	1.00	0.500
Arsenic	ND	1.00	0.250
Barium	ND	1.00	0.500
Beryllium	ND	1.00	0.200
Boron	ND	10.0	5.00
Cadmium	ND	1.00	0.300
Calcium	ND	100	60.0
Chromium	ND	1.00	0.300
Cobalt	ND	1.00	0.200
Copper	ND	2.00	1.00
Iron	ND	100	50.0
Lead	ND	1.00	0.200
Magnesium	ND	100	20.0
Manganese	ND	10.0	0.500
Molybdenum	ND	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	ND	100	25.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	ND	500	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21K137
METHOD : SW6020A (DISSOLVED)

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IMK016WB	IMK016WL	IMK016WC
LAB FILE ID	: H6K19025	H6K19028	H6K19027
DATE PREPARED	: 11/16/21 11:55	11/16/21 11:55	11/16/21 11:55
DATE ANALYZED	: 11/18/21 11:50	11/18/21 12:11	11/18/21 12:00
PREP BATCH	: IMK016W	IMK016W	IMK016W
CALIBRATION REF	: H6K19023	H6K19023	H6K19023

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Aluminum	ND	3000	2960	99	3000	3000	100	1	85-115	20
Antimony	ND	30	26.0	87	30	26.0	87	0	85-115	20
Arsenic	ND	30	30.2	101	30	30.5	102	1	85-115	20
Barium	ND	30	27.7	92	30	27.4	91	1	85-115	20
Beryllium	ND	30	29.2	97	30	30.1	100	3	85-115	20
Boron	ND	30	26.6	89	30	25.9	86	3	85-115	20
Cadmium	ND	30	27.8	93	30	28.1	94	1	85-115	20
Calcium	ND	3000	3190	106	3000	3240	108	2	85-115	20
Chromium	ND	30	30.5	102	30	30.8	103	1	85-115	20
Cobalt	ND	30	28.3	94	30	28.5	95	1	85-115	20
Copper	ND	30	30.5	102	30	30.8	103	1	85-115	20
Iron	ND	3000	3140	105	3000	3210	107	2	85-115	20
Lead	ND	30	28.6	95	30	28.9	96	1	85-115	20
Magnesium	ND	3000	3050	102	3000	3070	102	1	85-115	20
Manganese	ND	30	28.3	94	30	28.3	94	0	85-115	20
Molybdenum	ND	30	27.8	93	30	28.1	94	1	85-115	20
Nickel	ND	30	28.3	94	30	29.0	97	2	85-115	20
Potassium	ND	3000	3030	101	3000	3100	103	2	85-115	20
Selenium	ND	30	30.8	103	30	31.1	104	1	85-115	20
Silver	ND	30	29.9	100	30	30.1	100	1	85-115	20
Sodium	ND	3000	3110	104	3000	3190	106	3	85-115	20
Thallium	ND	30	28.4	95	30	28.7	96	1	85-115	20
Vanadium	ND	30	28.8	96	30	29.0	97	1	85-115	20
Zinc	ND	60	53.2	89	60	52.6	88	1	85-115	20

ICP-MS QC CHECK TABLE

QC	HIGH STD	ICV	CCV	ICSAB	ICSA
Limit%		90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	3000	25000	100000	100000
Sb	100	60	50	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	300	25	20	0
B	100	300	50	20	0
Cd	500	300	250	20	0
Ca	50000	3000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	300	25000	100000	100000
Pb	500	300	250	20	0
Mg	50000	3000	25000	100000	100000
Mn	3000	300	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
K	50000	3000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	2000	0
Ag	50	30	25	20	0
Na	50000	3000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0
Li	50	30	25	20	0

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 11|18|21 10:28

End Date: 11|18|21 16:34

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

K052
10X: 0.5mL → 5mL

K137
10X: 0.5mL → 5mL

K110
10X: 0.5mL → 5mL

J227
10X: 0.5mL → 5mL
200X: 0.025mL → 5mL

1264
50X: 0.1mL → 5mL
100X: 0.05mL → 5mL

Book #: AH6-009
Instrument No.: H6
Analytical Batch: 1H6K19
Analytical Sequence: H6K19
Method File: EM6020
Micropipette ID: ☐ 142781004
Micropipette ID: ☑ ICP-06
Micropipette ID: ☑ 339362028
Micropipette ID: ☑ GFAA-07
Micropipette ID: ☐ 339342032
Micropipette ID: ☑ A42780077
Micropipette ID: ☐ 542761827
Micropipette ID: ☐

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B-22-63-02	MRL1 (1)	SM6B-22-42-01
S1	64-01	MRL2 (0.4)	42-02
S2	64-02	MRL3 (0.1)	42-01
S3	65-01	MRL4	NA
S4	65-02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SM6B-22-67-01
S7	↓	Post-Spike 1	SM6A-007-07-22
ICV	SM6B-22-18-02	Post-Spike 2	07-23
CCV	66-01	Post-Spike 3	NA
ICSA	67-02 ~~66-0~~	Post-Spike 4	↓
ICSAB	68-01	LY 11/18/21	
6020 TUNE SOLN.	66-02		
200.8 TUNE SOLN.	66-02		

Analyzed By: LY

Date: 11|18|21

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 21K137
Method : METHOD SW6020A (DISSOLVED)
Sequence : IH6K19
InstrumentID: H6

		ICV				ICSA1			ICSAB1		
Lab Samp ID :		ICV				ICSA1			ICSAB1		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		H6K19008				H6K19012			H6K19013		
DateAnalyed :		11/18/2110:53				11/18/2111:04			11/18/2111:06		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		29.49	30	2.7	98	0.28240	0	>0	19.287	20	96
Beryllium	T	29.82	30	2.5	99	0.00078747	0	<.2	19.543	20	98
Boron	T	30.04	30	1.2	100	0.31420	0	<5	17.181	20	86
Sodium	T	30970	30000	0.4	103	106250	100000	106	100820	100000	101
Magnesium	T	30440	30000	2.8	101	103480	100000	103	99494	100000	99
Aluminum	T	30350	30000	1.4	101	103100	100000	103	98750	100000	99
Silicon		3245	3000	0.5	108	3.6688	0	<20	193.76	200	97
Phosphorus		290.0	300	1.2	97	112690	100000	113	107490	100000	107
Potassium	T	31090	30000	0.5	104	108310	100000	108	102850	100000	103
Calcium	T	31380	30000	0.4	105	108290	100000	108	102110	100000	102
Titanium		292.3	300	1.5	97	2514.4	2000	126*	2431.7	2000	122*
Vanadium	T	298.2	300	0.5	99	0.0049917	0	<.5	18.966	20	95
Chromium	T	302.1	300	0.2	101	2.1169	0	>.3	21.539	20	108
Manganese	T	1971	2000	2.8	99	0.38463	0	<.5	18.008	20	90
Iron	T	31100	30000	0.6	104	107210	100000	107	101520	100000	102
Cobalt	T	297.8	300	2.1	99	0.16341	0	<.2	17.923	20	90
Nickel	T	270.7	300	0.9	90	0.15460	0	<.5	17.632	20	88
Copper	T	304.2	300	0.2	101	0.27405	0	<1	18.732	20	94
Zinc	T	321.3	300	4.2	107	1.5089	0	<10	17.970	20	90
Arsenic	T	298.7	300	1.3	100	0.061693	0	<.25	19.847	20	99
Selenium	T	300.9	300	0.5	100	0.32537	0	>.3	20.604	20	103
Strontium		300.5	300	5.0	100	1.1182	0	>1.0	19.023	20	95
Zirconium		28.17	30	3.6	94	0.25408	0	<2.0	16.927	20	85
Molybdenum	T	293.6	300	0.6	98	2125.7	2000	106	2026.6	2000	101
Silver	T	30.57	30	0.5	102	0.29411	0	>.2	19.129	20	96
Cadmium	T	279.5	300	0.7	93	0.085791	0	<.3	16.875	20	84
Tin		296.8	300	0.6	99	0.11430	0	<0.2	18.330	20	92
Antimony	T	56.07	60	0.3	93	0.056257	0	<.5	17.054	20	85
Barium	T	301.6	300	0.6	101	0.34601	0	<.5	18.857	20	94
Tungsten		30.52	30	0.7	102	0.13153	0	<1.0	18.667	20	93
Mercury		2.726	3	0.8	91	0.0040317	0	<0.1	1.9849	2	99
Thallium	T	299.1	300	1.8	100	0.00059582	0	<.2	17.726	20	89
Lead	T	300.7	300	1.4	100	0.10008	0	<.2	18.055	20	90
Uranium		296.8	300	1.0	99	0.00019396	0	<0.1	18.483	20	92

Unit: ug/L
T: Target analyte
EV: Expected Value
Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 21K137
Method : METHOD SW6020A (DISSOLVED)
Sequence : IH6K19
Instrument ID: H6

CCV SampleID		: CCV2			CCV3			CCV4		
CCV DataFileID		: H6K19023			H6K19031			H6K19039		
CCV DateTime		: 11/18/21 11:42			11/18/21 12:25			11/18/21 12:56		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	23.5	94	3.5	23.9	95	1.9	24.2	97	0.9
Beryllium	T	25	24.2	97	2.0	24.3	97	1.8	24.2	97	2.8
Boron	T	50	45.3	91	4.4	46.3	93	1.7	46.7	93	4.2
Sodium	T	25000	24700	99	0.9	24300	97	2.3	24500	98	0.4
Magnesium	T	25000	23900	95	1.7	24600	98	1.2	24500	98	3.3
Aluminum	T	25000	23800	95	2.2	24800	99	1.3	24300	97	2.2
Silicon		2500	2460	99	0.6	2460	98	3.1	2500	100	0.6
Phosphorus		250	236	94	1.8	239	96	1.3	240	96	2.1
Potassium	T	25000	24700	99	0.7	24800	99	0.4	24600	98	0.1
Calcium	T	25000	24700	99	0.8	24500	98	2.6	24500	98	0.5
Titanium		250	242	97	0.9	245	98	1.0	242	97	2.4
Vanadium	T	250	251	100	0.6	250	100	0.8	247	99	1.7
Chromium	T	250	252	101	0.4	252	101	0.8	249	100	0.6
Manganese	T	1500	1460	98	1.6	1470	98	1.2	1460	97	2.9
Iron	T	25000	25000	100	0.8	24600	98	2.9	24600	98	0.5
Cobalt	T	250	245	98	1.2	244	98	0.7	244	98	3.3
Nickel	T	250	234	93	0.6	232	93	0.7	228	91	0.9
Copper	T	250	254	102	0.4	255	102	0.6	250	100	0.3
Zinc	T	250	236	94	5.1	231	92	4.8	225	90	1.2
Arsenic	T	250	246	98	0.2	248	99	0.3	245	98	0.6
Selenium	T	250	247	99	0.3	241	97	3.5	245	98	1.5
Strontium		250	247	99	4.8	239	96	3.8	231	92	1.5
Zirconium		25	26.1	104	3.7	25.5	102	2.3	24.5	98	0.8
Molybdenum	T	250	238	95	2.7	239	96	2.1	237	95	2.0
Silver	T	25	24.3	97	0.9	24.3	97	2.0	24.1	97	1.3
Cadmium	T	250	233	93	0.9	235	94	1.1	233	93	1.4
Tin		250	241	96	1.6	240	96	1.9	241	97	2.6
Antimony	T	50	49.5	99	0.5	50.1	100	1.0	49.4	99	1.7
Barium	T	500	484	97	1.5	489	98	2.1	481	96	2.6
Tungsten		25	24.0	96	1.0	24.6	98	0.8	23.9	96	0.9
Mercury		2.5	2.42	97	1.4	2.43	97	1.6	2.38	95	1.3
Thallium	T	250	248	99	2.2	249	100	1.2	245	98	0.7
Lead	T	250	247	99	1.4	250	100	1.4	243	97	1.4
Uranium		250	245	98	1.1	241	97	1.8	239	96	0.8

Unit: ug/L
T: Target analyte
%Rec QC Limit: 90-110
RSD QC Limit: <5
CCV EV: CCV Expected Value ug/L
Comment:

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 21K137
Method : SW6020A (DISSOLVED)
Sequence : IH6K19
Instrument ID: H6

CB SampleID		: ICB		CCB2		CCB3		CCB4	
CB DataFileID		: H6K19009		H6K19024		H6K19032		H6K19040	
CB DateTime		: 11/18/2110:56		11/18/2111:45		11/18/2112:27		11/18/2112:59	
PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.01	>0	0.1	>0	0.0007	>0	0.06	>0
Beryllium	T	.2	0.009	<.2	0.01	<.2	0.01	<.2	0.01	<.2
Boron	T	5	1	<5	3	<5	3	<5	2	<5
Sodium	T	50	0.3	<50	3	<50	2	<50	30	<50
Magnesium	T	20	4	<20	3	<20	4	<20	4	<20
Aluminum	T	100	4	<100	3	<100	4	<100	4	<100
Silicon		20	1	<20	0.9	<20	2	<20	2	<20
Phosphorus		25	0.5	<25	3	<25	2	<25	2	<25
Potassium	T	25	3	<25	0.2	<25	2	<25	5	<25
Calcium	T	60	2	<60	2	<60	2	<60	3	<60
Titanium		0.5	0.05	<0.5	0.04	<0.5	0.06	<0.5	0.06	<0.5
Vanadium	T	.5	0.02	<.5	0.2	<.5	0.1	<.5	0.003	<.5
Chromium	T	.3	0.02	<.3	0.009	<.3	0.003	<.3	0.02	<.3
Manganese	T	.5	0.3	<.5	0.2	<.5	0.2	<.5	0.2	<.5
Iron	T	50	3	<50	3	<50	3	<50	3	<50
Cobalt	T	.2	0.03	<.2	0.03	<.2	0.04	<.2	0.03	<.2
Nickel	T	.5	0.02	<.5	0.007	<.5	0.02	<.5	0.02	<.5
Copper	T	1	0.1	<1	0.7	<1	0.6	<1	0.5	<1
Zinc	T	10	0.08	<10	0.06	<10	0.1	<10	0.08	<10
Arsenic	T	.25	0.06	<.25	0.07	<.25	0.06	<.25	0.05	<.25
Selenium	T	.3	0.09	<.3	0.04	<.3	0.05	<.3	0.05	<.3
Strontium		1.0	0.03	<1.0	0.03	<1.0	0.04	<1.0	0.05	<1.0
Zirconium		2.0	0.006	<2.0	0.005	<2.0	0.009	<2.0	0.005	<2.0
Molybdenum	T	.5	0.05	<.5	0.05	<.5	0.05	<.5	0.05	<.5
Silver	T	.2	0.006	<.2	0.004	<.2	0.005	<.2	0.006	<.2
Cadmium	T	.3	0.07	<.3	0.06	<.3	0.07	<.3	0.07	<.3
Tin		0.2	0.2	<0.2	0.1	<0.2	0.1	<0.2	0.1	<0.2
Antimony	T	.5	0.01	<.5	0.01	<.5	0.02	<.5	0.02	<.5
Barium	T	.5	0.03	<.5	0.05	<.5	0.07	<.5	0.06	<.5
Tungsten		1.0	0.02	<1.0	0.01	<1.0	0.01	<1.0	0.007	<1.0
Mercury		0.1	0.02	<0.1	0.008	<0.1	0.03	<0.1	0.02	<0.1
Thallium	T	.2	0.1	<.2	0.06	<.2	0.08	<.2	0.07	<.2
Lead	T	.2	0.1	<.2	0.05	<.2	0.06	<.2	0.05	<.2
Uranium		0.1	0.03	<0.1	0.03	<0.1	0.04	<0.1	0.04	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

Sample List

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b

Block List

Acquisition Order

Sequence Order	Block Name
1	Calibration Standards
2	Unknown Samples

Blocks

Calibration Standards

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		CalBlk	BLANK		1101	H6K19001.d		1	
2		CalBlk	BLANK		1101	H6K19002.d		1	
3		CalBlk	S0		1102	H6K19003.d		1	
4		CalStd	S1		1104	H6K19004.d		2	
5		CalStd	S2		1105	H6K19005.d		3	
6		CalStd	S3		1106	H6K19006.d		4	
7		CalStd	S4		1107	H6K19007.d		5	
8		ICV	ICV		1204	H6K19008.d			1
9		ICB	ICB		1102	H6K19009.d			1
10		LLCCV	MRLK1801 ✓	1/100/10 ppb	1306	H6K19010.d			1
11		LLCCV2	MRLK1802	0.4/40/4 ppb ✓	1307	H6K19011.d			1
12		ICS-A	ICSA1		1304	H6K19012.d			1
13		ICSB	ICSAB1		1305	H6K19013.d			1
14		Sample	MRLK1803	500 ppb CAT	1207	H6K19014.d			1
15		CCV	CCV1		1206	H6K19015.d			1
16		CCB	CCB1		1102	H6K19016.d			1

Unknown Samples

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		Sample	LODV-W1		2101	H6K19017.d			1
2		Sample	LOQV-W1		2102	H6K19018.d			1
3		Sample	LOQV-W2		2103	H6K19019.d			1
4		Sample	LOQV-S1		2104	H6K19020.d			1
5		Sample	LOQV-WW1		2105	H6K19021.d			1
6		Sample	LODV-W1		2101	H6K19022.d			1
7		CCV	CCV2		1206	H6K19023.d			1
8		CCB	CCB2		1102	H6K19024.d			1
9		Blank	IMK016WB		2106	H6K19025.d			1
10		LCSW X	IMK016WL	Inj.error	2107	H6K19026.d			1
11		LCSW	IMK016WC		2108	H6K19027.d			1
12		LCSW	IMK016WL		2107	H6K19028.d			1
13		Sample	K052-01	Li B Na cal	2109	H6K19029.d			1
14		Sample	K052-01l		2110	H6K19030.d			10
15		CCV	CCV3		1206	H6K19031.d			1
16		CCB	CCB3		1102	H6K19032.d			1
17		LLCCV	MRLK1804	1/100/10 ppb cal	1306	H6K19033.d			1
18		LLCCV2	MRLK1805	0.4/40/4 ppb	1307	H6K19034.d			1
19		Sample	K137-01l		2111	H6K19035.d			10
20		Sample	K137-02l		2112	H6K19036.d			10

Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
21		Sample	K137-01 BNQ1		3101	H6K19037.d			1
22		Sample	K137-02 BNQ CQ1		3102	H6K19038.d			1
23		CCV	CCV4		1206	H6K19039.d			1
24		CCB	CCB4		1102	H6K19040.d			1
25		ICS-A	ICSA2		1304	H6K19041.d			1
26		ICSB	ICSAB2		1305	H6K19042.d			1
27		Sample	K110-01M OK@1X		2201	H6K19043.d			10
28		Sample	K110-01M		2209	H6K19044.d			1
29		Sample	K110-01S		2210	H6K19045.d			1
30		Sample	K110-01A		2211	H6K19046.d			1
31		Sample	K110-01		2212	H6K19047.d			1
32		Sample	K110-01J		2301	H6K19048.d			5
33		Sample	K110-02		2302	H6K19049.d			1
34		Sample	K110-03I	YELLOW	2207	H6K19050.d			10
35		CCV	CCV5		1206	H6K19051.d			1
36		CCB	CCB5		1102	H6K19052.d			1
37		Sample	K110-04I		2208	H6K19053.d			10
38		Sample	K110-03		2303	H6K19054.d			1
39		Sample	K110-04		2304	H6K19055.d			1
40		CCV	CCV6		1206	H6K19056.d			1
41		CCB	CCB6		1102	H6K19057.d			1
42		Blank	IMJ055WB		2305	H6K19058.d			1
43		LCSW	IMJ055WL		2306	H6K19059.d			1
44		LCSW	IMJ055WC		2307	H6K19060.d			1
45		Sample	J227-02M		2308	H6K19061.d			10
46		Sample	J227-02S		2309	H6K19062.d			10
47		Sample	J227-02A		2310	H6K19063.d			10
48		Sample	J227-02I		2311	H6K19064.d			10
49		Sample	J227-02J		2312	H6K19065.d			50
50		Sample	J227-03I		2401	H6K19066.d			10
51		Sample	J227-05I CR1		2402	H6K19067.d			10
52		CCV	CCV7		1206	H6K19068.d			1
53		CCB	CCB7		1102	H6K19069.d			1
54		Sample	J227-06I CR1		2403	H6K19070.d			10
55		Sample	J227-07I		2404	H6K19071.d			10
56		Sample	J227-09I		2405	H6K19072.d			10
57		Sample	J227-10I		2406	H6K19073.d LIS 71201.			10
58		Sample	J227-13I OK@1X		2407	H6K19074.d			10
59		Sample	J227-14I ↓		2408	H6K19075.d ↓			10
60		Sample	J227-15I		2409	H6K19076.d			10
61		Sample	J227-16I OK@1X		2410	H6K19077.d			10
62		Sample	J227-20I		2411	H6K19078.d			10
63		CCV	CCV8		1206	H6K19079.d			1
64		CCB	CCB8		1102	H6K19080.d			1
65		Sample	J227-10I		2406	H6K19081.d			10
66		Sample	J227-13		3101	H6K19082.d			1
67		Sample	J227-14		3102	H6K19083.d			1
68		Sample	J227-16		3103	H6K19084.d			1
69		Sample	J227-05K		3104	H6K19085.d			200
70		Sample	J227-06K		3105	H6K19086.d			200
71		CCV	CCV9		1206	H6K19087.d			1
72		CCB	CCB9		1102	H6K19088.d			1

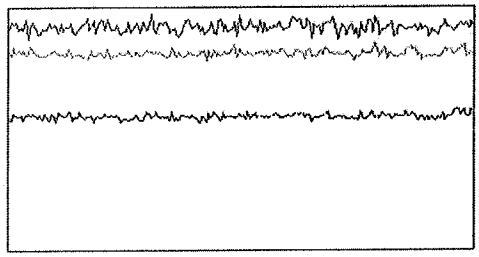
Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
73		Blank	IMI043WB		2412	H6K19089.d			1
74		LCSW	IMI043WL		2501	H6K19090.d			1
75		LCSW	IMI043WC		2502	H6K19091.d			1
76		Sample	I264-10M		2503	H6K19092.d			50
77		Sample	I264-10S		2504	H6K19093.d			50
78		Sample	I264-10A		2505	H6K19094.d			50
79		Sample	I264-10K		2506	H6K19095.d			50
80		Sample	I264-10J		2507	H6K19096.d			250
81		Sample	I264-11K		2508	H6K19097.d			50
82		Sample	I264-12K	SC[He]157120.1. (Cr)	2509	H6K19098.d			50
83		CCV	CCV10		1206	H6K19099.d			1
84		CCB	CCB10		1102	H6K19100.d			1
85		Blank	IMK012WB		2101	H6K19101.d			1
86		LCSW	IMK012WL		2102	H6K19102.d			1
87		LCSW	IMK012WC		2103	H6K19103.d			1
88		Sample	K044-01M	TOT	2104	H6K19104.d			1
89		Sample	K044-01S	TOT	2105	H6K19105.d			1
90		Sample	K044-01A	TOT	2106	H6K19106.d			1
91		Sample	K044-01	TOT	2107	H6K19107.d			1
92		Sample	K044-01J	TOT	2108	H6K19108.d			5
93		Sample	K044-04	TOT	2109	H6K19109.d			1
94		CCV	CCV11		1206	H6K19110.d			1
95		CCB	CCB11		1102	H6K19111.d			1
96		Sample	K044-01	DISS	2110	H6K19112.d			1
97		Sample	K044-04	DISS	2111	H6K19113.d			1
98		Sample	I264-12K		2112	H6K19114.d			100
99		CCV	CCV12		1206	H6K19115.d			1
100		CCB	CCB12		1102	H6K19116.d			1

Performance Report

Operator Name	LYaman
Acq. Date-Time	2021-11-18 08:51:42
Instrument Name	G8421A SG19253823
Sample Introduction	ISIS
Nebulizer Type	MicroMist
Ion Lens Model	x-Lens
Tune Parameters	Standard Tune

Sensitivity



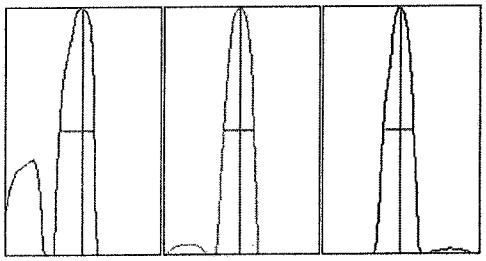
Mass	Range	Count	RSD%	Background
7	5000	4605	2.240	32.600
89	20000	16262	1.566	32.350
205	20000	11073	2.044	34.200

Sampling Period [sec]	0.311
Integration Time [sec]	0.1

Oxide/Doubly Charged Ratio

Oxide	156 / 140 1.164 %
Doubly Charged	70 / 140 1.788 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
7	4636.57	7.00	0.66	0.80
89	16424.99	89.00	0.59	0.76
205	11065.01	205.00	0.58	0.76

Integration Time [sec]	0.1
Acquisition Time [sec]	22.74

Tune Parameters

Plasma Parameters

RF Power	1550 W	Option Gas	---	Makeup Gas	0.00 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Auxiliary Gas	0.90 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C	Plasma Gas	15.0 L/min
Nebulizer Gas	1.07 L/min				

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.2 V	Deflect	12.6 V
Extract 2	-155.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-90 V	Cell Exit	-50 V		

Performance Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

QP Bias	-3.0 V

Hardware Settings

Torch

Torch H	0.3 mm	Torch H (Hot)	---	Torch H (Cool)	---
Torch V	-0.1 mm	Torch V (Hot)	---	Torch V (Cool)	---

Plasma Correction

Nebulizer Gas Offset	0.02 L/min	Makeup Gas (Hot)	---	Makeup Gas (Cool)	---
		Sample Depth (Hot)	---		

Resolution/Axis

Mass Gain	123	Axis Gain	0.9993
Mass Offset	124	Axis Offset	-0.03

EM

Discriminator	4.2 mV	Analog HV	2694 V	Pulse HV	1366 V

Performance Report

Meter

Name	Value	Unit
Nebulizer Gas	1.07	L/min
MU./Dil. Gas	0.00	L/min
Plasma Gas	15.01	L/min
Aux Gas	0.90	L/min
Ar Gas Tank Press	7.43E+2	kPa
+5V (Press Gage)	5.0	V
Ar AMFC Temp	27.5	°C
Nebulizer Gas(DP)	6.24E+0	kPa
MU./Dil. Gas(DP)	-1.70E-1	kPa
Aux Gas(DP)	1.23E+1	kPa
Plasma Gas(DP)	1.11E+1	kPa
Nebulizer Gas(BP)	3.41E+2	kPa
MU./Dil. Gas(BP)	-3.70E+0	kPa
Aux Gas(BP)	5.80E+1	kPa
Plasma Gas(BP)	3.94E+1	kPa
S/C Temp (H)	16.1	°C
S/C Temp (L)	1.9	°C
Peltier Voltage	2.1	V
IF/BK Press	2.38E+2	Pa
Analyzer Press	7.09E-5	Pa
IG HV	178	V
IG Emission	4.98	µA
TMP Revolution	100.0	%
TMP Rev (RAW)	100.2	%
TMP Current	2.48	A
PWR AMP Drain I	0.2	A
PWR AMP Bias	4.12	V
OctP RF (Avg)	193.5	V
OctP RF Set	3.7	V
OctP FET Bias Set	3.75	V
OctP RF(+)	167.7	V
OctP RF(-)	219.4	V
OctP Bias	-8.0	V
Cell Temp.	65.0	°C
Cell Heater Volt.	4.5	V
+U Voltage	411.1	V

Name	Value	Unit
-U Voltage	-416.1	V
V Voltage	1792.9	V
QPRF Fader	1.2	V
Pickup Temp	55.0	°C
PWR Amp Temp	0.1	V
+600V	608.6	V
-120V	-130.7	V
-720V	-738.4	V
Prefilter Bias	-5.13	V
Pickup Heater I	0.09	A
QP PS +48V	47.5	V
QP PS +48V I	0.00	A
Analog HV	-2698	V
Pulse HV	1378	V
EM Gate	-27.0	V
Pulse Gate	264.4	V
EM Entrance	0.2	V
EM HV Gain	-1360.6	V
Inner Pole	-300.3	V
Outer Pole	20.0	V
Analog -5V	-5.1	V
Analog +15V	14.5	V
Analog -15V	-14.4	V
Analog +5V	5.2	V
Shunt C Pos	1.2	V
Drain Volt.(max)	62.3	V
RF PS +48V	47.1	V
Forward Power	1549	W
Reflected Power	5	W
Plasma Freq.	26.69	MHz
Drain I 1	11.28	A
Drain I 2	10.84	A
Drain I 3	10.72	A
Drain I 4	10.08	A
Temp Sensor	2.8	V
Driver I	5.94	A

Name	Value	Unit
Igniter	0.1	V
Driver Voltage Set	6.5	V
Unbalance Current	0.44	A
PWM Threshold Set	0.2	V
Driver Voltage	5.1	V
PWM Threshold	0.2	V
Phase Detector	0.0	mV
H2 Gas	0.00	mL/min
He Gas	0.01	mL/min
H2 Gas Press	1.70E+2	kPa
He Gas Press	1.56E+0	kPa
ORS AMFC Temp	27.2	°C
Atmospheric Press	1.01E+2	kPa
Extract 1	-0.1	V
Extract 2	-155.2	V
Omega Bias	-90.1	V
Omega Lens	8.0	V
Cell Entrance	-30.0	V
Cell Exit	-50.2	V
Deflect	12.5	V
Plate Bias	-35.0	V
HV+530V	523	V
HV+240V	237	V
HV-360V	-357	V
Inlet Temp	27.2	°C
Internal Temp	33.5	°C
+24V	23.6	V
Water Temp	18.0	°C
Water RF/WC/IF	1.43	L/min
ISIS 3 Pump Speed	0.0	%
Valve Position		
Tune/ISTD Valve		

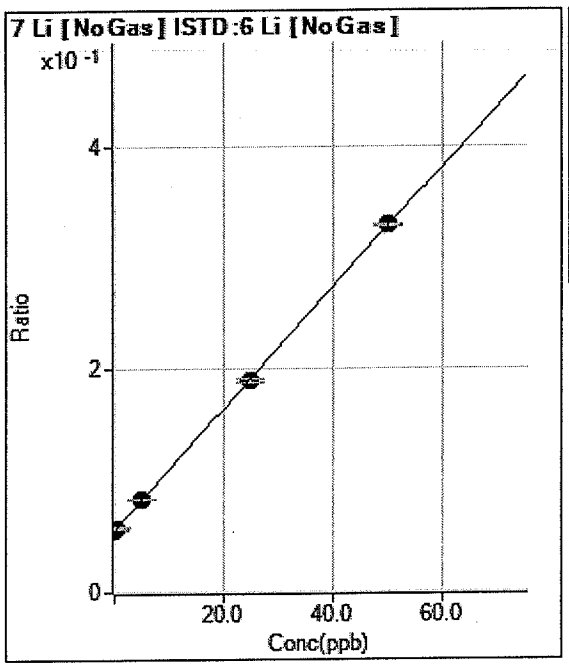
Performance Report History

Sensitivity

Calibration for H6K19116.d

Batch Folder: D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b\
Analysis File: IH6K19.batch.bin
DA Date-Time: 2021-11-18 16:35:51
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

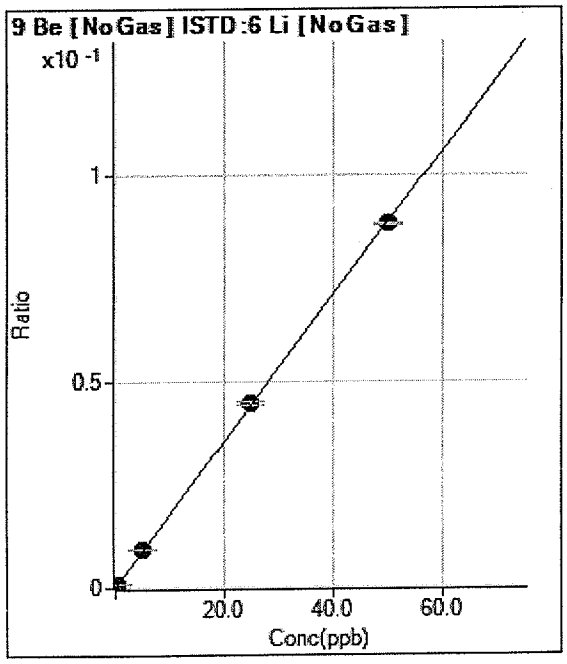
Level	Standard Data File	Sample Name	Acq. Date-Time
1	H6K19003.d	S0	2021-11-18 10:28:26
2	H6K19004.d	S1	2021-11-18 10:31:17
3	H6K19005.d	S2	2021-11-18 10:34:08
4	H6K19006.d	S3	2021-11-18 10:37:32
5	H6K19007.d	S4	2021-11-18 10:40:22



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	69173.53	0.0560	P	1.5
2	☐	0.500	0.427	72324.87	0.0583	P	0.7
3	☐	5.000	5.102	101564.06	0.0838	P	0.4
4	☐	25.000	24.569	229269.45	0.1898	P	2.1
5	☐	50.000	50.206	400666.67	0.3294	P	0.5

y = 0.0054 * x + 0.0560
R = 0.9999
DL = 0.4771
BEC = 10.29

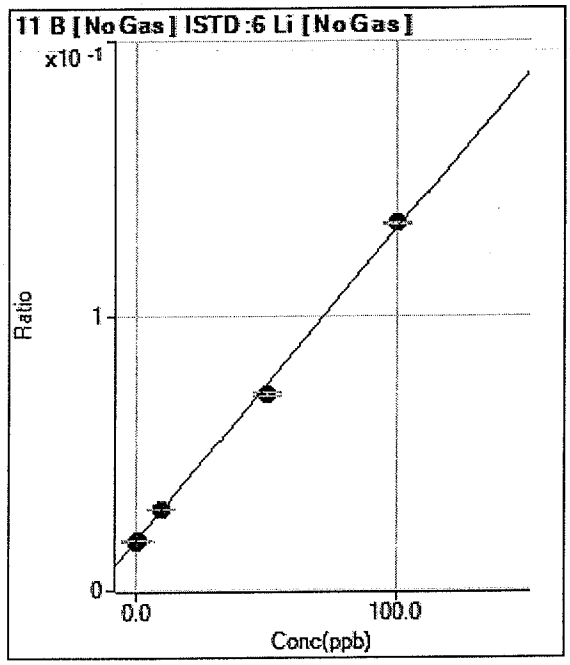
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	85.56	0.0001	P	25.1
2	☐	0.500	0.511	1204.50	0.0010	P	1.7
3	☐	5.000	5.252	11329.00	0.0093	P	1.0
4	☐	25.000	25.403	54293.20	0.0449	P	2.0
5	☐	50.000	49.773	107039.56	0.0880	P	0.9

y = 0.0018 * x + 6.9296E-005
R = 0.9999
DL = 0.02958
BEC = 0.03923

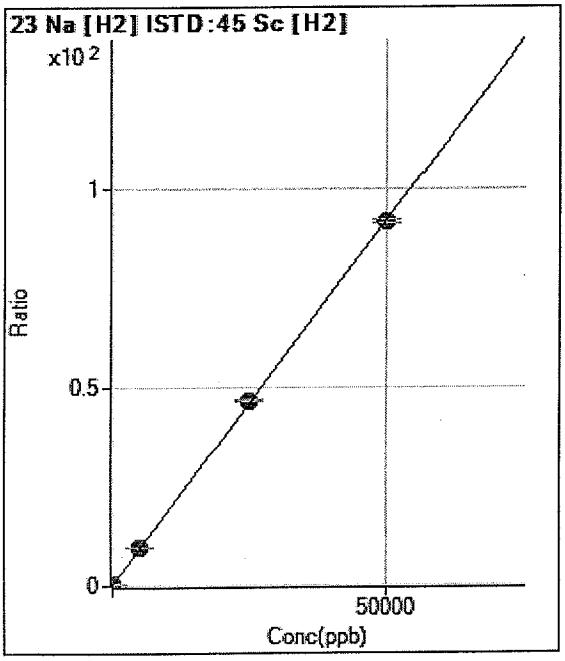
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	22221.98	0.0180	P	0.8
2	☐	0.500	0.218	22613.72	0.0182	P	1.4
3	☐	10.000	10.187	35843.38	0.0296	P	0.6
4	☐	50.000	46.984	86251.10	0.0714	P	1.1
5	☐	100.000	101.491	162194.51	0.1333	P	0.8

y = 0.0011 * x + 0.0180
R = 0.9993
DL = 0.3833
BEC = 15.84

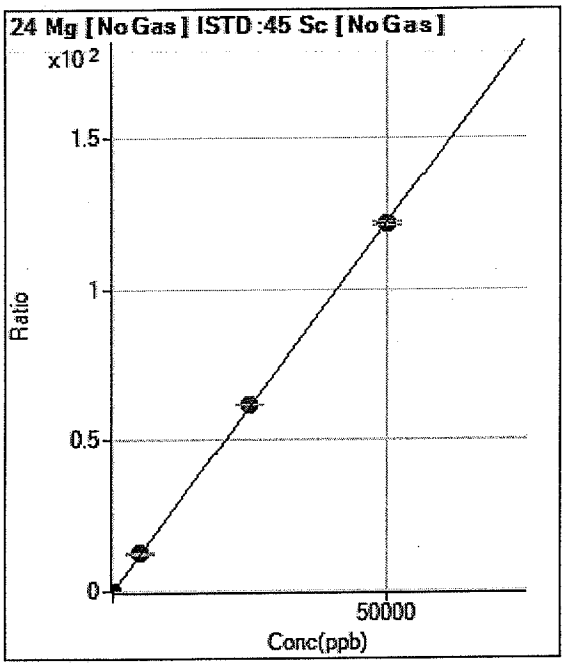
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	556601.00	0.1927	P	0.5
2	☐	50.000	59.059	875474.27	0.3009	A	0.8
3	☐	5000.000	5084.506	27672075.33	9.5069	A	0.7
4	☐	25000.000	25366.997	134582885.33	46.6619	A	1.3
5	☐	50000.000	49808.042	265605466.67	91.4350	A	1.1

y = 0.0018 * x + 0.1927
R = 1.0000
DL = 1.436
BEC = 105.2

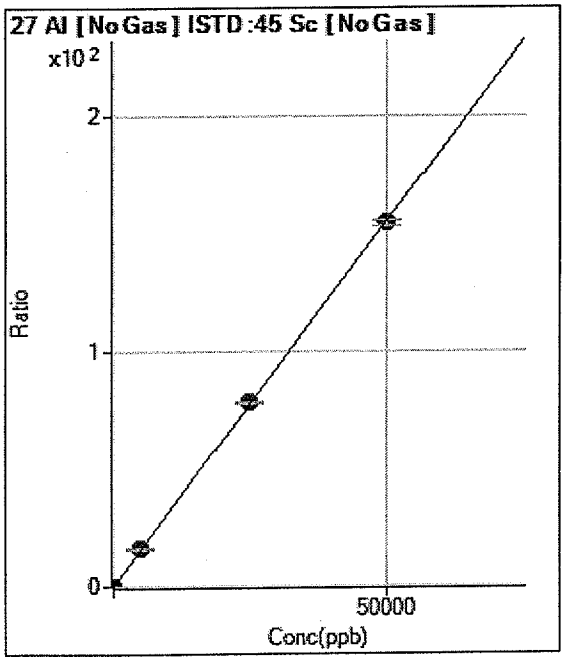
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	34405.02	0.0086	P	1.7
2	☐	50.000	49.396	519139.83	0.1290	P	2.0
3	☐	5000.000	5157.939	50361433.33	12.5834	A	1.6
4	☐	25000.000	25331.222	246648517.33	61.7650	A	0.4
5	☐	50000.000	49818.596	491189856.00	121.4640	A	1.2

y = 0.0024 * x + 0.0086
R = 1.0000
DL = 0.1785
BEC = 3.537

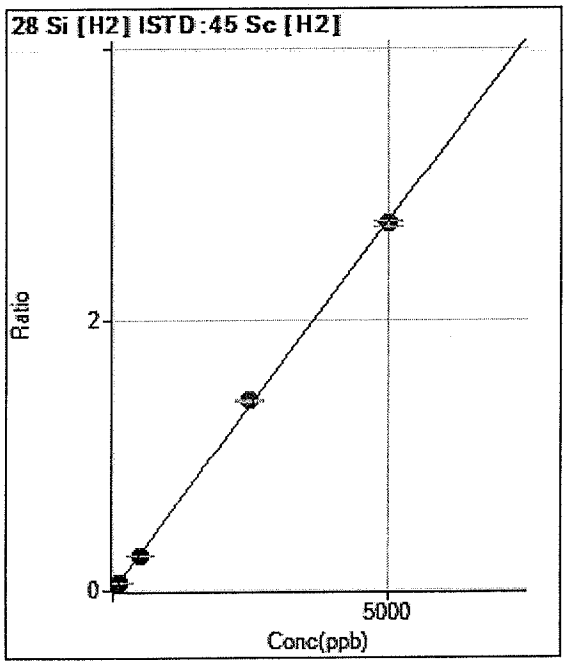
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17924.92	0.0045	P	3.4
2	☐	50.000	51.034	655166.98	0.1629	P	1.6
3	☐	5000.000	5175.551	64299477.37	16.0653	A	1.5
4	☐	25000.000	25278.472	313257162.00	78.4488	A	1.4
5	☐	50000.000	49843.208	625522190.68	154.6783	A	1.8

y = 0.0031 * x + 0.0045
R = 1.0000
DL = 0.1494
BEC = 1.448

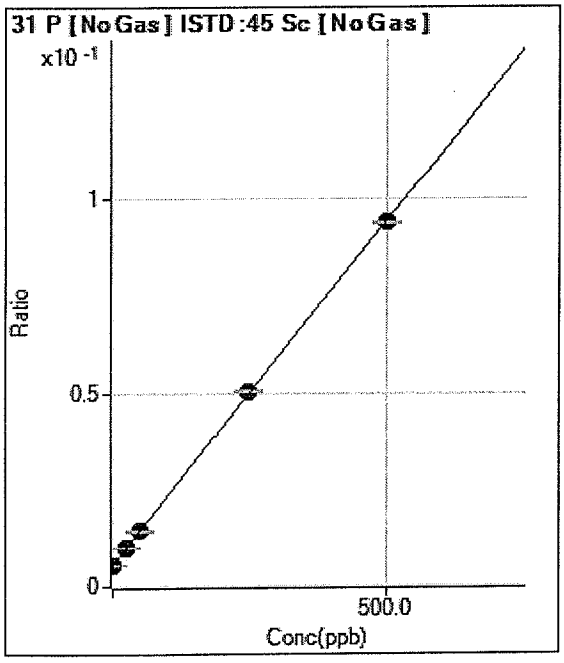
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	8253.13	0.0029	P	2.9
2	☐	100.000	91.730	153585.40	0.0528	P	0.9
3	☐	500.000	460.979	738522.77	0.2537	P	1.5
4	☐	2500.000	2568.300	4039671.92	1.4006	A	0.3
5	☐	5000.000	4969.918	7864784.17	2.7076	A	1.7

y = 5.4422E-004 * x + 0.0029
R = 0.9998
DL = 0.4539
BEC = 5.249

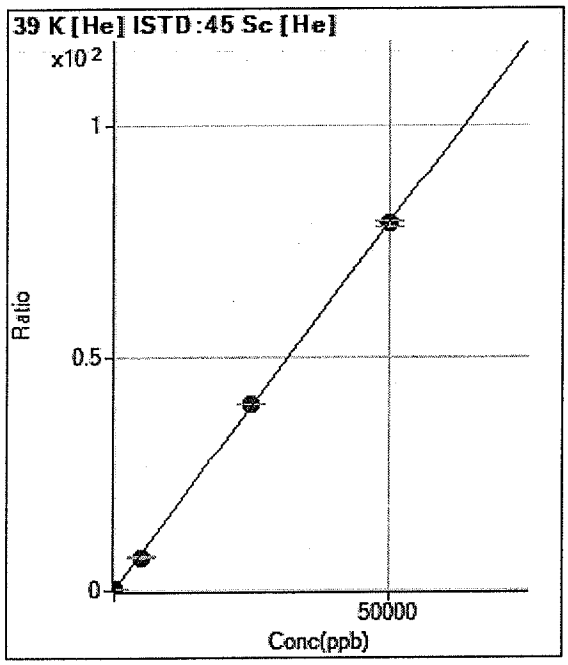
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21391.79	0.0054	P	1.3
2	☐	25.000	25.477	39798.24	0.0099	P	2.1
3	☐	50.000	49.701	56839.93	0.0142	P	1.0
4	☐	250.000	253.461	201416.56	0.0504	P	1.0
5	☐	500.000	498.276	380050.15	0.0940	P	0.5

y = 1.7785E-004 * x + 0.0054
R = 1.0000
DL = 1.199
BEC = 30.15

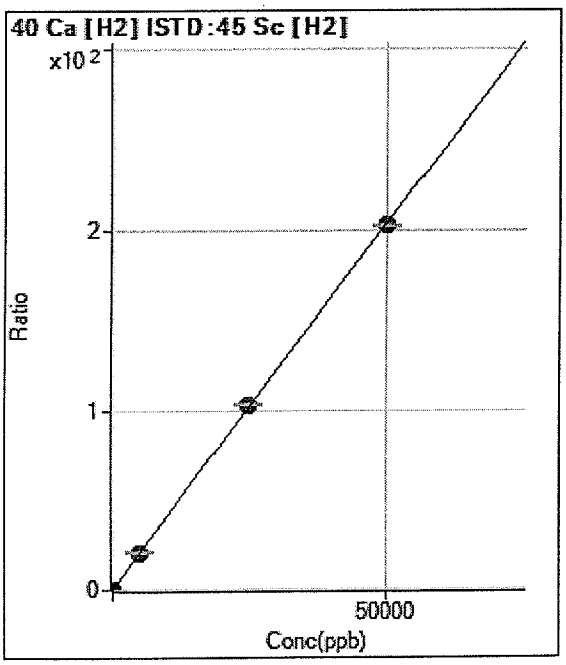
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	105119.21	0.2164	P	3.0
2	☐	50.000	49.605	146117.58	0.2945	P	1.9
3	☐	5000.000	4449.988	3567864.92	7.2265	A	5.3
4	☐	25000.000	25327.573	19710218.67	40.1153	A	0.6
5	☐	50000.000	49891.215	38813592.00	78.8109	A	1.3

y = 0.0016 * x + 0.2164
R = 0.9999
DL = 12.25
BEC = 137.3

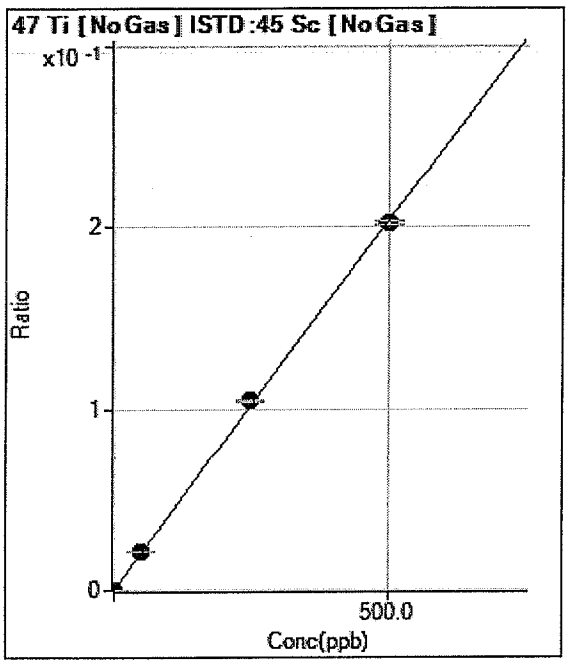
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	87750.93	0.0304	P	0.8
2	☐	50.000	44.723	617600.85	0.2122	P	1.0
3	☐	5000.000	5096.430	60410730.67	20.7548	A	2.1
4	☐	25000.000	25443.529	298501152.00	103.4955	A	1.0
5	☐	50000.000	49768.598	588011029.33	202.4125	A	0.6

y = 0.0041 * x + 0.0304
R = 0.9999
DL = 0.1704
BEC = 7.469

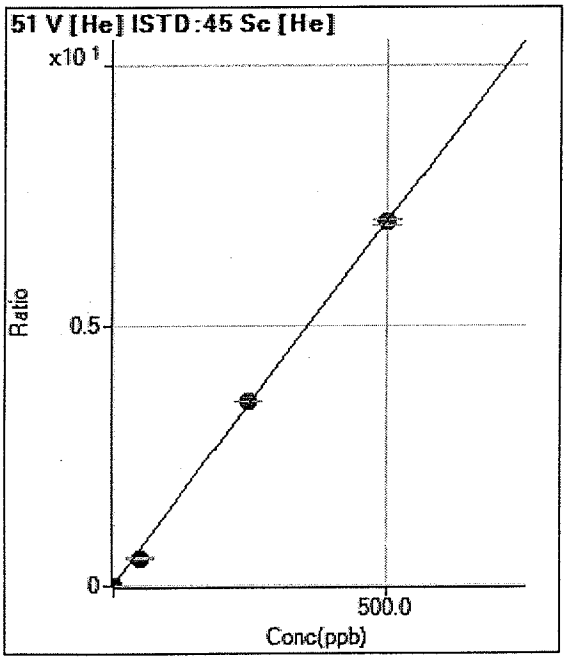
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	151.33	0.0000	P	5.3
2	☐	0.500	0.558	1064.71	0.0003	P	3.9
3	☐	50.000	51.744	84326.88	0.0211	P	1.2
4	☐	250.000	256.777	416907.83	0.1044	P	1.6
5	☐	500.000	496.437	816115.88	0.2018	P	1.1

y = 4.0644E-004 * x + 3.7932E-005
R = 0.9999
DL = 0.01497
BEC = 0.09333

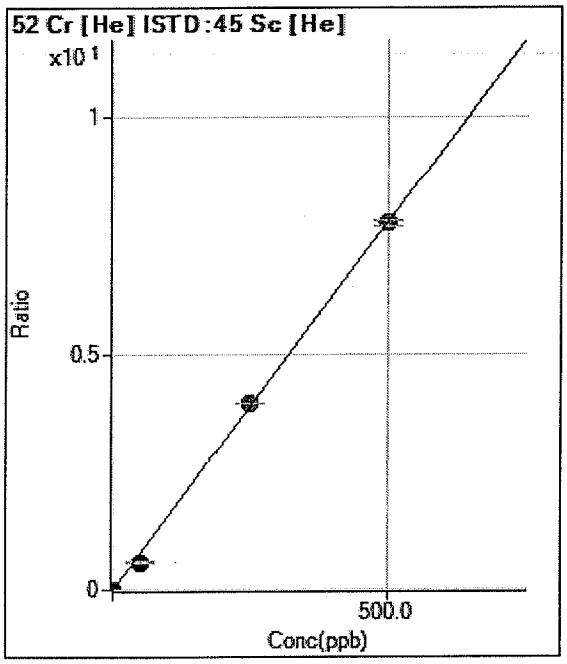
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3925.23	0.0081	P	2.6
2	☐	0.500	0.503	7502.05	0.0151	P	2.5
3	☐	50.000	36.920	259202.81	0.5249	P	8.3
4	☐	250.000	253.731	1749311.04	3.5602	A	0.3
5	☐	500.000	499.442	3447423.58	7.0000	A	1.5

y = 0.0140 * x + 0.0081
R = 0.9996
DL = 0.04478
BEC = 0.5771

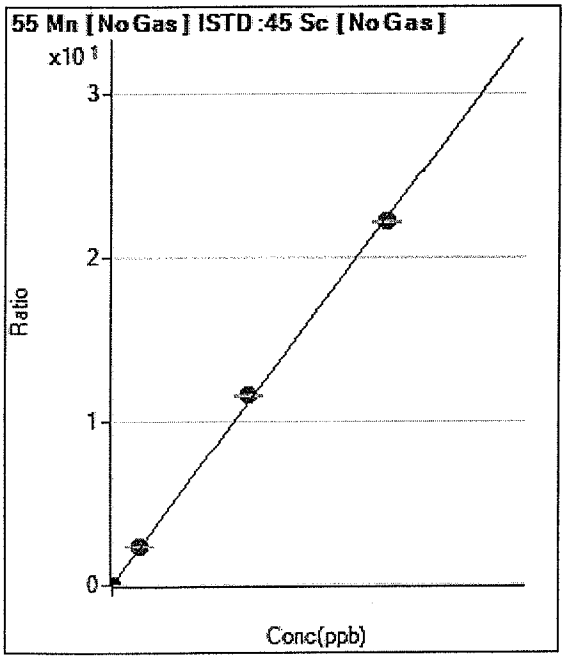
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1670.77	0.0034	P	1.3
2	☐	0.500	0.523	5744.54	0.0116	P	1.7
3	☐	50.000	37.909	292822.30	0.5930	P	8.5
4	☐	250.000	254.143	1943766.67	3.9560	A	0.3
5	☐	500.000	499.138	3824788.17	7.7663	A	1.6

y = 0.0156 * x + 0.0034
R = 0.9996
DL = 0.008501
BEC = 0.2211

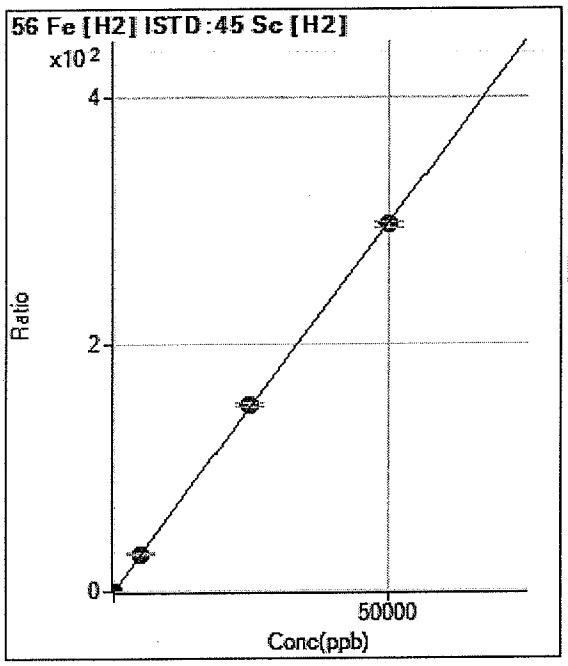
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	12039.97	0.0030	P	1.6
2	☐	0.500	0.483	26624.53	0.0066	P	0.2
3	☐	300.000	318.283	9507281.67	2.3754	A	1.1
4	☐	1500.000	1551.845	46205285.33	11.5699	A	1.2
5	☐	3000.000	2972.249	89602133.33	22.1571	A	0.7

y = 0.0075 * x + 0.0030
R = 0.9998
DL = 0.01908
BEC = 0.4049

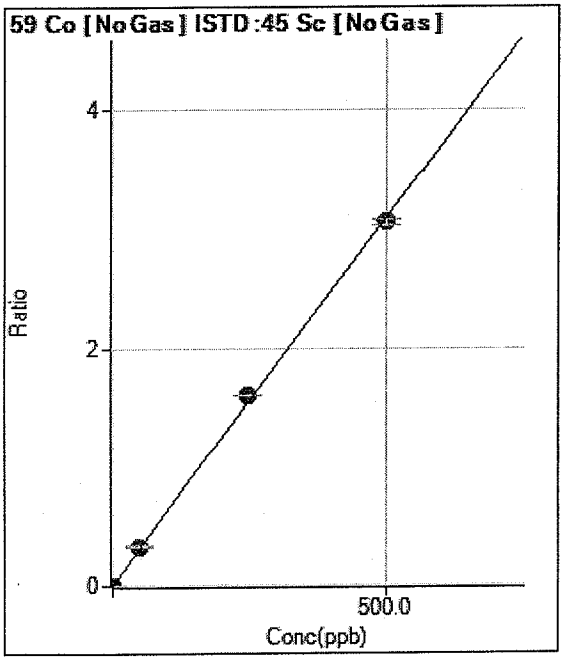
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27635.88	0.0096	P	0.7
2	☐	50.000	49.242	882521.63	0.3033	P	0.7
3	☐	5000.000	5096.302	88501018.67	30.4070	A	2.9
4	☐	25000.000	25367.346	436415776.00	151.3157	A	1.3
5	☐	50000.000	49806.698	862962261.33	297.0868	A	1.5

y = 0.0060 * x + 0.0096
R = 1.0000
DL = 0.03558
BEC = 1.604

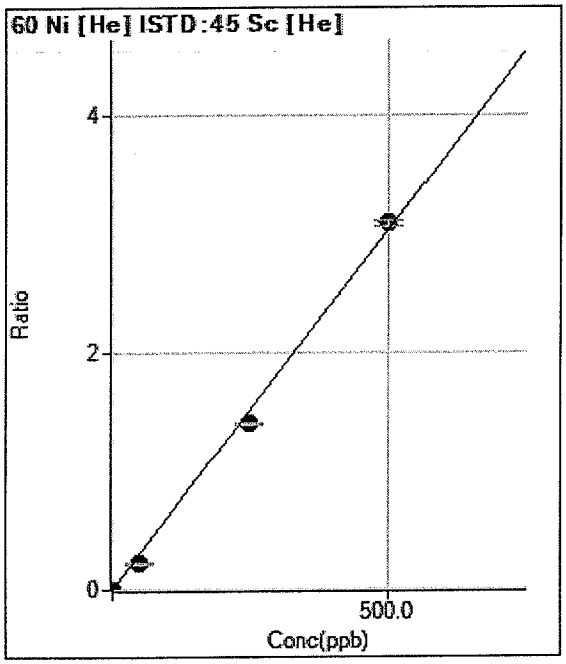
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	565.34	0.0001	P	1.5
2	☐	0.500	0.503	13094.28	0.0033	P	1.6
3	☐	50.000	53.295	1319976.96	0.3298	A	1.8
4	☐	250.000	259.732	6416369.17	1.6068	A	0.8
5	☐	500.000	494.804	12378097.00	3.0609	A	1.7

y = 0.0062 * x + 1.4171E-004
R = 0.9997
DL = 0.0009971
BEC = 0.02291

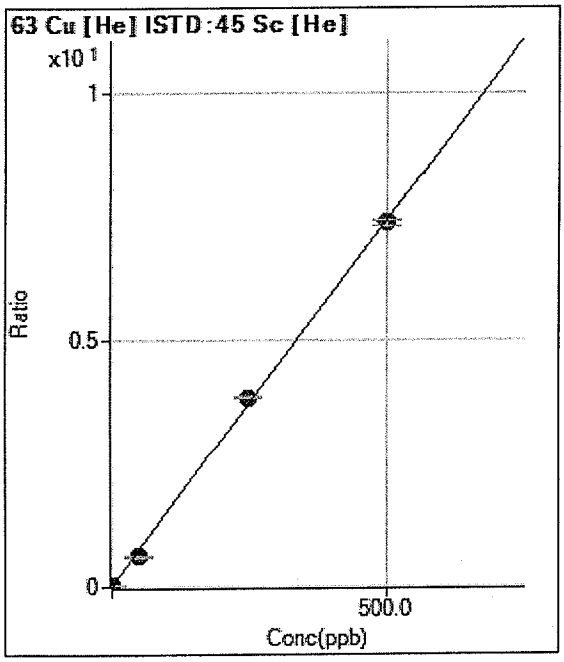
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	192.00	0.0004	P	15.2
2	☐	0.500	0.528	1780.78	0.0036	P	1.5
3	☐	50.000	36.947	110610.87	0.2240	P	8.5
4	☐	250.000	231.789	689473.94	1.4033	P	0.6
5	☐	500.000	510.411	1521562.87	3.0896	A	1.5

y = 0.0061 * x + 3.9488E-004
R = 0.9988
DL = 0.02968
BEC = 0.06524

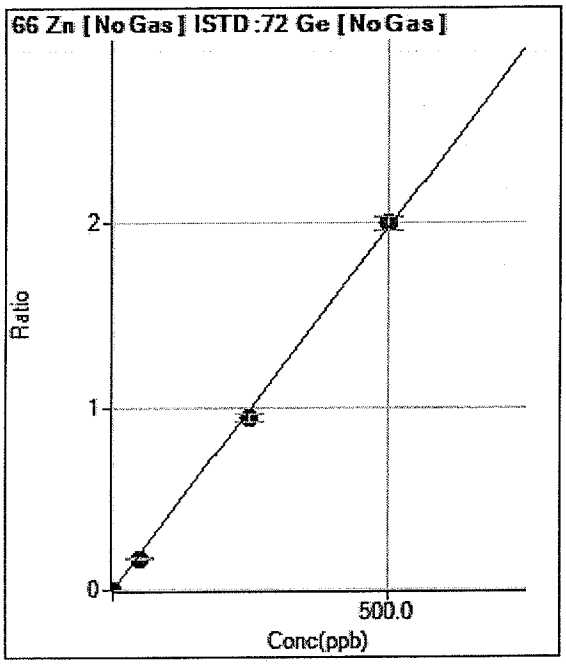
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	8648.08	0.0178	P	1.1
2	☐	0.500	0.419	11905.20	0.0240	P	1.6
3	☐	50.000	40.111	301989.81	0.6116	P	7.0
4	☐	250.000	258.286	1887554.63	3.8416	A	0.5
5	☐	500.000	496.846	3631278.42	7.3733	A	1.3

y = 0.0148 * x + 0.0178
R = 0.9996
DL = 0.03905
BEC = 1.202

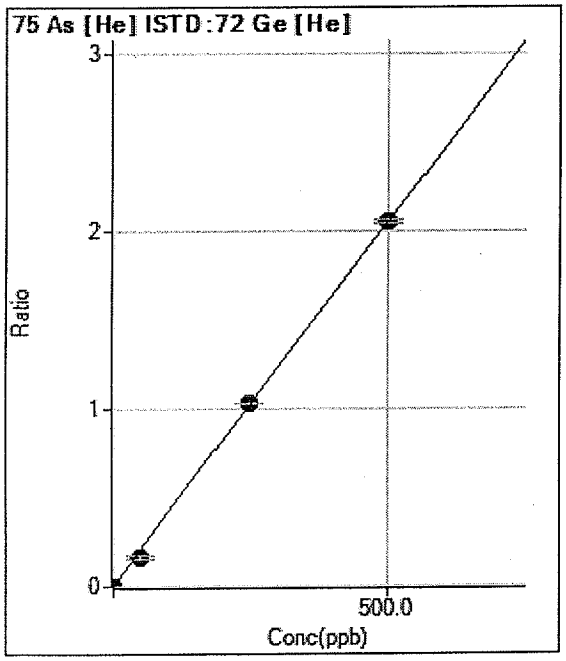
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1149.38	0.0011	P	7.7
2	☐	1.000	0.998	5383.07	0.0050	P	4.4
3	☐	50.000	43.817	198998.63	0.1739	P	1.2
4	☐	250.000	238.105	1031255.75	0.9400	P	4.5
5	☐	500.000	506.566	2132118.75	1.9986	A	3.5

y = 0.0039 * x + 0.0011
R = 0.9995
DL = 0.0647
BEC = 0.2784

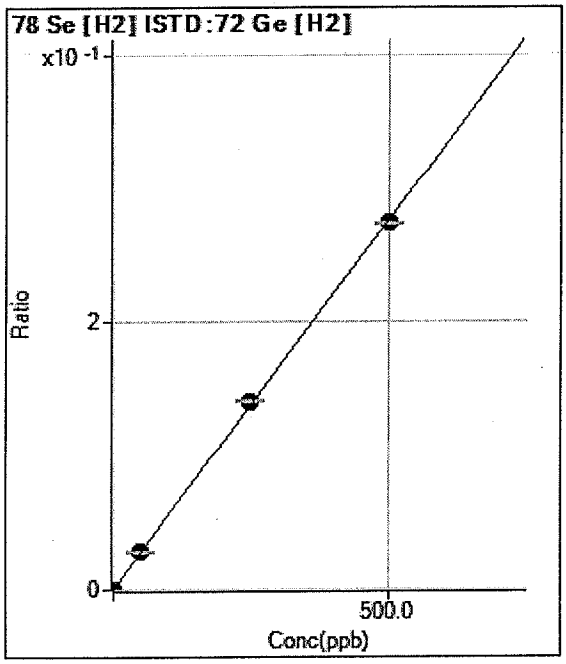
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	304.33	0.0010	P	5.6
2	☐	0.500	0.557	1046.71	0.0033	P	1.2
3	☐	50.000	39.583	52609.95	0.1633	P	8.0
4	☐	250.000	251.021	328895.92	1.0303	P	0.2
5	☐	500.000	500.531	654209.60	2.0534	P	1.2

y = 0.0041 * x + 9.7474E-004
R = 0.9998
DL = 0.0402
BEC = 0.2377

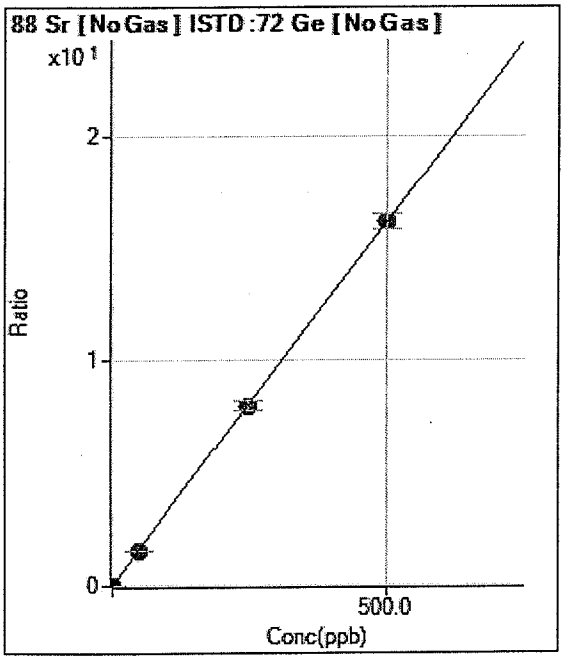
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	113.33	0.0001	P	12.4
2	☐	0.500	0.524	358.34	0.0004	P	6.2
3	☐	50.000	51.350	23720.84	0.0285	P	1.0
4	☐	250.000	256.514	116255.66	0.1417	P	0.8
5	☐	500.000	496.608	226467.37	0.2743	P	0.8

y = 5.5205E-004 * x + 1.3996E-004
R = 0.9999
DL = 0.09415
BEC = 0.2535

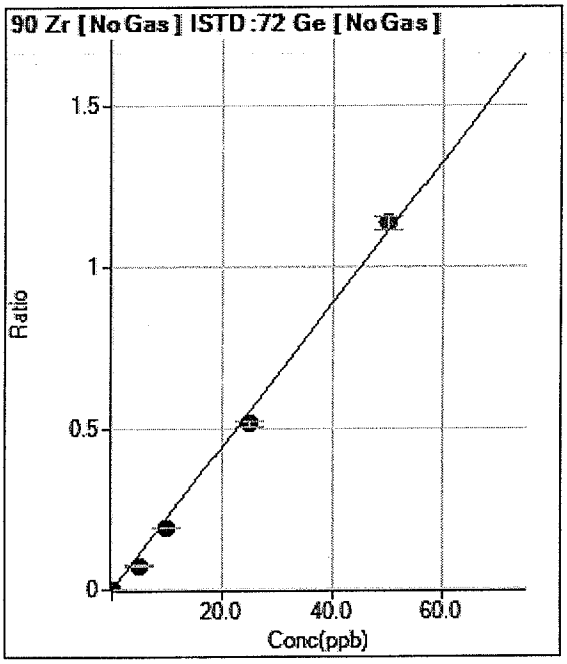
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2429.11	0.0023	P	7.5
2	☐	0.500	0.478	18958.98	0.0177	P	7.2
3	☐	50.000	48.766	1804133.19	1.5764	A	0.6
4	☐	250.000	248.165	8790110.48	8.0125	A	4.5
5	☐	500.000	501.041	17252415.43	16.1748	A	4.3

y = 0.0323 * x + 0.0023
R = 1.0000
DL = 0.01607
BEC = 0.07182

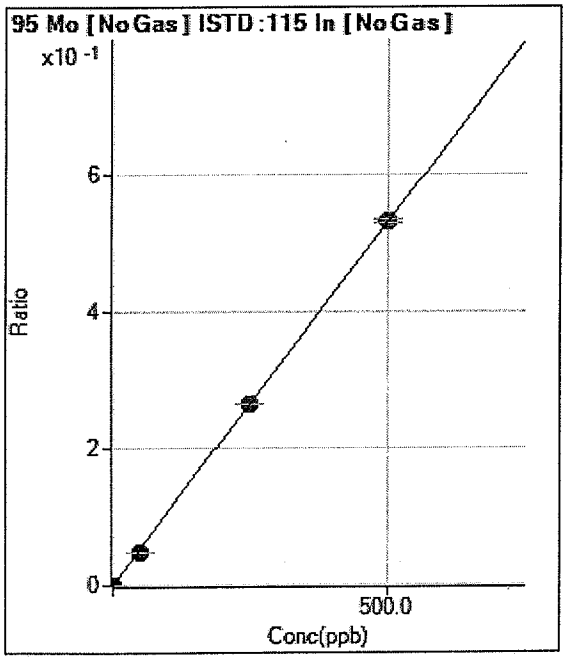
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	190.00	0.0002	P	7.7
2	☐	5.000	3.342	79270.93	0.0742	P	6.6
3	☐	10.000	8.773	222545.08	0.1945	P	0.3
4	☐	25.000	23.323	566926.62	0.5166	P	3.6
5	☐	50.000	51.249	1211145.74	1.1350	A	3.4

y = 0.0221 * x + 1.8097E-004
R = 0.9988
DL = 0.00188
BEC = 0.008173

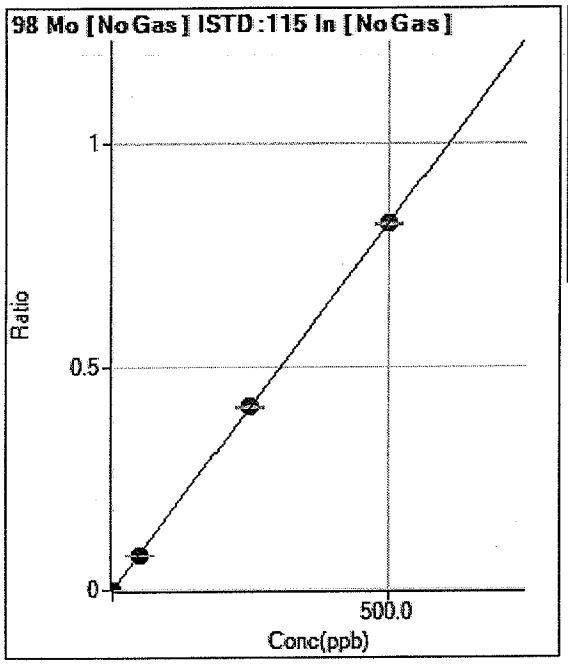
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	200.00	0.0000	P	7.3
2	☐	0.500	0.445	3524.91	0.0005	P	2.6
3	☐	50.000	45.389	337330.52	0.0481	P	1.1
4	☐	250.000	248.744	1803966.46	0.2636	A	0.1
5	☐	500.000	501.089	3558416.11	0.5310	A	1.1

y = 0.0011 * x + 2.8556E-005
R = 1.0000
DL = 0.005893
BEC = 0.02695

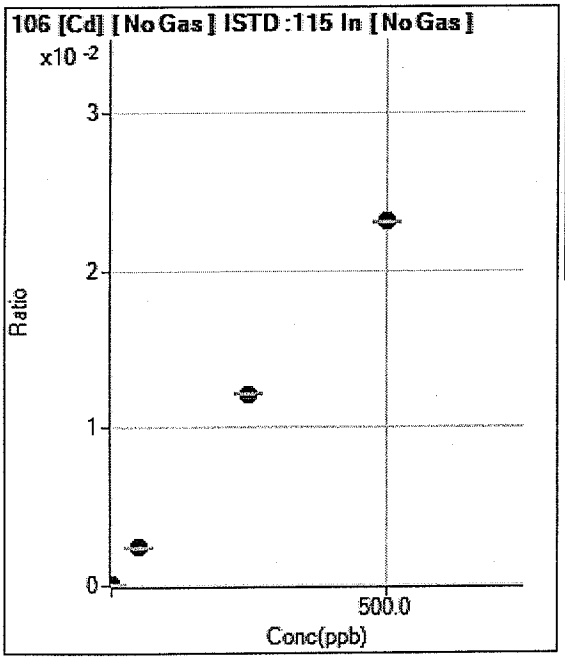
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	563.35	0.0001	P	5.5
2	☐	0.500	0.470	6001.36	0.0009	P	4.4
3	☐	50.000	47.011	542038.55	0.0773	P	0.5
4	☐	250.000	250.696	2819390.93	0.4120	A	0.9
5	☐	500.000	499.951	5505634.64	0.8216	A	0.2

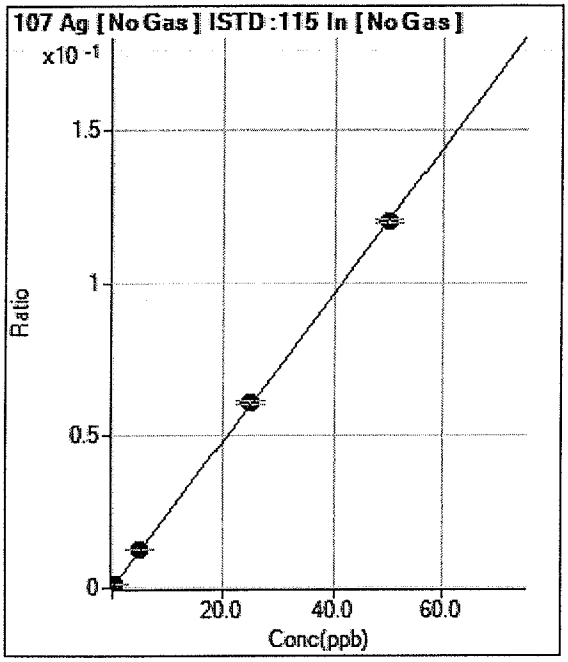
y = 0.0016 * x + 8.0404E-005
R = 1.0000
DL = 0.008017
BEC = 0.04893

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		55.67	0.0000	P	19.2
2	☐	0.500		440.68	0.0001	P	6.9
3	☐	50.000		16775.94	0.0024	P	1.5
4	☐	250.000		83138.28	0.0121	P	1.4
5	☐	500.000		154775.60	0.0231	P	0.3

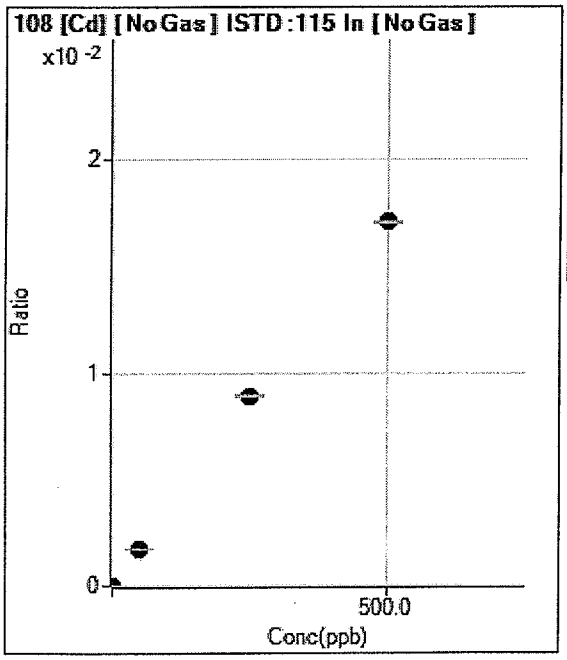
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	216.67	0.0000	P	15.7
2	☐	0.500	0.547	9495.64	0.0013	P	4.4
3	☐	5.000	5.192	87814.37	0.0125	P	2.0
4	☐	25.000	25.306	417099.83	0.0610	P	1.5
5	☐	50.000	49.827	804040.58	0.1200	P	0.9

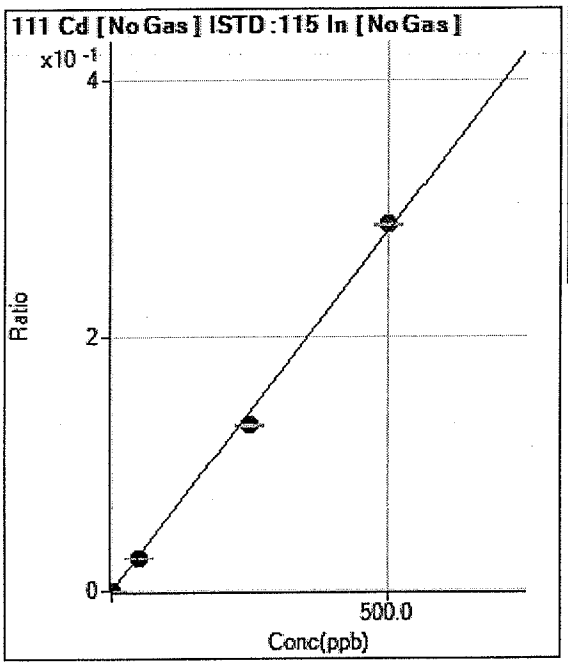
y = 0.0024 * x + 3.0908E-005
R = 1.0000
DL = 0.006046
BEC = 0.01284

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		68.67	0.0000	P	7.6
2	☐	0.500		250.00	0.0000	P	5.6
3	☐	50.000		12249.00	0.0017	P	1.8
4	☐	250.000		61004.43	0.0089	P	0.7
5	☐	500.000		114657.50	0.0171	P	0.5

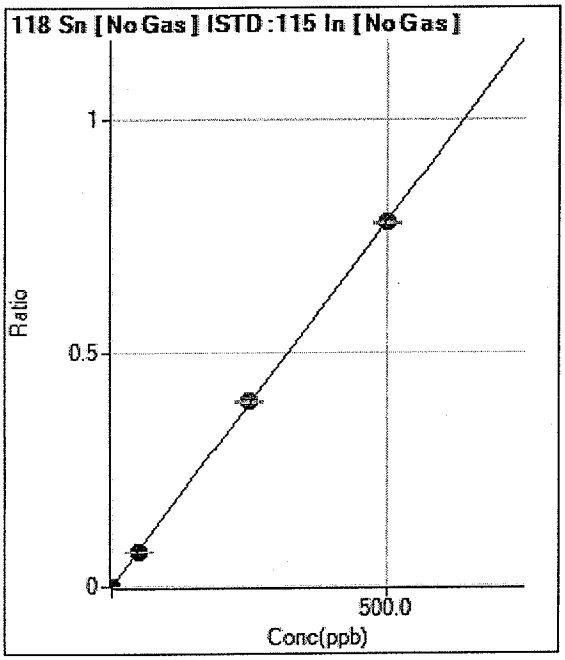
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	150.19	0.0000	P	7.9
2	☐	0.500	0.454	1952.22	0.0003	P	3.4
3	☐	50.000	44.905	177357.79	0.0253	P	0.7
4	☐	250.000	231.539	892103.43	0.1304	P	0.9
5	☐	500.000	509.740	1923138.85	0.2870	A	0.7

y = 5.6295E-004 * x + 2.1443E-005
R = 0.9990
DL = 0.008985
BEC = 0.03809

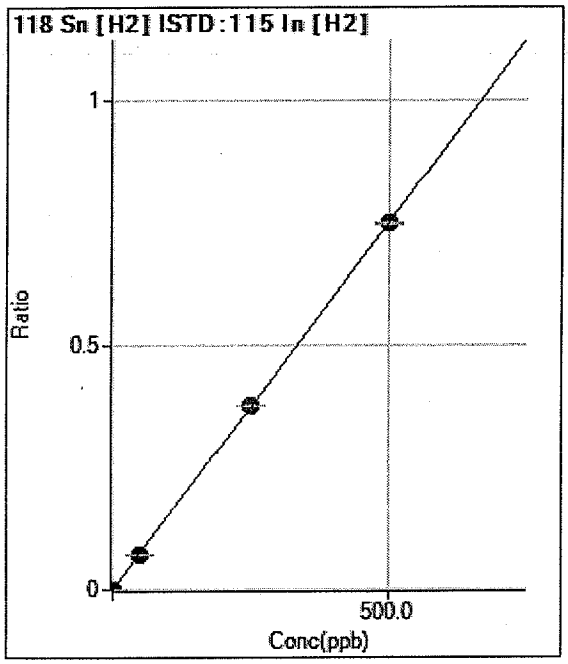
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1682.34	0.0002	P	2.2
2	☐	0.500	0.452	6663.92	0.0009	P	2.7
3	☐	50.000	46.865	514390.92	0.0734	P	0.9
4	☐	250.000	252.917	2702832.40	0.3950	A	1.1
5	☐	500.000	498.855	5219239.24	0.7788	A	0.2

y = 0.0016 * x + 2.4014E-004
R = 0.9999
DL = 0.009976
BEC = 0.1539

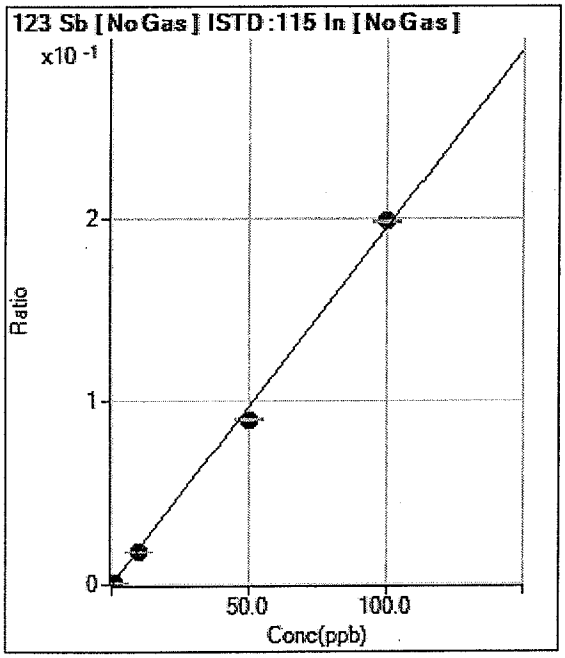
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1518.98	0.0002	P	8.0
2	☐	0.500	0.474	5963.58	0.0010	P	2.2
3	☐	50.000	47.888	449841.03	0.0720	P	3.0
4	☐	250.000	251.749	2322876.02	0.3773	A	0.5
5	☐	500.000	499.337	4552468.15	0.7482	A	0.6

y = 0.0015 * x + 2.4229E-004
R = 1.0000
DL = 0.0386
BEC = 0.1617

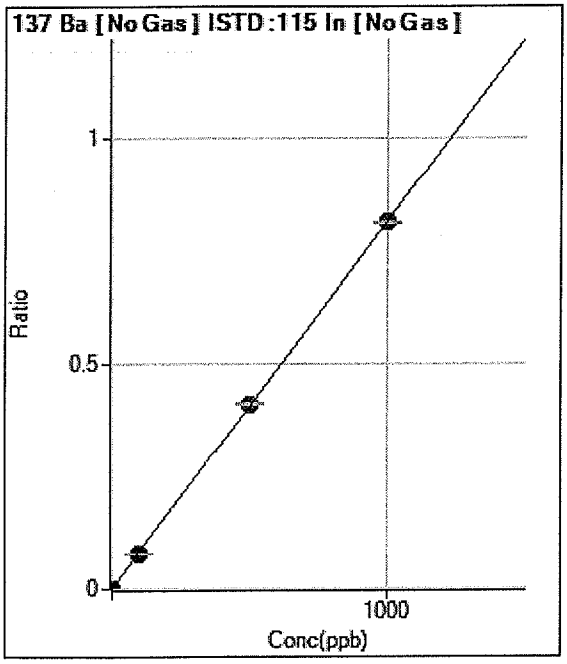
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	182.22	0.0000	P	1.3
2	☐	0.500	0.458	6460.48	0.0009	P	1.7
3	☐	10.000	9.039	123443.16	0.0176	P	1.1
4	☐	50.000	46.196	615166.25	0.0899	P	1.0
5	☐	100.000	101.999	1329921.96	0.1985	A	0.8

y = 0.0019 * x + 2.6010E-005
R = 0.9989
DL = 0.0005142
BEC = 0.01337

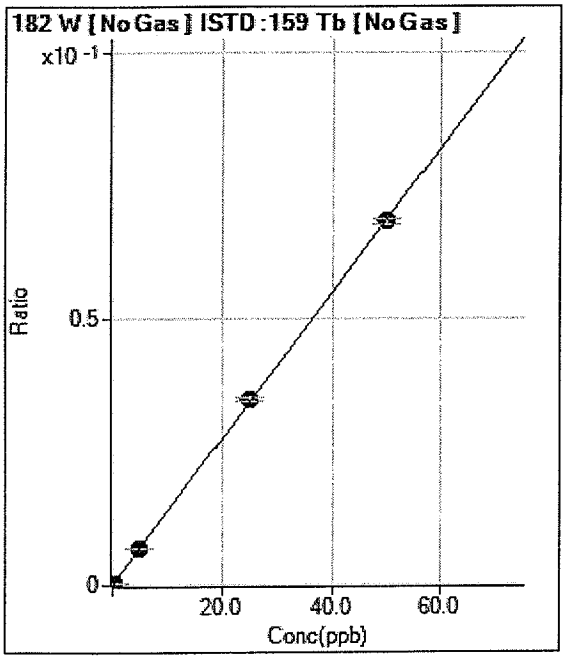
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	245.56	0.0000	P	9.8
2	☐	0.500	0.499	3111.49	0.0004	P	3.2
3	☐	100.000	94.671	541400.10	0.0772	P	1.3
4	☐	500.000	504.333	2814754.12	0.4113	A	0.5
5	☐	1000.000	998.366	5456178.95	0.8142	A	0.8

y = 8.1550E-004 * x + 3.5036E-005
R = 1.0000
DL = 0.01259
BEC = 0.04296

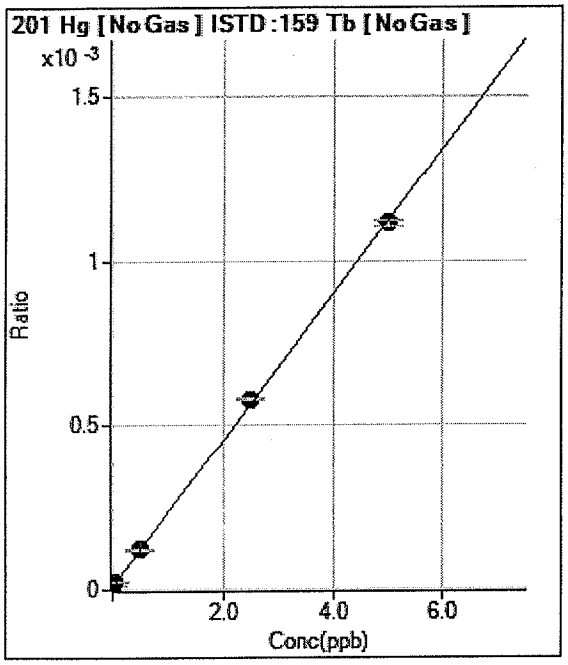
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	150.00	0.0000	P	14.5
2	☐	0.500	0.223	3043.71	0.0003	P	5.7
3	☐	5.000	5.096	66739.10	0.0070	P	0.6
4	☐	25.000	25.326	325521.25	0.0348	P	2.7
5	☐	50.000	49.830	642266.71	0.0684	P	1.7

y = 0.0014 * x + 1.5913E-005
R = 0.9999
DL = 0.005051
BEC = 0.0116

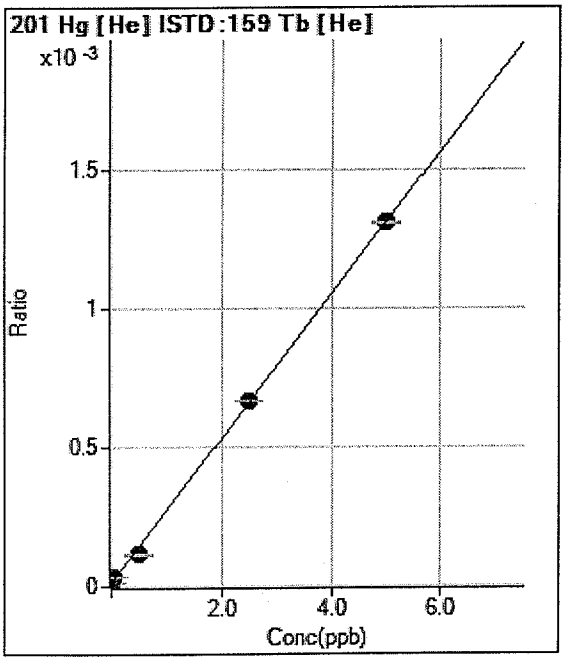
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	95.00	0.0000	P	7.8
2	☐	0.050	0.052	205.67	0.0000	P	4.4
3	☐	0.500	0.505	1165.72	0.0001	P	3.4
4	☐	2.500	2.567	5436.68	0.0006	P	1.4
5	☐	5.000	4.966	10460.20	0.0011	P	1.3

y = 2.2220E-004 * x + 1.0071E-005
R = 0.9999
DL = 0.01055
BEC = 0.04532

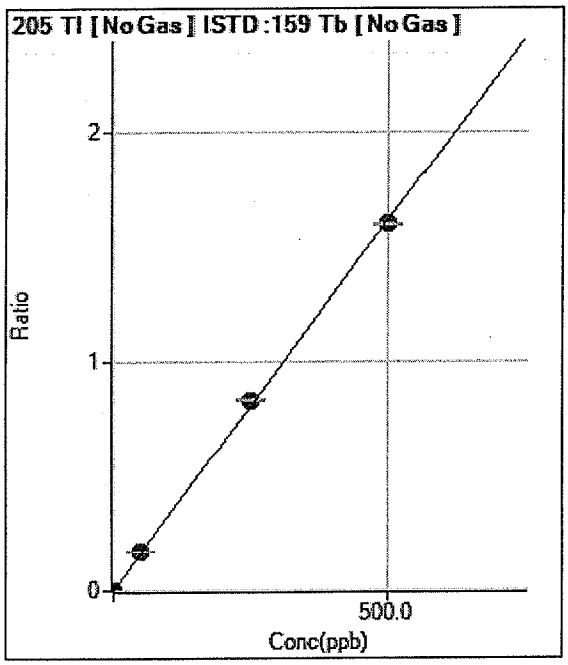
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	85.50	0.0000	P	2.8
2	☐	0.050	0.076	211.50	0.0000	P	11.1
3	☐	0.500	0.395	737.86	0.0001	P	8.3
4	☐	2.500	2.524	4211.71	0.0007	P	0.1
5	☐	5.000	4.998	8149.48	0.0013	P	0.4

y = 2.5999E-004 * x + 1.3604E-005
R = 0.9997
DL = 0.004327
BEC = 0.05232

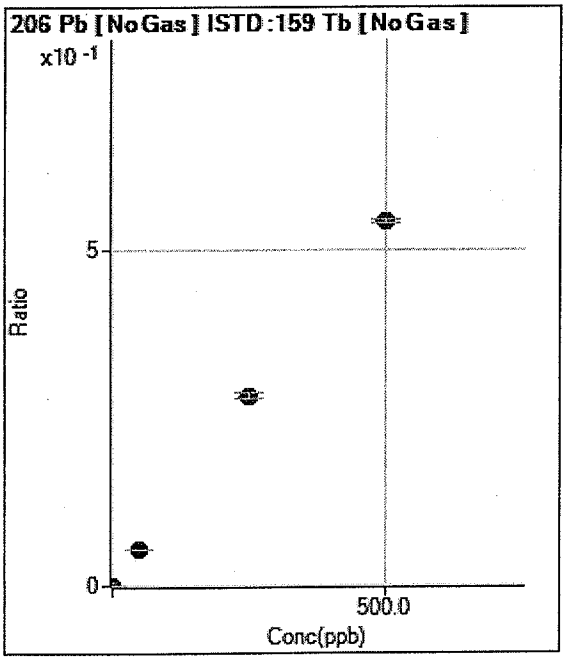
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1534.54	0.0002	P	4.5
2	☐	0.500	0.494	16644.43	0.0018	P	2.3
3	☐	50.000	52.765	1623850.21	0.1705	A	0.6
4	☐	250.000	258.592	7819547.75	0.8348	A	1.3
5	☐	500.000	495.427	15024408.29	1.5993	A	0.6

y = 0.0032 * x + 1.6266E-004
R = 0.9998
DL = 0.006842
BEC = 0.05039

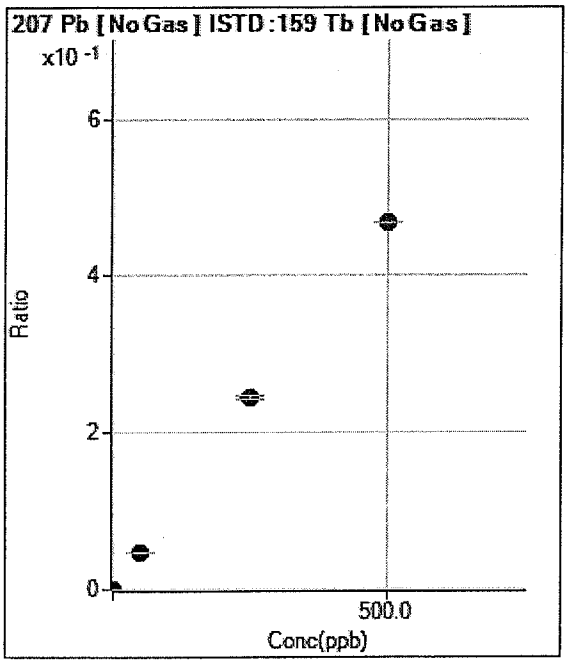
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		1270.07	0.0001	P	15.4
2	☐	0.500		6234.91	0.0007	P	3.6
3	☐	50.000		519085.71	0.0545	P	2.3
4	☐	250.000		2648836.78	0.2828	A	2.7
5	☐	500.000		5099948.36	0.5429	A	1.0

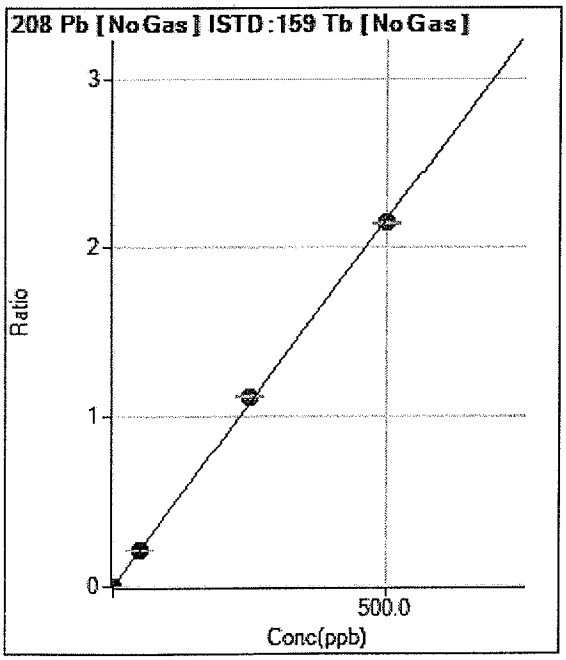
Excluded

Calibration for H6K19116.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		1080.05	0.0001	P	10.4
2	☐	0.500		5391.17	0.0006	P	4.9
3	☐	50.000		449007.24	0.0471	P	3.2
4	☐	250.000		2288318.98	0.2443	A	1.8
5	☐	500.000		4385955.45	0.4669	A	0.1

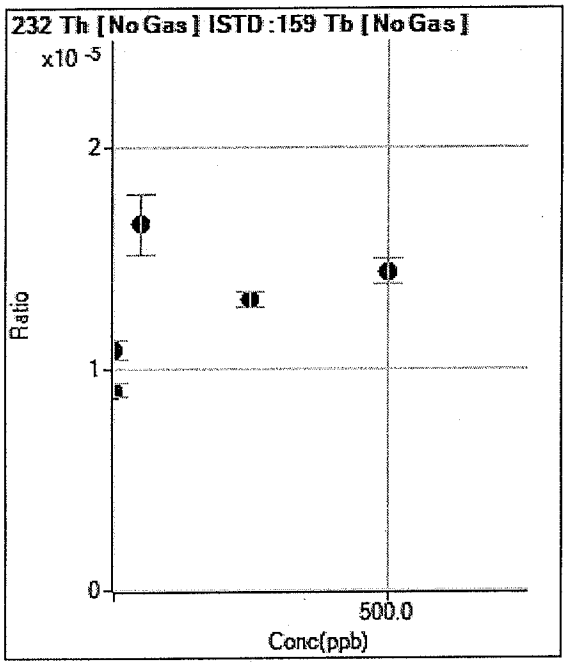
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4593.66	0.0005	P	6.9
2	☐	0.500	0.484	24464.91	0.0026	P	1.3
3	☐	50.000	49.744	2058120.13	0.2161	P	1.7
4	☐	250.000	258.375	10493067.48	1.1203	A	1.5
5	☐	500.000	495.838	20191946.17	2.1494	A	0.5

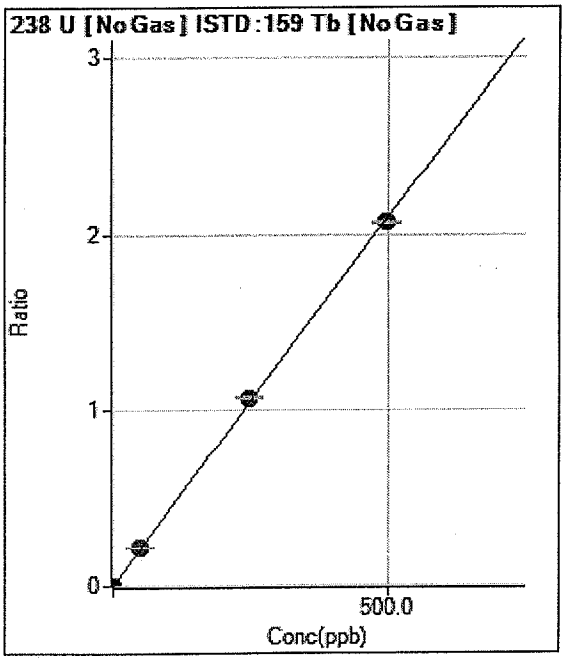
y = 0.0043 * x + 4.8694E-004
R = 0.9998
DL = 0.02314
BEC = 0.1124

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		85.56	0.0000	P	7.0
2	☐	0.500		103.33	0.0000	P	8.4
3	☐	50.000		157.78	0.0000	P	16.4
4	☐	250.000		123.33	0.0000	P	4.9
5	☐	500.000		135.56	0.0000	P	7.6

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	614.46	0.0001	P	5.3
2	☐	0.497	0.485	19856.08	0.0021	P	0.7
3	☐	49.700	51.563	2058830.54	0.2161	A	1.2
4	☐	248.300	254.360	9984309.60	1.0659	A	1.1
5	☐	497.000	493.786	19439188.12	2.0693	A	0.7

y = 0.0042 * x + 6.5109E-005

R = 0.9999

DL = 0.002452

BEC = 0.01554

Weight: <None>

Min Conc: 0

US EPA Tune Check Report

Operator Name	LYaman
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq. Date-Time	2021-11-18 09:04:15
Report Comment	---
Instrument Name	G8421A SG19253823

[No Gas]

Sensitivity

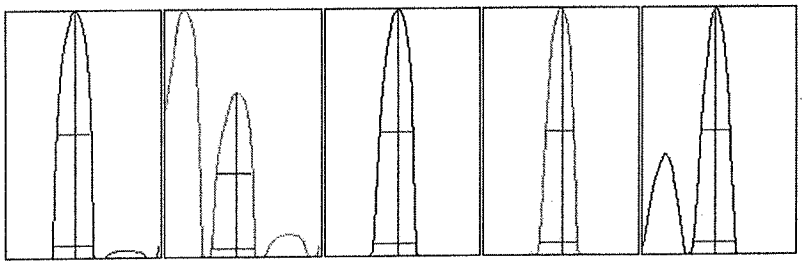
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	16598	165984.01			0.686	5.000
24	10.00	77996	779964.92			0.591	5.000
59	10.00	195978	1959778.62			0.525	5.000
115	10.00	286146	2861459.90			0.574	5.000
208	10.00	168546	1685464.12			0.541	5.000

Mass	RSD% (Flag)
9	
24	
59	
115	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	16658	16569	16643	16415	16707
24	77969	78388	78527	77630	77468
59	196393	197026	194718	196701	195052
115	284179	286109	284919	287459	288065
208	167977	167405	168734	168807	169810

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	27795.30	8.90	8.90 - 9.10	
24	128642.12	23.90	23.90 - 24.10	
59	325827.04	58.95	58.90 - 59.10	
115	543968.22	115.05	114.90 - 115.10	
208	313574.48	207.95	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.65	0.787	0.900	
24	0.67	0.831	0.900	
59	0.64	0.827	0.900	
115	0.55	0.730	0.900	
208	0.56	0.810	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	153.699999999999
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	HMI	Nebulizer Gas	0.61 L/min	Dilution Gas	0.36 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.10 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.4 V	Deflect	14.0 V
Extract 2	-170.0 V	Cell Entrance	-24 V	Plate Bias	-50 V
Omega Bias	-90 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	123	Axis Gain	0.9993	QP Bias	-3.0 V
Mass Offset	124	Axis Offset	-0.03		

Hardware Settings

Torch

Torch H	0.3 mm	Torch V	-0.1 mm		

EM

Discriminator	4.2 mV	Analog HV	2694 V	Pulse HV	1366 V

Calibration Blank Report

Sample Name	BLANK
File Name	H6K19002.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 10:25:05
Sample Type	CalBlk
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	70071.34	2.6
Be	9	6	No Gas	126.67	24.1
B	11	6	No Gas	23816.80	0.6
Na	23	45	H2	583666.04	0.4
Mg	24	45	No Gas	73778.95	8.9
Al	27	45	No Gas	60827.77	14.0
Si	28	45	H2	13054.81	1.6
P	31	45	No Gas	21800.44	0.6
K	39	45	He	105917.15	1.4
Ca	40	45	H2	156220.79	1.0
Ti	47	45	No Gas	244.67	15.7
V	51	45	He	4074.61	2.8
Cr	52	45	He	1827.46	4.0
Mn	55	45	No Gas	19202.18	7.3
Fe	56	45	H2	65124.63	2.0
Co	59	45	No Gas	1418.74	15.5
Ni	60	45	He	246.00	9.9
Cu	63	45	He	10134.44	0.8
Zn	66	72	No Gas	2317.53	1.5
As	75	72	He	372.68	2.4
Se	78	72	H2	147.67	5.3
Sr	88	72	No Gas	4078.41	8.9
Zr	90	72	No Gas	280.00	25.0
Mo	95	115	No Gas	688.91	19.3
Mo	98	115	No Gas	1386.74	10.5
[Cd]	106	115	No Gas	76.33	9.8
Ag	107	115	No Gas	327.78	5.8
[Cd]	108	115	No Gas	77.00	3.9
Cd	111	115	No Gas	384.37	13.7
Sn	118	115	No Gas	3499.36	1.4
Sn	118	115	H2	2866.99	2.5
Sb	123	115	No Gas	308.89	9.1
Ba	137	115	No Gas	644.46	16.0
W	182	159	No Gas	396.68	9.5
Hg	201	159	No Gas	129.67	12.7

Calibration Blank Report

Name	Mass	ISTD	Tune	CPS	RSD
Hg	201	159	He	96.00	4.2
Tl	205	159	No Gas	4062.90	13.2
Pb	206	159	No Gas	1936.82	4.9
Pb	207	159	No Gas	1630.11	11.7
Pb	208	159	No Gas	7367.52	6.4
Th	232	159	No Gas	98.89	20.3
U	238	159	No Gas	2170.20	10.5

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD
Li	6	No Gas	1251027.04	0.9
Sc	45	No Gas	4025857.58	0.7
Sc	45	H2	2862605.02	0.8
Sc	45	He	491519.60	1.2
Ge	72	No Gas	1026230.46	0.9
Ge	72	H2	822468.06	0.8
Ge	72	He	317375.79	0.6
In	115	No Gas	7055261.23	0.5
Tb	159	No Gas	9453509.35	0.7
Tb	159	He	6305932.00	0.5

Calibration Blank Report

Sample Name	S0
File Name	H6K19003.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 10:28:26
Sample Type	CalBlk
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	69173.53	1.8
Be	9	6	No Gas	85.56	25.0
B	11	6	No Gas	22221.98	1.0
Na	23	45	H2	556601.00	0.3
Mg	24	45	No Gas	34405.02	1.8
Al	27	45	No Gas	17924.92	3.4
Si	28	45	H2	8253.13	3.1
P	31	45	No Gas	21391.79	1.5
K	39	45	He	105119.21	2.3
Ca	40	45	H2	87750.93	1.0
Ti	47	45	No Gas	151.33	5.5
V	51	45	He	3925.23	1.9
Cr	52	45	He	1670.77	0.8
Mn	55	45	No Gas	12039.97	1.5
Fe	56	45	H2	27635.88	0.6
Co	59	45	No Gas	565.34	1.4
Ni	60	45	He	192.00	15.8
Cu	63	45	He	8648.08	0.7
Zn	66	72	No Gas	1149.38	2.3
As	75	72	He	304.33	4.5
Se	78	72	H2	113.33	12.6
Sr	88	72	No Gas	2429.11	5.0
Zr	90	72	No Gas	190.00	9.1
Mo	95	115	No Gas	200.00	6.7
Mo	98	115	No Gas	563.35	5.6
[Cd]	106	115	No Gas	55.67	18.7
Ag	107	115	No Gas	216.67	16.3
[Cd]	108	115	No Gas	68.67	7.2
Cd	111	115	No Gas	150.19	7.3
Sn	118	115	No Gas	1682.34	1.7
Sn	118	115	H2	1518.98	8.1
Sb	123	115	No Gas	182.22	1.1
Ba	137	115	No Gas	245.56	10.4
W	182	159	No Gas	150.00	13.3
Hg	201	159	No Gas	95.00	6.8

Calibration Blank Report

Name	Mass	ISTD	Tune	CPS	RSD
Hg	201	159	He	85.50	2.3
Tl	205	159	No Gas	1534.54	3.4
Pb	206	159	No Gas	1270.07	14.2
Pb	207	159	No Gas	1080.05	11.2
Pb	208	159	No Gas	4593.66	6.0
Th	232	159	No Gas	85.56	6.0
U	238	159	No Gas	614.46	5.4

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD
Li	6	No Gas	1234786.94	0.4
Sc	45	No Gas	3989396.83	0.2
Sc	45	H2	2888959.83	0.3
Sc	45	He	485899.94	0.7
Ge	72	No Gas	1050102.08	6.0
Ge	72	H2	809599.92	0.4
Ge	72	He	312361.44	1.2
In	115	No Gas	7006089.05	0.6
Tb	159	No Gas	9437591.85	1.3
Tb	159	He	6285791.50	1.0

Calibration Standard Report

Sample Name	S1
File Name	H6K19004.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\H6K19.b
Acq Time	2021-11-18 10:31:17
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	72324.87	1.2
Be	9	6	No Gas	1204.50	1.0
B	11	6	No Gas	22613.72	1.0
Na	23	45	H2	875474.27	0.5
Mg	24	45	No Gas	519139.83	1.5
Al	27	45	No Gas	655166.98	1.0
Si	28	45	H2	153585.40	1.0
P	31	45	No Gas	39798.24	1.7
K	39	45	He	146117.58	1.7
Ca	40	45	H2	617600.85	0.5
Ti	47	45	No Gas	1064.71	3.3
V	51	45	He	7502.05	2.3
Cr	52	45	He	5744.54	1.2
Mn	55	45	No Gas	26624.53	0.7
Fe	56	45	H2	882521.63	0.4
Co	59	45	No Gas	13094.28	1.1
Ni	60	45	He	1780.78	1.8
Cu	63	45	He	11905.20	1.1
Zn	66	72	No Gas	5383.07	1.5
As	75	72	He	1046.71	1.4
Se	78	72	H2	358.34	6.6
Sr	88	72	No Gas	18958.98	2.6
Zr	90	72	No Gas	79270.93	2.0
Mo	95	115	No Gas	3524.91	3.2
Ag	107	115	No Gas	9495.64	3.5
Cd	111	115	No Gas	1952.22	2.8
Sn	118	115	No Gas	6663.92	2.0
Sb	123	115	No Gas	6460.48	0.6
Ba	137	115	No Gas	3111.49	4.2
W	182	159	No Gas	3043.71	5.6
Hg	201	159	He	211.50	11.0
Tl	205	159	No Gas	16644.43	2.2
Pb	208	159	No Gas	24464.91	1.3
U	238	159	No Gas	19856.08	0.7

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1239563.65	0.8	1234786.94	100.39	60	120	
Sc	45	No Gas	4023092.75	0.6	3989396.83	100.84	60	120	
Sc	45	H2	2910015.58	0.5	2888959.83	100.73	60	120	
Sc	45	He	496155.25	0.5	485899.94	102.11	60	120	
Ge	72	No Gas	1070954.19	5.0	1050102.08	101.99	60	120	
Ge	72	H2	835179.79	1.1	809599.92	103.16	60	120	
Ge	72	He	321234.48	0.7	312361.44	102.84	60	120	
In	115	No Gas	7044712.68	1.1	7006089.05	100.55	60	120	
Tb	159	No Gas	9470978.51	0.1	9437591.85	100.35	60	120	
Tb	159	He	6328178.50	0.1	6285791.5	100.67	60	120	

Calibration Standard Report

Sample Name	S2
File Name	H6K19005.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 10:34:08
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	101564.06	0.5
Be	9	6	No Gas	11329.00	1.3
B	11	6	No Gas	35843.38	0.4
Na	23	45	H2	27672075.33	1.0
Mg	24	45	No Gas	50361433.33	0.2
Al	27	45	No Gas	64299477.37	1.1
Si	28	45	H2	738522.77	1.3
P	31	45	No Gas	56839.93	0.6
K	39	45	He	3567864.92	5.7
Ca	40	45	H2	60410730.67	2.1
Ti	47	45	No Gas	84326.88	0.8
V	51	45	He	259202.81	8.8
Cr	52	45	He	292822.30	9.0
Mn	55	45	No Gas	9507281.67	0.5
Fe	56	45	H2	88501018.67	2.6
Co	59	45	No Gas	1319976.96	0.3
Ni	60	45	He	110610.87	9.0
Cu	63	45	He	301989.81	7.5
Zn	66	72	No Gas	198998.63	1.1
As	75	72	He	52609.95	8.1
Se	78	72	H2	23720.84	1.2
Sr	88	72	No Gas	1804133.19	0.6
Zr	90	72	No Gas	222545.08	0.5
Mo	95	115	No Gas	337330.52	0.4
Ag	107	115	No Gas	87814.37	1.3
Cd	111	115	No Gas	177357.79	1.4
Sn	118	115	No Gas	514390.92	0.1
Sb	123	115	No Gas	123443.16	0.7
Ba	137	115	No Gas	541400.10	0.4
W	182	159	No Gas	66739.10	0.2
Hg	201	159	He	737.86	7.8
Tl	205	159	No Gas	1623850.21	0.3
Pb	208	159	No Gas	2058120.13	1.5
U	238	159	No Gas	2058830.54	1.3

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1212049.01	0.8	1234786.94	98.16	60	120	
Sc	45	No Gas	4002802.92	1.4	3989396.83	100.34	60	120	
Sc	45	H2	2910724.08	0.5	2888959.83	100.75	60	120	
Sc	45	He	493642.61	0.6	485899.94	101.59	60	120	
Ge	72	No Gas	1144481.54	0.5	1050102.08	108.99	60	120	
Ge	72	H2	832678.27	0.7	809599.92	102.85	60	120	
Ge	72	He	322184.56	0.2	312361.44	103.14	60	120	
In	115	No Gas	7009950.16	1.0	7006089.05	100.06	60	120	
Tb	159	No Gas	9525448.79	0.5	9437591.85	100.93	60	120	
Tb	159	He	6343316.83	0.7	6285791.5	100.92	60	120	

Calibration Standard Report

Sample Name	S3
File Name	H6K19006.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\H6K19.b
Acq Time	2021-11-18 10:37:32
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	229269.45	0.7
Be	9	6	No Gas	54293.20	0.7
B	11	6	No Gas	86251.10	0.5
Na	23	45	H2	134582885.33	1.3
Mg	24	45	No Gas	246648517.33	0.5
Al	27	45	No Gas	313257162.00	0.7
Si	28	45	H2	4039671.92	0.8
P	31	45	No Gas	201416.56	0.2
K	39	45	He	19710218.67	0.2
Ca	40	45	H2	298501152.00	0.9
Ti	47	45	No Gas	416907.83	1.3
V	51	45	He	1749311.04	0.8
Cr	52	45	He	1943766.67	0.2
Mn	55	45	No Gas	46205285.33	1.8
Fe	56	45	H2	436415776.00	0.9
Co	59	45	No Gas	6416369.17	0.2
Ni	60	45	He	689473.94	0.3
Cu	63	45	He	1887554.63	0.7
Zn	66	72	No Gas	1031255.75	0.9
As	75	72	He	328895.92	0.8
Se	78	72	H2	116255.66	0.7
Sr	88	72	No Gas	8790110.48	0.2
Zr	90	72	No Gas	566926.62	0.9
Mo	95	115	No Gas	1803966.46	0.7
Ag	107	115	No Gas	417099.83	1.6
Cd	111	115	No Gas	892103.43	0.1
Sn	118	115	No Gas	2702832.40	0.5
Sb	123	115	No Gas	615166.25	0.3
Ba	137	115	No Gas	2814754.12	0.7
W	182	159	No Gas	325521.25	1.7
Hg	201	159	He	4211.71	0.7
Tl	205	159	No Gas	7819547.75	0.3
Pb	208	159	No Gas	10493067.48	1.1
U	238	159	No Gas	9984309.60	0.3

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1208263.64	1.5	1234786.94	97.85	60	120	
Sc	45	No Gas	3993429.92	0.9	3989396.83	100.1	60	120	
Sc	45	H2	2884240.25	0.5	2888959.83	99.84	60	120	
Sc	45	He	491348.77	0.5	485899.94	101.12	60	120	
Ge	72	No Gas	1098422.92	4.2	1050102.08	104.6	60	120	
Ge	72	H2	820166.35	0.2	809599.92	101.31	60	120	
Ge	72	He	319231.81	0.6	312361.44	102.2	60	120	
In	115	No Gas	6843339.27	0.8	7006089.05	97.68	60	120	
Tb	159	No Gas	9367402.13	1.2	9437591.85	99.26	60	120	
Tb	159	He	6288750.33	0.7	6285791.5	100.05	60	120	

Calibration Standard Report

Sample Name	S4
File Name	H6K19007.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 10:40:22
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	400666.67	2.2
Be	9	6	No Gas	107039.56	2.5
B	11	6	No Gas	162194.51	2.3
Na	23	45	H2	265605466.67	0.5
Mg	24	45	No Gas	491189856.00	1.3
Al	27	45	No Gas	625522190.68	2.0
Si	28	45	H2	7864784.17	0.5
P	31	45	No Gas	380050.15	0.7
K	39	45	He	38813592.00	0.6
Ca	40	45	H2	588011029.33	1.0
Tl	47	45	No Gas	816115.88	1.2
V	51	45	He	3447423.58	0.9
Cr	52	45	He	3824788.17	0.9
Mn	55	45	No Gas	89602133.33	0.9
Fe	56	45	H2	862962261.33	0.3
Co	59	45	No Gas	12378097.00	1.7
Ni	60	45	He	1521562.87	0.8
Cu	63	45	He	3631278.42	0.6
Zn	66	72	No Gas	2132118.75	0.8
As	75	72	He	654209.60	0.3
Se	78	72	H2	226467.37	1.0
Sr	88	72	No Gas	17252415.43	1.6
Zr	90	72	No Gas	1211145.74	2.7
Mo	95	115	No Gas	3558416.11	0.8
Ag	107	115	No Gas	804040.58	1.0
Cd	111	115	No Gas	1923138.85	0.4
Sn	118	115	No Gas	5219239.24	0.6
Sb	123	115	No Gas	1329921.96	0.4
Ba	137	115	No Gas	5456178.95	0.3
W	182	159	No Gas	642266.71	1.3
Hg	201	159	He	8149.48	0.7
Tl	205	159	No Gas	15024408.29	0.9
Pb	208	159	No Gas	20191946.17	0.5
U	238	159	No Gas	19439188.12	1.0

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1216358.88	1.7	1234786.94	98.51	60	120	
Sc	45	No Gas	4043905.25	0.2	3989396.83	101.37	60	120	
Sc	45	H2	2905165.75	1.5	2888959.83	100.56	60	120	
Sc	45	He	492519.65	0.7	485899.94	101.36	60	120	
Ge	72	No Gas	1067848.81	4.3	1050102.08	101.69	60	120	
Ge	72	H2	825645.21	0.6	809599.92	101.98	60	120	
Ge	72	He	318625.49	0.9	312361.44	102.01	60	120	
In	115	No Gas	6701410.51	0.5	7006089.05	95.65	60	120	
Tb	159	No Gas	9394184.63	0.4	9437591.85	99.54	60	120	
Tb	159	He	6206072.17	0.4	6285791.5	98.73	60	120	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	H6K19008.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\H6K19.b
Acq Time	2021-11-18 10:53:40
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.486	ppb	2.7	263219.93	30	98.29	90	110	
Be	9	6	No Gas	29.819	ppb	2.5	64103.55	30	99.4	90	110	
B	11	6	No Gas	30.036	ppb	1.2	63353.50	30	100.12	90	110	
Na	23	45	H2	30974.693	ppb	0.4	162287680.00	30000	103.25	90	110	
Mg	24	45	No Gas	30443.276	ppb	2.8	299088341.33	30000	101.48	90	110	
Al	27	45	No Gas	30349.344	ppb	1.4	379473261.01	30000	101.16	90	110	
Si	28	45	H2	3245.543	ppb	0.5	5042926.50	3000	108.18	90	110	
P	31	45	No Gas	290.015	ppb	1.2	229412.14	300	96.67	90	110	
K	39	45	He	31089.542	ppb	0.5	23812580.00	30000	103.63	90	110	
Ca	40	45	H2	31380.700	ppb	0.4	363825344.00	30000	104.6	90	110	
Ti	47	45	No Gas	292.332	ppb	1.5	478872.18	300	97.44	90	110	
V	51	45	He	298.171	ppb	0.5	2024559.25	300	99.39	90	110	
Cr	52	45	He	302.140	ppb	0.2	2276335.75	300	100.71	90	110	
Mn	55	45	No Gas	1971.234	ppb	2.8	59212357.33	2000	98.56	90	110	
Fe	56	45	H2	31094.523	ppb	0.6	528685440.00	30000	103.65	90	110	
Co	59	45	No Gas	297.772	ppb	2.1	7421972.67	300	99.26	90	110	
Ni	60	45	He	270.658	ppb	0.9	793105.13	300	90.22	90	110	
Cu	63	45	He	304.182	ppb	0.2	2188450.75	300	101.39	90	110	
Zn	66	72	No Gas	321.267	ppb	4.2	1341194.66	300	107.09	90	110	
As	75	72	He	298.736	ppb	1.3	379824.59	300	99.58	90	110	
Se	78	72	H2	300.943	ppb	0.5	134765.59	300	100.31	90	110	
Sr	88	72	No Gas	300.550	ppb	5.0	10260713.48	300	100.18	90	110	
Zr	90	72	No Gas	28.170	ppb	3.6	659997.09	30	93.9	90	110	
Mo	95	115	No Gas	293.636	ppb	0.6	2080759.71	300	97.88	90	110	
Ag	107	115	No Gas	30.573	ppb	0.5	492330.85	30	101.91	90	110	
Cd	111	115	No Gas	279.520	ppb	0.7	1052332.17	300	93.17	90	110	
Sn	118	115	No Gas	296.816	ppb	0.6	3099058.91	300	98.94	90	110	
Sb	123	115	No Gas	56.070	ppb	0.3	729557.13	60	93.45	90	110	
Ba	137	115	No Gas	301.609	ppb	0.6	1644794.45	300	100.54	90	110	
W	182	159	No Gas	30.524	ppb	0.7	392071.47	30	101.75	90	110	
Hg	201	159	He	2.764	ppb	1.2	4574.67	3	92.13	90	110	
Tl	205	159	No Gas	299.104	ppb	1.8	9038869.92	300	99.7	90	110	
Pb	208	159	No Gas	300.725	ppb	1.4	12204298.73	300	100.24	90	110	
U	238	159	No Gas	296.778	ppb	1.0	11641451.21	300	98.93	90	110	

Initial Calibration Verification (ICV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1215280.34	1.1	1234786.94	98.42	60	120	
Sc	45	No Gas	4028765.92	0.8	3989396.83	100.99	60	120	
Sc	45	H2	2850441.58	0.2	2888959.83	98.67	60	120	
Sc	45	He	484064.02	0.9	485899.94	99.62	60	120	
Ge	72	No Gas	1059108.42	5.5	1050102.08	100.86	60	120	
Ge	72	H2	810515.33	0.8	809599.92	100.11	60	120	
Ge	72	He	309836.29	0.3	312361.44	99.19	60	120	
In	115	No Gas	6686596.88	1.5	7006089.05	95.44	60	120	
Tb	159	No Gas	9359847.68	0.9	9437591.85	99.18	60	120	
Tb	159	He	6246638.33	0.4	6285791.5	99.38	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	ICB
File Name	H6K19009.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 10:56:17
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.012	ppb	800.5	71219.25	0.4	
Be	9	6	No Gas	0.009	ppb	149.1	107.78	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	21016.82	4	
Na	23	45	H2	0.294	ppb	130.5	552757.77	40	
Mg	24	45	No Gas	3.713	ppb	19.1	71366.31	10	
Al	27	45	No Gas	3.697	ppb	18.1	64447.25	15	
Si	28	45	H2	1.109	ppb	13.6	9900.19	8	
P	31	45	No Gas	0.521	ppb	88.6	22031.44	10	
K	39	45	He	2.620	ppb	144.1	107152.21	20	
Ca	40	45	H2	2.233	ppb	10.5	112880.47	25	
Ti	47	45	No Gas	0.054	ppb	37.8	241.33	0.5	
V	51	45	He	0.016	ppb	80.9	4034.60	0.5	
Cr	52	45	He	0.022	ppb	39.9	1839.46	0.2	
Mn	55	45	No Gas	0.253	ppb	19.6	19797.68	0.2	>LOD
Fe	56	45	H2	2.807	ppb	6.0	75279.34	10	
Co	59	45	No Gas	0.035	ppb	28.2	1436.74	0.15	
Ni	60	45	He	0.025	ppb	12.6	265.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	7846.93	0.4	
Zn	66	72	No Gas	0.081	ppb	46.8	1431.41	2	
As	75	72	He	0.062	ppb	6.6	378.68	0.2	
Se	78	72	H2	0.088	ppb	23.7	152.00	0.2	
Sr	88	72	No Gas	0.033	ppb	19.1	3428.22	0.2	
Zr	90	72	No Gas	0.006	ppb	48.0	310.01	2	
Mo	95	115	No Gas	0.053	ppb	10.7	593.35	0.2	
Ag	107	115	No Gas	0.006	ppb	49.6	315.56	0.08	
Cd	111	115	No Gas	0.069	ppb	16.3	424.45	0.2	
Sn	118	115	No Gas	0.180	ppb	5.8	3663.85	0.2	
Sb	123	115	No Gas	0.013	ppb	14.7	354.45	0.4	
Ba	137	115	No Gas	0.027	ppb	26.7	400.00	0.2	
W	182	159	No Gas	0.020	ppb	11.0	413.34	0.3	
Hg	201	159	He	0.016	ppb	12.1	112.17	0.1	
Tl	205	159	No Gas	0.118	ppb	22.5	5113.29	0.1	>LOD
Pb	208	159	No Gas	0.106	ppb	16.0	8904.58	0.1	>LOD
U	238	159	No Gas	0.034	ppb	14.3	1962.38	0.05	

LY 11/18/21

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1269841.84	0.6	1234786.94	102.84	60	120	
Sc	45	No Gas	4039395.42	1.0	3989396.83	101.25	60	120	
Sc	45	H2	2860992.08	0.2	2888959.83	99.03	60	120	
Sc	45	He	485897.93	0.8	485899.94	100	60	120	
Ge	72	No Gas	1011033.90	0.4	1050102.08	96.28	60	120	
Ge	72	H2	807074.54	0.9	809599.92	99.69	60	120	
Ge	72	He	307994.65	0.4	312361.44	98.6	60	120	
In	115	No Gas	7034800.55	0.4	7006089.05	100.41	60	120	
Tb	159	No Gas	9410257.13	1.0	9437591.85	99.71	60	120	
Tb	159	He	6319599.17	0.6	6285791.5	100.54	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLK1801
File Name	H6K19010.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 10:58:53
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.819	ppb	18.6	76372.72	1	81.9	80	120	
Be	9	6	No Gas	0.962	ppb	4.7	2233.51	1	96.2	80	120	
B	11	6	No Gas	6.986	ppb	11.2	32753.65	10	69.86	80	120	> +/- 20%
Na	23	45	H2	110.121	ppb	1.0	1128721.66	100	110.12	80	120	
Mg	24	45	No Gas	102.328	ppb	1.7	1039254.29	100	102.33	80	120	
Al	27	45	No Gas	101.057	ppb	4.3	1280960.97	100	101.06	80	120	
Si	28	45	H2	94.542	ppb	0.2	155428.26	100	94.54	80	120	
P	31	45	No Gas	48.681	ppb	1.5	56451.04	50	97.36	80	120	
K	39	45	He	103.292	ppb	3.7	183469.32	100	103.29	80	120	
Ca	40	45	H2	112.211	ppb	0.2	1392827.67	100	112.21	80	120	
Ti	47	45	No Gas	1.030	ppb	3.4	1838.79	1	103	80	120	
V	51	45	He	0.985	ppb	2.8	10580.08	1	98.5	80	120	
Cr	52	45	He	1.044	ppb	0.9	9520.64	1	104.4	80	120	
Mn	55	45	No Gas	1.020	ppb	1.4	42776.10	1	102	80	120	
Fe	56	45	H2	105.636	ppb	0.2	1830611.08	100	105.64	80	120	
Co	59	45	No Gas	0.956	ppb	0.8	24385.77	1	95.6	80	120	
Ni	60	45	He	0.974	ppb	3.7	3044.34	1	97.4	80	120	
Cu	63	45	He	0.874	ppb	0.8	14874.80	1	87.4	80	120	
Zn	66	72	No Gas	9.785	ppb	4.9	42238.26	10	97.85	80	120	
As	75	72	He	1.033	ppb	6.3	1647.43	1	103.3	80	120	
Se	78	72	H2	1.061	ppb	4.0	595.01	1	106.1	80	120	
Sr	88	72	No Gas	2.036	ppb	6.1	72387.24	2	101.8	80	120	
Zr	90	72	No Gas	3.485	ppb	8.6	82198.17	5	69.7	80	120	> +/- 20%
Mo	95	115	No Gas	0.847	ppb	2.8	6559.40	1	84.7	80	120	
Ag	107	115	No Gas	0.945	ppb	0.5	16326.74	1	94.5	80	120	
Cd	111	115	No Gas	0.872	ppb	1.1	3629.97	1	87.2	80	120	
Sn	118	115	No Gas	0.957	ppb	1.8	12284.63	1	95.7	80	120	
Sb	123	115	No Gas	0.845	ppb	3.1	11836.47	1	84.5	80	120	
Ba	137	115	No Gas	0.921	ppb	2.9	5567.86	1	92.1	80	120	
W	182	159	No Gas	1.913	ppb	1.5	24780.97	2	95.65	80	120	
Hg	201	159	He	0.097	ppb	8.8	246.00	0.1	97	80	120	
Tl	205	159	No Gas	0.975	ppb	1.5	31055.23	1	97.5	80	120	
Pb	208	159	No Gas	1.000	ppb	0.1	45235.50	1	100	80	120	
U	238	159	No Gas	0.955	ppb	0.3	38157.10	1	95.5	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1262927.48	1.0	1234786.94	102.28	60	120	
Sc	45	No Gas	4026434.67	0.5	3989396.83	100.93	60	120	
Sc	45	H2	2861945.08	0.6	2888959.83	99.06	60	120	
Sc	45	He	483975.96	0.4	485899.94	99.6	60	120	
Ge	72	No Gas	1066502.04	6.3	1050102.08	101.56	60	120	
Ge	72	H2	819714.98	0.8	809599.92	101.25	60	120	
Ge	72	He	316122.01	0.3	312361.44	101.2	60	120	
In	115	No Gas	7083649.00	0.3	7006089.05	101.11	60	120	
Tb	159	No Gas	9385317.68	0.4	9437591.85	99.45	60	120	
Tb	159	He	6351230.83	0.6	6285791.5	101.04	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA1
File Name	H6K19012.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 11:04:03
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.282	ppb	52.7	69487.27	2	-50	50	
Be	9	6	No Gas	<0.000	ppb	N/A	82.22	0.4	-50	50	
B	11	6	No Gas	<0.000	ppb	N/A	21284.98	10	-50	50	
Na	23	45	H2	106249.673	ppb	0.3	562641557.33	100000	80	120	
Mg	24	45	No Gas	103475.388	ppb	3.3	1018624554.67	100000	80	120	
Al	27	45	No Gas	103095.644	ppb	3.4	1291799900.75	100000	80	120	
Si	28	45	H2	3.669	ppb	4.7	14016.40	50	-50	50	
P	31	45	No Gas	112693.156	ppb	2.5	80942656.00	100000	80	120	
K	39	45	He	108306.864	ppb	1.3	82254874.67	100000	80	120	
Ca	40	45	H2	108286.292	ppb	0.5	1271717034.67	100000	80	120	
Ti	47	45	No Gas	2514.354	ppb	0.8	4125727.75	2000	80	120	> +/- 20%
V	51	45	He	0.005	ppb	156.4	3923.90	1	-50	50	
Cr	52	45	He	2.117	ppb	1.5	17507.17	1	-50	50	> +/- 20%
Mn	55	45	No Gas	0.385	ppb	4.5	23759.96	1	-50	50	
Fe	56	45	H2	107206.051	ppb	1.0	1846567552.00	100000	80	120	
Co	59	45	No Gas	0.163	ppb	2.2	4652.13	0.75	-50	50	
Ni	60	45	He	0.155	ppb	9.9	640.68	1	-50	50	
Cu	63	45	He	<0.000	ppb	N/A	6616.95	2	-50	50	
Zn	66	72	No Gas	1.509	ppb	1.1	7029.15	20	-50	50	
As	75	72	He	0.062	ppb	8.6	374.68	1	-50	50	
Se	78	72	H2	0.325	ppb	7.9	253.33	1	-50	50	
Sr	88	72	No Gas	1.118	ppb	1.3	38312.53	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.254	ppb	12.9	5794.63	10	-50	50	
Mo	95	115	No Gas	2125.660	ppb	1.9	14819119.41	2000	80	120	
Ag	107	115	No Gas	0.294	ppb	4.7	4862.01	0.4	-50	50	> +/- 20%
Cd	111	115	No Gas	0.086	ppb	37.4	458.31	1	-50	50	
Sn	118	115	No Gas	0.114	ppb	5.7	2753.62	1	-50	50	
Ba	137	115	No Gas	0.346	ppb	2.1	2086.83	1	-50	50	
W	182	159	No Gas	0.132	ppb	5.5	1820.14	1	-50	50	
Hg	201	159	He	0.001	ppb	211.4	86.67	0.5	-50	50	
Tl	205	159	No Gas	0.001	ppb	1129.3	1525.65	0.5	-50	50	
Pb	208	159	No Gas	0.100	ppb	8.4	8535.59	0.5	-50	50	
U	238	159	No Gas	0.000	ppb	308.9	611.13	0.25	-50	50	

11/18/21

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1207549.91	2.9	1234786.94	97.79	60	120	
Sc	45	No Gas	4036757.25	1.2	3989396.83	101.19	60	120	
Sc	45	H2	2887913.83	1.0	2888959.83	99.96	60	120	
Sc	45	He	481496.44	0.6	485899.94	99.09	60	120	
Ge	72	No Gas	997317.52	1.2	1050102.08	94.97	60	120	
Ge	72	H2	792733.92	0.5	809599.92	97.92	60	120	
Ge	72	He	305214.66	1.0	312361.44	97.71	60	120	
In	115	No Gas	6578425.55	0.8	7006089.05	93.9	60	120	
Tb	159	No Gas	9270510.19	0.4	9437591.85	98.23	60	120	
Tb	159	He	6220951.67	0.5	6285791.5	98.97	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB1
File Name	H6K19013.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\H6K19.b
Acq Time	2021-11-18 11:06:41
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	19.287	ppb	1.0	200593.30	20	80	120	
Be	9	6	No Gas	19.543	ppb	2.7	43098.16	20	80	120	
B	11	6	No Gas	17.181	ppb	0.2	46741.93	20	80	120	
Na	23	45	H2	100824.544	ppb	1.4	535745802.67	100000	80	120	
Mg	24	45	No Gas	99493.769	ppb	2.4	985854400.00	100000	80	120	
Al	27	45	No Gas	98750.139	ppb	1.4	1245338541.44	100000	80	120	
Si	28	45	H2	193.761	ppb	1.6	313827.90	200	80	120	
P	31	45	No Gas	107491.397	ppb	1.6	77717402.67	100000	80	120	
K	39	45	He	102848.917	ppb	0.9	79298170.67	100000	80	120	
Ca	40	45	H2	102106.933	ppb	1.6	1203199616.00	100000	80	120	
Ti	47	45	No Gas	2431.666	ppb	2.5	4016415.33	2000	80	120	> +/- 20%
V	51	45	He	18.966	ppb	1.8	133718.62	20	80	120	
Cr	52	45	He	21.539	ppb	0.7	165414.59	20	80	120	
Mn	55	45	No Gas	18.008	ppb	2.4	557722.58	20	80	120	
Fe	56	45	H2	101522.567	ppb	1.0	1754702720.00	100000	80	120	
Co	59	45	No Gas	17.923	ppb	2.3	451120.73	20	80	120	
Ni	60	45	He	17.632	ppb	1.0	52352.86	20	80	120	
Cu	63	45	He	18.732	ppb	1.0	144246.15	20	80	120	
Zn	66	72	No Gas	17.970	ppb	4.1	78161.55	20	80	120	
As	75	72	He	19.847	ppb	0.4	25499.68	20	80	120	
Se	78	72	H2	20.604	ppb	1.3	9178.46	20	80	120	
Sr	88	72	No Gas	19.023	ppb	3.7	669563.90	20	80	120	
Zr	90	72	No Gas	16.927	ppb	4.2	407343.13	20	80	120	
Mo	95	115	No Gas	2026.600	ppb	1.5	14280942.49	2000	80	120	
Ag	107	115	No Gas	19.129	ppb	1.4	306430.69	20	80	120	
Cd	111	115	No Gas	16.875	ppb	0.9	63315.37	20	80	120	
Sn	118	115	No Gas	18.330	ppb	1.6	191841.40	20	80	120	
Sb	123	115	No Gas	17.054	ppb	1.4	220807.02	20	80	120	
Ba	137	115	No Gas	18.857	ppb	1.3	102496.64	20	80	120	
W	182	159	No Gas	18.667	ppb	1.2	240031.82	20	80	120	
Hg	201	159	He	2.004	ppb	1.3	3368.28	2	80	120	
Tl	205	159	No Gas	17.726	ppb	0.6	537515.29	20	80	120	
Pb	208	159	No Gas	18.055	ppb	0.5	737594.54	20	80	120	
U	238	159	No Gas	18.483	ppb	1.1	726229.80	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1245708.35	1.6	1234786.94	100.88	60	120	
Sc	45	No Gas	4063654.92	1.4	3989396.83	101.86	60	120	
Sc	45	H2	2897868.58	1.0	2888959.83	100.31	60	120	
Sc	45	He	488800.75	0.9	485899.94	100.6	60	120	
Ge	72	No Gas	1087987.90	6.0	1050102.08	103.61	60	120	
Ge	72	H2	797177.46	0.6	809599.92	98.47	60	120	
Ge	72	He	309622.73	0.4	312361.44	99.12	60	120	
In	115	No Gas	6649599.99	0.6	7006089.05	94.91	60	120	
Tb	159	No Gas	9367851.57	1.0	9437591.85	99.26	60	120	
Tb	159	He	6301910.17	0.6	6285791.5	100.26	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV1
File Name	H6K19015.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\H6K19.b
Acq Time	2021-11-18 11:16:50
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.988	ppb	0.3	228162.77	25	95.95	90	110	
Be	9	6	No Gas	24.704	ppb	0.5	53436.86	25	98.82	90	110	
B	11	6	No Gas	48.046	ppb	1.7	88759.17	50	96.09	90	110	
Na	23	45	H2	24994.020	ppb	0.7	131719125.33	25000	99.98	90	110	
Mg	24	45	No Gas	24647.397	ppb	1.6	244260650.67	25000	98.59	90	110	
Al	27	45	No Gas	24830.173	ppb	1.8	313176175.33	25000	99.32	90	110	
Si	28	45	H2	2535.994	ppb	1.7	3961841.17	2500	101.44	90	110	
P	31	45	No Gas	243.253	ppb	1.8	197633.92	250	97.3	90	110	
K	39	45	He	24848.416	ppb	1.1	19141968.00	25000	99.39	90	110	
Ca	40	45	H2	25155.135	ppb	1.0	293127477.33	25000	100.62	90	110	
Ti	47	45	No Gas	243.736	ppb	1.1	402788.72	250	97.49	90	110	
V	51	45	He	249.742	ppb	0.6	1704252.08	250	99.9	90	110	
Cr	52	45	He	252.835	ppb	0.4	1914048.83	250	101.13	90	110	
Mn	55	45	No Gas	1474.478	ppb	0.8	44679484.00	1500	98.3	90	110	
Fe	56	45	H2	24962.817	ppb	0.7	426563136.00	25000	99.85	90	110	
Co	59	45	No Gas	248.011	ppb	1.5	6235848.50	250	99.2	90	110	
Ni	60	45	He	232.297	ppb	0.7	683934.58	250	92.92	90	110	
Cu	63	45	He	252.561	ppb	1.0	1827161.54	250	101.02	90	110	
Zn	66	72	No Gas	229.141	ppb	3.5	1002230.08	250	91.66	90	110	
As	75	72	He	249.509	ppb	0.7	320781.38	250	99.8	90	110	
Se	78	72	H2	247.997	ppb	0.7	113166.67	250	99.2	90	110	
Sr	88	72	No Gas	238.685	ppb	3.8	8536521.33	250	95.47	90	110	
Zr	90	72	No Gas	21.721	ppb	3.5	533059.60	25	86.88	90	110	> +/- 10%
Mo	95	115	No Gas	241.941	ppb	2.4	1752118.44	250	96.78	90	110	
Ag	107	115	No Gas	24.675	ppb	1.3	406109.42	25	98.7	90	110	
Cd	111	115	No Gas	238.463	ppb	0.9	917433.36	250	95.39	90	110	
Sn	118	115	No Gas	244.595	ppb	1.4	2610270.17	250	97.84	90	110	
Sb	123	115	No Gas	48.641	ppb	0.9	646767.63	50	97.28	90	110	
Ba	137	115	No Gas	490.676	ppb	1.3	2734574.27	500	98.14	90	110	
W	182	159	No Gas	24.356	ppb	2.1	316227.37	25	97.42	90	110	
Hg	201	159	He	2.460	ppb	1.4	4134.18	2.5	98.4	90	110	
Tl	205	159	No Gas	250.572	ppb	2.2	7652324.69	250	100.23	90	110	
Pb	208	159	No Gas	249.522	ppb	1.5	10234283.17	250	99.81	90	110	
U	238	159	No Gas	243.699	ppb	1.7	9660988.23	250	97.48	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1222536.32	1.4	1234786.94	99.01	60	120	
Sc	45	No Gas	4064106.33	0.9	3989396.83	101.87	60	120	
Sc	45	H2	2864770.42	0.6	2888959.83	99.16	60	120	
Sc	45	He	486340.82	0.7	485899.94	100.09	60	120	
Ge	72	No Gas	1109290.77	5.6	1050102.08	105.64	60	120	
Ge	72	H2	825777.10	0.8	809599.92	102	60	120	
Ge	72	He	313247.40	0.5	312361.44	100.28	60	120	
In	115	No Gas	6833061.10	0.5	7006089.05	97.53	60	120	
Tb	159	No Gas	9460043.51	0.7	9437591.85	100.24	60	120	
Th	159	He	6329676.83	1.1	6285791.5	100.7	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB1
File Name	H6K19016.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 11:19:27
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	69927.24	0.4	
Be	9	6	No Gas	0.011	ppb	76.6	112.22	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	19605.89	4	
Na	23	45	H2	2.509	ppb	46.8	564429.69	40	
Mg	24	45	No Gas	2.924	ppb	15.5	63563.35	10	
Al	27	45	No Gas	2.376	ppb	21.3	47859.63	15	
Si	28	45	H2	1.435	ppb	3.9	10409.23	8	
P	31	45	No Gas	<0.000	ppb	N/A	19923.61	10	
K	39	45	He	3.119	ppb	142.5	107212.97	20	
Ca	40	45	H2	1.357	ppb	7.4	102701.99	25	
Ti	47	45	No Gas	0.053	ppb	3.6	240.00	0.5	
V	51	45	He	0.189	ppb	11.8	5197.65	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1648.77	0.2	
Mn	55	45	No Gas	0.151	ppb	24.7	16718.22	0.2	
Fe	56	45	H2	2.309	ppb	16.9	66726.18	10	
Co	59	45	No Gas	0.019	ppb	39.2	1047.37	0.15	
Ni	60	45	He	0.010	ppb	71.0	219.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	4048.61	0.4	
Zn	66	72	No Gas	0.063	ppb	23.4	1355.40	2	
As	75	72	He	0.072	ppb	13.0	396.01	0.2	
Se	78	72	H2	0.086	ppb	18.8	151.33	0.2	
Sr	88	72	No Gas	0.013	ppb	40.8	2770.29	0.2	
Zr	90	72	No Gas	0.000	ppb	469.7	190.00	2	
Mo	95	115	No Gas	0.053	ppb	7.0	594.46	0.2	
Ag	107	115	No Gas	0.004	ppb	45.0	290.00	0.08	
Cd	111	115	No Gas	0.042	ppb	31.1	316.88	0.2	
Sn	118	115	No Gas	0.116	ppb	9.6	2961.45	0.2	
Sb	123	115	No Gas	0.013	ppb	8.2	355.56	0.4	
Ba	137	115	No Gas	0.038	ppb	42.7	463.34	0.2	
W	182	159	No Gas	0.011	ppb	67.9	293.34	0.3	
Hg	201	159	He	0.016	ppb	20.1	112.50	0.1	
Tl	205	159	No Gas	0.054	ppb	20.8	3169.30	0.1	
Pb	208	159	No Gas	0.048	ppb	27.6	6569.59	0.1	
U	238	159	No Gas	0.021	ppb	15.6	1427.86	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1257619.59	1.5	1234786.94	101.85	60	120	
Sc	45	No Gas	4037414.08	1.3	3989396.83	101.2	60	120	
Sc	45	H2	2861618.17	1.4	2888959.83	99.05	60	120	
Sc	45	He	484478.58	1.1	485899.94	99.71	60	120	
Ge	72	No Gas	1008415.86	1.2	1050102.06	96.03	60	120	
Ge	72	H2	806943.69	0.6	809599.92	99.67	60	120	
Ge	72	He	311369.50	0.7	312361.44	99.68	60	120	
In	115	No Gas	7030833.45	1.0	7006089.05	100.35	60	120	
Tb	159	No Gas	9452311.85	1.3	9437591.85	100.16	60	120	
Tb	159	He	6334150.17	0.8	6285791.5	100.77	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV2
File Name	H6K19023.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\H6K19.b
Acq Time	2021-11-18 11:42:23
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.486	ppb	3.5	221507.35	25	93.94	90	110	
Be	9	6	No Gas	24.219	ppb	2.0	51616.67	25	96.88	90	110	
B	11	6	No Gas	45.256	ppb	4.4	83624.79	50	90.51	90	110	
Na	23	45	H2	24674.407	ppb	0.9	129756997.33	25000	98.7	90	110	
Mg	24	45	No Gas	23857.789	ppb	1.7	235049434.67	25000	95.43	90	110	
Al	27	45	No Gas	23805.476	ppb	2.2	298489082.22	25000	95.22	90	110	
Si	28	45	H2	2463.201	ppb	0.6	3840169.75	2500	98.53	90	110	
P	31	45	No Gas	235.661	ppb	1.8	191009.23	250	94.26	90	110	
K	39	45	He	24718.485	ppb	0.7	18885313.33	25000	98.87	90	110	
Ca	40	45	H2	24677.418	ppb	0.8	286926645.33	25000	98.71	90	110	
Ti	47	45	No Gas	241.847	ppb	0.9	397305.56	250	96.74	90	110	
V	51	45	He	251.227	ppb	0.6	1700302.62	250	100.49	90	110	
Cr	52	45	He	252.443	ppb	0.4	1895369.54	250	100.98	90	110	
Mn	55	45	No Gas	1464.683	ppb	1.6	44121121.33	1500	97.65	90	110	
Fe	56	45	H2	24956.789	ppb	0.8	425530656.00	25000	99.83	90	110	
Co	59	45	No Gas	244.684	ppb	1.2	6115898.67	250	97.87	90	110	
Ni	60	45	He	233.652	ppb	0.6	682282.29	250	93.46	90	110	
Cu	63	45	He	254.054	ppb	0.4	1822666.54	250	101.62	90	110	
Zn	66	72	No Gas	235.883	ppb	5.1	1001742.11	250	94.35	90	110	
As	75	72	He	245.906	ppb	0.2	317412.26	250	98.36	90	110	
Se	78	72	H2	247.016	ppb	0.3	112603.97	250	98.81	90	110	
Sr	88	72	No Gas	246.914	ppb	4.8	8576814.10	250	98.77	90	110	
Zr	90	72	No Gas	26.103	ppb	3.7	622381.96	25	104.41	90	110	
Mo	95	115	No Gas	237.544	ppb	2.7	1740673.89	250	95.02	90	110	
Ag	107	115	No Gas	24.302	ppb	0.9	404695.94	25	97.21	90	110	
Cd	111	115	No Gas	232.625	ppb	0.9	905587.32	250	93.05	90	110	
Sn	118	115	No Gas	240.843	ppb	1.6	2600681.15	250	96.34	90	110	
Sb	123	115	No Gas	49.457	ppb	0.5	665394.75	50	98.91	90	110	
Ba	137	115	No Gas	484.349	ppb	1.5	2731234.13	500	96.87	90	110	
W	182	159	No Gas	24.025	ppb	1.0	317091.53	25	96.1	90	110	
Hg	201	159	He	2.471	ppb	0.6	4161.02	2.5	98.84	90	110	
Tl	205	159	No Gas	247.591	ppb	2.2	7687987.20	250	99.04	90	110	
Pb	208	159	No Gas	246.637	ppb	1.4	10285000.39	250	98.65	90	110	
U	238	159	No Gas	244.943	ppb	1.1	9872257.66	250	97.98	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1204524.22	0.6	1234786.94	97.55	60	120	
Sc	45	No Gas	4040147.58	1.0	3989396.83	101.27	60	120	
Sc	45	H2	2858521.42	0.9	2888959.83	98.95	60	120	
Sc	45	He	482324.17	0.8	485899.94	99.26	60	120	
Ge	72	No Gas	1077607.69	5.8	1050102.08	102.62	60	120	
Ge	72	H2	824911.56	0.3	809599.92	101.89	60	120	
Ge	72	He	314490.59	0.8	312361.44	100.68	60	120	
In	115	No Gas	6913717.16	0.8	7006089.05	98.68	60	120	
Tb	159	No Gas	9617066.29	0.6	9437591.85	101.9	60	120	
Tb	159	He	6341422.67	0.3	6285791.5	100.89	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB2
File Name	H6K19024.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 11:45:00
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	69012.78	0.4	
Be	9	6	No Gas	0.014	ppb	56.4	117.78	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	18413.17	4	
Na	23	45	H2	<0.000	ppb	N/A	540743.56	40	
Mg	24	45	No Gas	3.306	ppb	12.8	67369.04	10	
Al	27	45	No Gas	3.298	ppb	11.1	59467.17	15	
Si	28	45	H2	0.924	ppb	15.9	9716.73	8	
P	31	45	No Gas	<0.000	ppb	N/A	19435.59	10	
K	39	45	He	0.238	ppb	2402.5	105498.31	20	
Ca	40	45	H2	2.070	ppb	4.4	112192.69	25	
Ti	47	45	No Gas	0.044	ppb	30.5	225.33	0.5	
V	51	45	He	0.221	ppb	4.0	5439.08	0.5	
Cr	52	45	He	0.009	ppb	71.3	1745.45	0.2	
Mn	55	45	No Gas	0.210	ppb	15.8	18522.53	0.2	>LOD
Fe	56	45	H2	2.966	ppb	0.7	78831.05	10	
Co	59	45	No Gas	0.029	ppb	15.9	1302.06	0.15	
Ni	60	45	He	0.007	ppb	42.0	212.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	3436.44	0.4	
Zn	66	72	No Gas	0.057	ppb	70.8	1379.40	2	
As	75	72	He	0.073	ppb	18.2	393.01	0.2	
Se	78	72	H2	0.040	ppb	82.6	131.67	0.2	
Sr	88	72	No Gas	0.029	ppb	30.5	3413.77	0.2	
Zr	90	72	No Gas	0.005	ppb	93.7	296.67	2	
Mo	95	115	No Gas	0.047	ppb	17.9	553.35	0.2	
Ag	107	115	No Gas	0.004	ppb	7.8	285.56	0.08	
Cd	111	115	No Gas	0.059	ppb	36.3	385.09	0.2	
Sn	118	115	No Gas	0.116	ppb	11.8	2975.90	0.2	
Sb	123	115	No Gas	0.014	ppb	18.0	370.01	0.4	
Ba	137	115	No Gas	0.051	ppb	33.2	543.34	0.2	
W	182	159	No Gas	0.013	ppb	28.5	323.34	0.3	
Hg	201	159	He	0.003	ppb	161.9	92.83	0.1	
Tl	205	159	No Gas	0.065	ppb	17.8	3529.39	0.1	
Pb	208	159	No Gas	0.052	ppb	32.1	6748.50	0.1	
U	238	159	No Gas	0.035	ppb	7.3	1997.94	0.05	

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Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1249211.71	0.8	1234786.94	101.17	60	120	
Sc	45	No Gas	4039950.08	1.1	3989396.83	101.27	60	120	
Sc	45	H2	2892278.33	1.2	2888959.83	100.11	60	120	
Sc	45	He	486815.74	0.5	485899.94	100.19	60	120	
Ge	72	No Gas	1047699.48	6.5	1050102.08	99.77	60	120	
Ge	72	H2	813273.25	0.3	809599.92	100.45	60	120	
Ge	72	He	308555.50	0.3	312361.44	98.78	60	120	
In	115	No Gas	7079887.94	1.6	7006089.05	101.05	60	120	
Tb	159	No Gas	9497612.40	1.0	9437591.85	100.64	60	120	
Tb	159	He	6402938.33	0.9	6285791.5	101.86	60	120	

Blank Report

Sample Name	IMK016WB
File Name	H6K19025.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 11:50:48
Sample Type	Blank
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	68366.33	0.4	
Be	9	6	No Gas	0.012	ppb	89.3	110.00	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	16743.31	4	
Na	23	45	H2	<0.000	ppb	N/A	528752.75	40	
Mg	24	45	No Gas	1.996	ppb	6.1	54197.10	10	
Al	27	45	No Gas	1.532	ppb	5.0	37146.33	15	
Si	28	45	H2	<0.000	ppb	N/A	6476.84	8	
P	31	45	No Gas	<0.000	ppb	N/A	18685.89	10	
K	39	45	He	<0.000	ppb	N/A	103915.79	20	
Ca	40	45	H2	12.379	ppb	1.3	232442.21	25	
Ti	47	45	No Gas	0.045	ppb	21.2	226.00	0.5	
V	51	45	He	0.152	ppb	2.1	4963.57	0.5	
Cr	52	45	He	0.002	ppb	234.7	1689.44	0.2	
Mn	55	45	No Gas	0.099	ppb	7.1	15094.99	0.2	
Fe	56	45	H2	1.939	ppb	1.7	60861.75	10	
Co	59	45	No Gas	0.007	ppb	10.8	755.35	0.15	
Ni	60	45	He	0.037	ppb	16.3	300.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	3451.77	0.4	
Zn	66	72	No Gas	0.926	ppb	5.5	4942.90	2	
As	75	72	He	0.051	ppb	13.7	367.34	0.2	
Se	78	72	H2	0.066	ppb	69.5	143.33	0.2	
Sr	88	72	No Gas	0.029	ppb	15.4	3402.66	0.2	
Zr	90	72	No Gas	0.002	ppb	87.4	236.67	2	
Mo	95	115	No Gas	0.009	ppb	125.9	272.22	0.2	
Ag	107	115	No Gas	0.001	ppb	438.0	231.11	0.08	
Cd	111	115	No Gas	0.004	ppb	177.9	170.03	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	1400.08	0.2	
Sb	123	115	No Gas	0.004	ppb	101.3	245.56	0.4	
Ba	137	115	No Gas	0.076	ppb	5.2	692.24	0.2	
W	182	159	No Gas	0.005	ppb	35.8	213.33	0.3	
Hg	201	159	He	0.006	ppb	153.3	96.83	0.1	
Tl	205	159	No Gas	<0.000	ppb	N/A	1465.64	0.1	
Pb	208	159	No Gas	0.011	ppb	59.0	5112.64	0.1	
U	238	159	No Gas	0.007	ppb	40.9	903.37	0.05	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1220662.32	1.2	1234786.94	98.86	60	120	
Sc	45	No Gas	4016535.33	1.5	3989396.83	100.68	60	120	
Sc	45	H2	2879921.42	1.1	2888959.83	99.69	60	120	
Sc	45	He	486103.79	0.4	485899.94	100.04	60	120	
Ge	72	No Gas	1042249.12	6.7	1050102.08	99.25	60	120	
Ge	72	H2	812401.62	1.1	809599.92	100.35	60	120	
Ge	72	He	310191.85	1.2	312361.44	99.31	60	120	
In	115	No Gas	7127587.31	1.2	7006089.05	101.73	60	120	
Tb	159	No Gas	9530588.79	1.5	9437591.85	100.99	60	120	
Tb	159	He	6371614.33	0.2	6285791.5	101.37	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMK016WC
File Name	H6K19027.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 12:00:14
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.783	ppb	2.0	264729.69	30	99.28	85	115	
Be	9	6	No Gas	30.074	ppb	2.8	64551.23	30	100.25	83	121	
B	11	6	No Gas	25.868	ppb	4.7	57511.90	30	86.23	85	115	
Na	23	45	H2	3185.804	ppb	2.1	17207523.33	3000	106.19	85	117	
Mg	24	45	No Gas	3066.788	ppb	1.9	30476304.67	3000	102.23	83	118	
Al	27	45	No Gas	2997.887	ppb	0.9	37891501.10	3000	99.93	84	117	
Si	28	45	H2	5.480	ppb	9.6	16658.10	3000	0.18	85	115	FAIL
P	31	45	No Gas	288.810	ppb	1.9	230949.35	300	96.27	85	115	
K	39	45	He	3102.358	ppb	1.2	2492104.67	3000	103.41	87	115	
Ca	40	45	H2	3237.625	ppb	2.7	37661100.00	3000	107.92	87	118	
Ti	47	45	No Gas	29.656	ppb	1.8	49230.15	30	98.85	85	115	
V	51	45	He	29.039	ppb	1.2	202457.08	30	96.8	86	115	
Cr	52	45	He	30.829	ppb	1.3	235805.50	30	102.76	85	116	
Mn	55	45	No Gas	28.270	ppb	1.3	870162.16	30	94.23	87	115	
Fe	56	45	H2	3206.407	ppb	2.6	54610281.33	3000	106.88	87	118	
Co	59	45	No Gas	28.467	ppb	1.1	717502.16	30	94.89	86	115	
Ni	60	45	He	29.048	ppb	1.2	86041.01	30	96.83	85	117	
Cu	63	45	He	30.816	ppb	0.9	231464.90	30	102.72	85	118	
Zn	66	72	No Gas	52.555	ppb	4.1	231580.67	60	87.59	83	119	
As	75	72	He	30.519	ppb	0.6	40005.76	30	101.73	84	116	
Se	78	72	H2	31.066	ppb	2.3	14200.47	30	103.55	80	120	
Sr	88	72	No Gas	30.297	ppb	7.3	1088458.46	30	100.99	85	115	
Zr	90	72	No Gas	29.639	ppb	6.6	728935.54	30	98.8	85	115	
Mo	95	115	No Gas	28.113	ppb	1.9	212591.95	30	93.71	85	115	
Ag	107	115	No Gas	30.106	ppb	1.6	516972.01	30	100.35	85	117	
Cd	111	115	No Gas	28.136	ppb	1.0	113089.04	30	93.79	87	115	
Sn	118	115	No Gas	27.417	ppb	1.1	306831.32	30	91.39	85	115	
Sb	123	115	No Gas	26.012	ppb	0.9	361013.81	30	86.71	85	117	
Ba	137	115	No Gas	27.379	ppb	0.7	159438.53	30	91.26	86	114	
W	182	159	No Gas	0.047	ppb	1.4	773.36	30	0.16	85	115	FAIL
Hg	201	159	He	<0.000	ppb	N/A	83.83	2.5	-0.08	82	119	FAIL
Tl	205	159	No Gas	28.706	ppb	1.5	889361.84	30	95.69	82	116	
Pb	208	159	No Gas	28.916	ppb	1.3	1205589.18	30	96.39	88	115	
U	238	159	No Gas	29.886	ppb	1.2	1200823.50	30	99.62	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1213224.27	1.2	1234786.94	98.25	60	120	
Sc	45	No Gas	4070790.25	1.5	3989396.83	102.04	60	120	
Sc	45	H2	2855262.42	2.5	2888959.83	98.83	60	120	
Sc	45	He	488314.05	0.4	485899.94	100.5	60	120	
Ge	72	No Gas	1113590.77	6.6	1050102.08	106.05	60	120	
Ge	72	H2	821564.81	2.2	809599.92	101.48	60	120	
Ge	72	He	317224.37	0.7	312361.44	101.56	60	120	
In	115	No Gas	7129862.08	1.2	7006089.05	101.77	60	120	
Tb	159	No Gas	9583557.12	2.0	9437591.85	101.55	60	120	
Tb	159	He	6407980.83	1.0	6285791.5	101.94	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMK016WL
File Name	H6K19028.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 12:11:14
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	28.855	ppb	2.7	259571.47	30	96.18	85	115	
Be	9	6	No Gas	29.238	ppb	2.6	62988.64	30	97.46	83	121	
B	11	6	No Gas	26.618	ppb	6.9	58763.90	30	88.73	85	115	
Na	23	45	H2	3114.279	ppb	1.7	17131433.33	3000	103.81	85	117	
Mg	24	45	No Gas	3045.527	ppb	3.2	30060276.67	3000	101.52	83	118	
Al	27	45	No Gas	2960.746	ppb	3.7	37171990.28	3000	98.69	84	117	
Si	28	45	H2	5.158	ppb	10.1	16453.84	3000	0.17	85	115	FAIL
P	31	45	No Gas	290.314	ppb	4.0	230478.72	300	96.77	85	115	
K	39	45	He	3027.823	ppb	1.8	2477269.50	3000	100.93	87	115	
Ca	40	45	H2	3191.328	ppb	1.2	37785680.00	3000	106.38	87	118	
Ti	47	45	No Gas	29.822	ppb	3.2	49170.56	30	99.41	85	115	
V	51	45	He	28.789	ppb	0.1	204286.01	30	95.96	86	115	
Cr	52	45	He	30.495	ppb	1.7	237338.49	30	101.65	85	116	
Mn	55	45	No Gas	28.264	ppb	3.3	864149.44	30	94.21	87	115	
Fe	56	45	H2	3141.134	ppb	0.4	54453314.67	3000	104.7	87	118	
Co	59	45	No Gas	28.341	ppb	3.3	709541.15	30	94.47	86	115	
Ni	60	45	He	28.267	ppb	1.7	85195.64	30	94.22	85	117	
Cu	63	45	He	30.502	ppb	1.3	233208.44	30	101.67	85	118	
Zn	66	72	No Gas	53.168	ppb	6.9	234301.89	60	88.61	83	119	
As	75	72	He	30.171	ppb	1.6	39970.32	30	100.57	84	116	
Se	78	72	H2	30.808	ppb	0.3	14303.58	30	102.69	80	120	
Sr	88	72	No Gas	30.225	ppb	10.7	1086138.67	30	100.75	85	115	
Zr	90	72	No Gas	26.669	ppb	8.5	656422.97	30	88.9	85	115	
Mo	95	115	No Gas	27.772	ppb	3.0	208595.88	30	92.57	85	115	
Ag	107	115	No Gas	29.894	ppb	2.3	509832.86	30	99.65	85	117	
Cd	111	115	No Gas	27.794	ppb	1.9	110954.58	30	92.65	87	115	
Sn	118	115	No Gas	27.359	ppb	2.6	304082.65	30	91.2	85	115	
Sb	123	115	No Gas	26.018	ppb	2.1	358629.26	30	86.73	85	117	
Ba	137	115	No Gas	27.731	ppb	2.5	160394.55	30	92.44	86	114	
W	182	159	No Gas	0.048	ppb	16.4	780.03	30	0.16	85	115	FAIL
Hg	201	159	He	<0.000	ppb	N/A	69.33	2.5	-0.44	82	119	FAIL
Tl	205	159	No Gas	28.414	ppb	2.5	883469.06	30	94.71	82	116	
Pb	208	159	No Gas	28.582	ppb	2.8	1195813.40	30	95.27	88	115	
U	238	159	No Gas	30.032	ppb	2.3	1210735.51	30	100.11	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1217839.57	0.4	1234786.94	98.63	60	120	
Sc	45	No Gas	4044374.58	0.6	3989396.83	101.38	60	120	
Sc	45	H2	2904885.67	0.5	2888959.83	100.55	60	120	
Sc	45	He	496913.30	1.5	485899.94	102.27	60	120	
Ge	72	No Gas	1114072.54	4.9	1050102.08	106.09	60	120	
Ge	72	H2	834150.60	0.6	809599.92	103.03	60	120	
Ge	72	He	320593.29	1.1	312361.44	102.64	60	120	
In	115	No Gas	7081570.51	0.2	7006089.05	101.08	60	120	
Tb	159	No Gas	9616479.62	0.8	9437591.85	101.9	60	120	
Tb	159	He	6420614.33	0.6	6285791.5	102.14	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV3
File Name	H6K19031.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 12:25:11
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.871	ppb	1.9	228675.58	25	95.48	90	110	
Be	9	6	No Gas	24.307	ppb	1.8	52875.79	25	97.23	90	110	
B	11	6	No Gas	46.283	ppb	1.7	86796.74	50	92.57	90	110	
Na	23	45	H2	24333.403	ppb	2.3	131353717.33	25000	97.33	90	110	
Mg	24	45	No Gas	24574.370	ppb	1.2	242738949.33	25000	98.3	90	110	
Al	27	45	No Gas	24782.492	ppb	1.3	311581695.36	25000	99.13	90	110	
Si	28	45	H2	2455.954	ppb	3.1	3929544.00	2500	98.24	90	110	
P	31	45	No Gas	239.005	ppb	1.3	193927.49	250	95.6	90	110	
K	39	45	He	24764.466	ppb	0.4	19064482.00	25000	99.06	90	110	
Ca	40	45	H2	24539.242	ppb	2.6	292855680.00	25000	98.16	90	110	
Ti	47	45	No Gas	244.913	ppb	1.0	403415.37	250	97.97	90	110	
V	51	45	He	250.478	ppb	0.8	1708100.50	250	100.19	90	110	
Cr	52	45	He	252.425	ppb	0.8	1909569.92	250	100.97	90	110	
Mn	55	45	No Gas	1472.069	ppb	1.2	44463580.00	1500	98.14	90	110	
Fe	56	45	H2	24600.766	ppb	2.9	430508853.33	25000	98.4	90	110	
Co	59	45	No Gas	244.385	ppb	0.7	6124528.50	250	97.75	90	110	
Ni	60	45	He	231.623	ppb	0.7	681470.06	250	92.65	90	110	
Cu	63	45	He	254.790	ppb	0.6	1841785.08	250	101.92	90	110	
Zn	66	72	No Gas	231.233	ppb	4.8	1010175.25	250	92.49	90	110	
As	75	72	He	247.781	ppb	0.3	317449.52	250	99.11	90	110	
Se	78	72	H2	241.441	ppb	3.5	111938.48	250	96.58	90	110	
Sr	88	72	No Gas	239.465	ppb	3.8	8558289.66	250	95.79	90	110	
Zr	90	72	No Gas	25.473	ppb	2.3	624890.42	25	101.89	90	110	
Mo	95	115	No Gas	239.362	ppb	2.1	1741026.77	250	95.74	90	110	
Ag	107	115	No Gas	24.296	ppb	2.0	401612.29	25	97.18	90	110	
Cd	111	115	No Gas	234.953	ppb	1.1	907952.49	250	93.98	90	110	
Sn	118	115	No Gas	240.344	ppb	1.9	2576526.29	250	96.14	90	110	
Sb	123	115	No Gas	50.141	ppb	1.0	669734.33	50	100.28	90	110	
Ba	137	115	No Gas	489.369	ppb	2.1	2739157.81	500	97.87	90	110	
W	182	159	No Gas	24.559	ppb	0.8	319534.39	25	98.24	90	110	
Hg	201	159	He	2.502	ppb	1.1	4171.36	2.5	100.08	90	110	
Tl	205	159	No Gas	249.324	ppb	1.2	7631108.86	250	99.73	90	110	
Pb	208	159	No Gas	249.602	ppb	1.4	10259775.25	250	99.84	90	110	
U	238	159	No Gas	241.267	ppb	1.8	9585169.62	250	96.51	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1229488.31	0.1	1234786.94	99.57	60	120	
Sc	45	No Gas	4050845.58	1.2	3989396.83	101.54	60	120	
Sc	45	H2	2935314.92	2.8	2888959.83	101.6	60	120	
Sc	45	He	485995.88	0.7	485899.94	100.02	60	120	
Ge	72	No Gas	1108339.06	5.2	1050102.08	105.55	60	120	
Ge	72	H2	839633.25	3.5	809599.92	103.71	60	120	
Ge	72	He	312149.38	0.5	312361.44	99.93	60	120	
In	115	No Gas	6863913.91	1.3	7006089.05	97.97	60	120	
Tb	159	No Gas	9480092.95	0.5	9437591.85	100.45	60	120	
Tb	159	He	6280313.33	0.6	6285791.5	99.91	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB3
File Name	H6K19032.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\H6K19.b
Acq Time	2021-11-18 12:27:48
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	70481.11	0.4	
Be	9	6	No Gas	0.011	ppb	97.4	111.11	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	17824.63	4	
Na	23	45	H2	2.142	ppb	33.5	559441.85	40	
Mg	24	45	No Gas	3.714	ppb	14.9	71440.35	10	
Al	27	45	No Gas	3.611	ppb	15.7	63445.60	15	
Si	28	45	H2	1.767	ppb	4.6	10867.58	8	
P	31	45	No Gas	<0.000	ppb	N/A	20177.97	10	
K	39	45	He	1.886	ppb	186.1	105137.58	20	
Ca	40	45	H2	2.450	ppb	0.5	114796.75	25	
Ti	47	45	No Gas	0.064	ppb	31.3	258.67	0.5	
V	51	45	He	0.131	ppb	3.9	4748.82	0.5	
Cr	52	45	He	0.003	ppb	82.2	1671.44	0.2	
Mn	55	45	No Gas	0.224	ppb	17.6	18954.48	0.2	>LOD
Fe	56	45	H2	2.983	ppb	2.1	77855.52	10	
Co	59	45	No Gas	0.037	ppb	9.9	1491.41	0.15	
Ni	60	45	He	0.022	ppb	47.1	252.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	4460.06	0.4	
Zn	66	72	No Gas	0.100	ppb	12.0	1512.75	2	
As	75	72	He	0.056	ppb	23.2	368.67	0.2	
Se	78	72	H2	0.046	ppb	128.5	132.33	0.2	
Sr	88	72	No Gas	0.036	ppb	13.7	3514.91	0.2	
Zr	90	72	No Gas	0.009	ppb	26.9	386.67	2	
Mo	95	115	No Gas	0.054	ppb	7.9	608.90	0.2	
Ag	107	115	No Gas	0.005	ppb	43.3	307.78	0.08	
Cd	111	115	No Gas	0.073	ppb	22.5	443.26	0.2	
Sn	118	115	No Gas	0.126	ppb	13.0	3085.92	0.2	
Sb	123	115	No Gas	0.018	ppb	6.5	436.67	0.4	
Ba	137	115	No Gas	0.069	ppb	43.3	646.68	0.2	
W	182	159	No Gas	0.013	ppb	18.9	320.01	0.3	
Hg	201	159	He	0.012	ppb	38.4	105.33	0.1	
Tl	205	159	No Gas	0.085	ppb	17.8	4101.79	0.1	
Pb	208	159	No Gas	0.057	ppb	20.7	6911.87	0.1	
U	238	159	No Gas	0.038	ppb	7.7	2122.41	0.05	

LY 11/18/21

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1258267.09	0.8	1234786.94	101.9	60	120	
Sc	45	No Gas	4041090.08	0.9	3989396.83	101.3	60	120	
Sc	45	H2	2845892.92	1.3	2888959.83	98.51	60	120	
Sc	45	He	479327.03	0.2	485899.94	98.65	60	120	
Ge	72	No Gas	1013640.16	0.2	1050102.08	96.53	60	120	
Ge	72	H2	799847.06	1.1	809599.92	98.8	60	120	
Ge	72	He	305865.95	0.7	312361.44	97.92	60	120	
In	115	No Gas	7068354.51	0.4	7006089.05	100.89	60	120	
Tb	159	No Gas	9411380.74	0.8	9437591.85	99.72	60	120	
Tb	159	He	6304051.00	0.8	6285791.5	100.29	60	120	

Sample Report

Sample Name	K137-01I
File Name	H6K19035.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 12:40:49
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	188.229	18.823	ppb	3.6	192057.02	50	
Be	9	6	No Gas	0.013	0.001	ppb	569.1	86.67	50	
B	11	6	No Gas	486.568	48.657	ppb	6.5	88817.92	100	
Na	23	45	H2	351803.491	35180.349	ppb	2.2	185027173.33	50000	
Mg	24	45	No Gas	345.304	34.530	ppb	2.1	369901.65	50000	
Al	27	45	No Gas	3.505	0.350	ppb	24.4	22247.84	50000	
Si	28	45	H2	2564.763	256.476	ppb	1.3	407779.64	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	19488.99	500	
K	39	45	He	6183.695	618.369	ppb	2.4	572311.19	50000	
Ca	40	45	H2	11443.624	1144.362	ppb	1.6	13408591.00	50000	
Ti	47	45	No Gas	0.154	0.015	ppb	131.5	176.00	500	
V	51	45	He	1.105	0.110	ppb	8.3	4627.45	500	
Cr	52	45	He	0.016	0.002	ppb	649.5	1665.43	500	
Mn	55	45	No Gas	2.642	0.264	ppb	2.8	19875.75	3000	
Fe	56	45	H2	26.711	2.671	ppb	1.0	73002.85	50000	
Co	59	45	No Gas	<0.000	<0.000	ppb	N/A	277.33	500	
Ni	60	45	He	0.367	0.037	ppb	36.0	296.67	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	4625.46	500	
Zn	66	72	No Gas	49.275	4.928	ppb	4.5	22409.82	500	
As	75	72	He	23.864	2.386	ppb	2.5	3387.76	500	
Se	78	72	H2	<0.000	<0.000	ppb	N/A	97.00	500	
Sr	88	72	No Gas	1208.766	120.877	ppb	4.3	4261633.86	500	
Zr	90	72	No Gas	1.638	0.164	ppb	2.8	4160.66	50	
Mo	95	115	No Gas	13.881	1.388	ppb	3.9	10489.70	500	
Ag	107	115	No Gas	0.009	0.001	ppb	141.8	232.22	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	73.46	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1018.93	500	
Sb	123	115	No Gas	0.041	0.004	ppb	33.2	237.78	100	
Ba	137	115	No Gas	28.725	2.873	ppb	2.4	16633.98	1000	
W	182	159	No Gas	13.094	1.309	ppb	2.5	17188.36	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	79.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	571.13	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	3650.20	500	
U	238	159	No Gas	<0.000	<0.000	ppb	N/A	431.12	497	

Sample Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1211523.28	0.8	1234786.94	98.12	60	120	
Sc	45	No Gas	3985407.58	0.9	3989396.83	99.9	60	120	
Sc	45	H2	2863254.50	1.8	2888959.83	99.11	60	120	
Sc	45	He	480744.02	0.6	485899.94	98.94	60	120	
Ge	72	No Gas	1093413.83	5.8	1050102.08	104.12	60	120	
Ge	72	H2	822049.12	1.3	809599.92	101.54	60	120	
Ge	72	He	314871.75	0.7	312361.44	100.8	60	120	
In	115	No Gas	6996209.81	0.3	7006089.05	99.86	60	120	
Tb	159	No Gas	9486514.62	0.8	9437591.85	100.52	60	120	
Tb	159	He	6377712.00	0.4	6285791.5	101.46	60	120	

Sample Report

Sample Name	K137-02I
File Name	H6K19036.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 12:43:25
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	286.457	28.646	ppb	2.3	257447.86	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	70.00	50	
B	11	6	No Gas	756.244	75.624	ppb	3.6	126247.15	100	
Na	23	45	H2	369632.262	36963.226	ppb	0.4	192098629.33	50000	
Mg	24	45	No Gas	3046.033	304.603	ppb	2.6	2988370.58	50000	
Al	27	45	No Gas	1.966	0.197	ppb	17.4	20298.21	50000	
Si	28	45	H2	11902.207	1190.221	ppb	0.8	1840466.00	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	19423.56	500	
K	39	45	He	7369.734	736.973	ppb	0.8	656192.73	50000	
Ca	40	45	H2	85587.807	8558.781	ppb	0.6	98542698.67	50000	
Tl	47	45	No Gas	0.654	0.065	ppb	9.5	256.67	500	
V	51	45	He	10.814	1.081	ppb	1.1	11061.79	500	
Cr	52	45	He	7.326	0.733	ppb	2.7	7065.83	500	
Mn	55	45	No Gas	3.007	0.301	ppb	2.4	20919.98	3000	
Fe	56	45	H2	20.763	2.076	ppb	2.8	62091.23	50000	
Co	59	45	No Gas	<0.000	<0.000	ppb	N/A	543.34	500	
Ni	60	45	He	2.509	0.251	ppb	7.0	911.36	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	6293.46	500	
Zn	66	72	No Gas	25.774	2.577	ppb	5.0	12270.89	500	
As	75	72	He	16.743	1.674	ppb	2.7	2451.22	500	
Se	78	72	H2	0.227	0.023	ppb	51.0	123.67	500	
Sr	88	72	No Gas	3057.841	305.784	ppb	4.4	10757916.79	500	
Zr	90	72	No Gas	0.932	0.093	ppb	13.3	2453.57	50	
Mo	95	115	No Gas	17.062	1.706	ppb	1.3	12703.86	500	
Ag	107	115	No Gas	0.024	0.002	ppb	62.4	254.45	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	70.46	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	891.14	500	
Sb	123	115	No Gas	0.074	0.007	ppb	16.9	280.00	100	
Ba	137	115	No Gas	81.621	8.162	ppb	1.9	46286.70	1000	
W	182	159	No Gas	7.289	0.729	ppb	3.1	9463.56	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	79.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	485.56	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	3391.29	500	
U	238	159	No Gas	3.904	0.390	ppb	3.2	15851.36	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1214386.87	1.0	1234786.94	98.35	60	120	
Sc	45	No Gas	3977667.92	0.9	3989396.83	99.71	60	120	
Sc	45	H2	2828922.83	0.9	2888959.83	97.92	60	120	
Sc	45	He	476441.35	1.0	485899.94	98.05	60	120	
Ge	72	No Gas	1091604.10	5.9	1050102.08	103.95	60	120	
Ge	72	H2	810974.87	0.5	809599.92	100.17	60	120	
Ge	72	He	312676.49	1.7	312361.44	100.1	60	120	
In	115	No Gas	6917430.05	0.1	7006089.05	98.73	60	120	
Tb	159	No Gas	9317149.35	0.4	9437591.85	98.72	60	120	
Tb	159	He	6298263.17	0.8	6285791.5	100.2	60	120	

Sample Report

Sample Name	K137-01
File Name	H6K19037.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 12:46:03
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	193.311	193.311	ppb	1.5	1283216.96	50	>LDR
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	71.11	50	
B	11	6	No Gas	555.338	555.338	ppb	2.6	751495.37	100	>LDR
Na	23	45	H2	350572.338	350572.338	ppb	1.3	1826940245.33	50000	>LDR
Mg	24	45	No Gas	358.131	358.131	ppb	2.3	3440221.17	50000	
Al	27	45	No Gas	2.689	2.689	ppb	10.1	50079.39	50000	
Si	28	45	H2	2935.449	2935.449	ppb	1.1	4551476.50	5000	
P	31	45	No Gas	2.070	2.070	ppb	17.7	22356.64	500	
K	39	45	He	6382.966	6382.966	ppb	0.6	4933567.33	50000	
Ca	40	45	H2	11243.343	11243.343	ppb	0.9	130117506.67	50000	
Ti	47	45	No Gas	0.228	0.228	ppb	7.1	510.01	500	
V	51	45	He	0.532	0.532	ppb	2.3	7459.36	500	
Cr	52	45	He	0.208	0.208	ppb	4.1	3206.38	500	
Mn	55	45	No Gas	0.597	0.597	ppb	3.2	29120.96	3000	
Fe	56	45	H2	24.335	24.335	ppb	1.7	439980.88	50000	
Co	59	45	No Gas	0.001	0.001	ppb	148.1	587.35	500	
Ni	60	45	He	0.082	0.082	ppb	2.6	428.01	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	5969.98	500	
Zn	66	72	No Gas	16.409	16.409	ppb	2.0	65319.20	500	
As	75	72	He	23.880	23.880	ppb	0.3	30763.61	500	
Se	78	72	H2	0.069	0.069	ppb	44.4	143.00	500	
Sr	88	72	No Gas	1274.731	1274.731	ppb	2.6	40847398.38	500	>LDR
Zr	90	72	No Gas	0.346	0.346	ppb	20.9	7789.02	50	
Mo	95	115	No Gas	14.326	14.326	ppb	2.6	101423.18	500	
Ag	107	115	No Gas	0.057	0.057	ppb	12.2	1127.83	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	37.40	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1078.94	500	
Sb	123	115	No Gas	0.027	0.027	ppb	5.5	517.79	100	
Ba	137	115	No Gas	28.148	28.148	ppb	2.5	153316.18	1000	
W	182	159	No Gas	13.138	13.138	ppb	3.1	163850.53	50	
Hg	201	159	He	0.035	0.035	ppb	10.1	139.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	377.78	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	3255.73	500	
U	238	159	No Gas	0.056	0.056	ppb	3.3	2718.08	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1157336.84	2.2	1234786.94	93.73	60	120	
Sc	45	No Gas	3901263.75	0.8	3989396.83	97.79	60	120	
Sc	45	H2	2844185.00	1.1	2888959.83	98.45	60	120	
Sc	45	He	480321.52	0.6	485899.94	98.85	60	120	
Ge	72	No Gas	992707.79	0.9	1050102.08	94.53	60	120	
Ge	72	H2	803821.02	0.4	809599.92	99.29	60	120	
Ge	72	He	311077.70	0.8	312361.44	99.59	60	120	
In	115	No Gas	6668806.78	0.6	7006089.05	95.19	60	120	
Tb	159	No Gas	9083912.14	0.3	9437591.85	96.25	60	120	
Tb	159	He	6120895.33	0.5	6285791.5	97.38	60	120	

Sample Report

Sample Name	K137-02
File Name	H6K19038.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\H6K19.b
Acq Time	2021-11-18 12:48:40
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	299.096	299.096	ppb	1.0	2035164.50	50	>LDR
Be	9	6	No Gas	0.007	0.007	ppb	91.9	97.78	50	
B	11	6	No Gas	848.021	848.021	ppb	2.1	1186450.93	100	>LDR
Na	23	45	H2	366900.147	366900.147	ppb	0.7	2006224213.33	50000	>LDR
Mg	24	45	No Gas	3071.812	3071.812	ppb	1.9	30077409.33	50000	
Al	27	45	No Gas	3.513	3.513	ppb	2.5	61760.26	50000	
Si	28	45	H2	12493.702	12493.702	ppb	0.6	20298578.00	5000	>LDR
P	31	45	No Gas	1.684	1.684	ppb	35.5	22707.21	500	
K	39	45	He	7682.506	7682.506	ppb	1.7	6065090.50	50000	
Ca	40	45	H2	86183.815	86183.815	ppb	0.3	1045902762.67	50000	>LDR
Ti	47	45	No Gas	0.597	0.597	ppb	3.6	1125.38	500	
V	51	45	He	11.209	11.209	ppb	1.6	81235.64	500	
Cr	52	45	He	7.298	7.298	ppb	3.3	57560.51	500	
Mn	55	45	No Gas	3.086	3.086	ppb	1.1	104381.85	3000	
Fe	56	45	H2	19.763	19.763	ppb	0.3	380308.92	50000	
Co	59	45	No Gas	0.084	0.084	ppb	4.4	2651.59	500	
Ni	60	45	He	2.389	2.389	ppb	5.0	7310.63	500	
Cu	63	45	He	0.922	0.922	ppb	7.1	15480.13	500	
Zn	66	72	No Gas	16.784	16.784	ppb	6.3	70410.10	500	
As	75	72	He	17.264	17.264	ppb	0.4	22609.89	500	
Se	78	72	H2	0.608	0.608	ppb	4.4	388.34	500	
Sr	88	72	No Gas	3147.663	3147.663	ppb	6.1	106332413.55	500	>LDR
Zr	90	72	No Gas	0.082	0.082	ppb	3.6	2086.84	50	
Mo	95	115	No Gas	17.893	17.893	ppb	1.3	126814.05	500	
Ag	107	115	No Gas	0.059	0.059	ppb	4.0	1156.72	50	
Cd	111	115	No Gas	0.027	0.027	ppb	4.7	245.84	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1133.38	500	
Sb	123	115	No Gas	0.065	0.065	ppb	7.5	1017.82	100	
Ba	137	115	No Gas	82.590	82.590	ppb	1.4	450017.67	1000	
W	182	159	No Gas	7.843	7.843	ppb	0.6	98441.83	50	
Hg	201	159	He	0.009	0.009	ppb	36.1	99.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	355.56	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	3362.40	500	
U	238	159	No Gas	3.987	3.987	ppb	0.7	153255.92	497	

Sample Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1208203.02	2.1	1234786.94	97.85	60	120	
Sc	45	No Gas	4011167.42	1.0	3989396.83	100.55	60	120	
Sc	45	H2	2984093.42	0.2	2888959.83	103.29	60	120	
Sc	45	He	492449.46	2.4	485899.94	101.35	60	120	
Ge	72	No Gas	1049631.33	7.5	1050102.08	99.96	60	120	
Ge	72	H2	816264.29	0.5	809599.92	100.82	60	120	
Ge	72	He	315054.87	0.7	312361.44	100.86	60	120	
In	115	No Gas	6678102.57	1.0	7006089.05	95.32	60	120	
Tb	159	No Gas	9136714.91	0.9	9437591.85	96.81	60	120	
Tb	159	He	6218833.67	1.3	6285791.5	98.93	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV4
File Name	H6K19039.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\H6K19.b
Acq Time	2021-11-18 12:56:37
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.164	ppb	0.9	241536.34	25	96.66	90	110	
Be	9	6	No Gas	24.170	ppb	2.8	55073.24	25	96.68	90	110	
B	11	6	No Gas	46.681	ppb	4.2	91491.35	50	93.36	90	110	
Na	23	45	H2	24545.880	ppb	0.4	133297514.67	25000	98.18	90	110	
Mg	24	45	No Gas	24495.493	ppb	3.3	250526634.67	25000	97.98	90	110	
Al	27	45	No Gas	24282.406	ppb	2.2	316104628.62	25000	97.13	90	110	
Si	28	45	H2	2497.579	ppb	0.6	4020684.75	2500	99.9	90	110	
P	31	45	No Gas	239.649	ppb	2.1	201282.16	250	95.86	90	110	
K	39	45	He	24602.563	ppb	0.1	19398410.00	25000	98.41	90	110	
Ca	40	45	H2	24543.345	ppb	0.5	294695210.67	25000	98.17	90	110	
Ti	47	45	No Gas	242.185	ppb	2.4	413070.73	250	96.87	90	110	
V	51	45	He	247.365	ppb	1.7	1727516.33	250	98.95	90	110	
Cr	52	45	He	249.019	ppb	0.6	1929322.62	250	99.61	90	110	
Mn	55	45	No Gas	1456.615	ppb	2.9	45558145.33	1500	97.11	90	110	
Fe	56	45	H2	24618.009	ppb	0.5	433463626.67	25000	98.47	90	110	
Co	59	45	No Gas	243.885	ppb	3.3	6328939.67	250	97.55	90	110	
Ni	60	45	He	228.325	ppb	0.9	687984.84	250	91.33	90	110	
Cu	63	45	He	250.265	ppb	0.3	1852947.75	250	100.11	90	110	
Zn	66	72	No Gas	225.077	ppb	1.2	1024460.83	250	90.03	90	110	
As	75	72	He	244.776	ppb	0.6	321176.94	250	97.91	90	110	
Se	78	72	H2	244.827	ppb	1.5	112894.85	250	97.93	90	110	
Sr	88	72	No Gas	230.986	ppb	1.5	8597924.10	250	92.39	90	110	
Zr	90	72	No Gas	24.454	ppb	0.6	624458.36	25	97.82	90	110	
Mo	95	115	No Gas	237.125	ppb	2.0	1750262.67	250	94.85	90	110	
Ag	107	115	No Gas	24.145	ppb	1.3	405018.25	25	96.58	90	110	
Cd	111	115	No Gas	232.599	ppb	1.4	912097.79	250	93.04	90	110	
Sn	118	115	No Gas	241.334	ppb	2.6	2625193.30	250	96.53	90	110	
Sb	123	115	No Gas	49.356	ppb	1.7	668948.26	50	98.71	90	110	
Ba	137	115	No Gas	480.939	ppb	2.6	2732034.20	500	96.19	90	110	
W	182	159	No Gas	23.917	ppb	0.9	315140.07	25	95.67	90	110	
Hg	201	159	He	2.405	ppb	0.7	4090.50	2.5	96.2	90	110	
Tl	205	159	No Gas	245.327	ppb	0.7	7602971.09	250	98.13	90	110	
Pb	208	159	No Gas	242.626	ppb	1.4	10098564.05	250	97.05	90	110	
U	238	159	No Gas	239.458	ppb	0.8	9634110.73	250	95.78	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1287510.51	1.5	1234786.94	104.27	60	120	
Sc	45	No Gas	4195135.33	1.8	3989396.83	105.16	60	120	
Sc	45	H2	2951820.75	0.0	2888959.83	102.18	60	120	
Sc	45	He	497733.19	0.8	485899.94	102.44	60	120	
Ge	72	No Gas	1152783.62	1.2	1050102.08	109.78	60	120	
Ge	72	H2	834458.08	0.9	809599.92	103.07	60	120	
Ge	72	He	319689.18	0.5	312361.44	102.35	60	120	
In	115	No Gas	6964437.46	0.9	7006089.05	99.41	60	120	
Tb	159	No Gas	9599885.73	1.8	9437591.85	101.72	60	120	
Tb	159	He	6402570.17	0.8	6285791.5	101.86	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB4
File Name	H6K19040.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 12:59:14
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	73860.58	0.4	
Be	9	6	No Gas	0.010	ppb	124.0	115.56	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	20454.87	4	
Na	23	45	H2	33.825	ppb	4.4	736337.00	40	
Mg	24	45	No Gas	3.546	ppb	20.7	71402.02	10	
Al	27	45	No Gas	3.502	ppb	18.6	63503.15	15	
Si	28	45	H2	2.425	ppb	8.1	12079.91	8	
P	31	45	No Gas	<0.000	ppb	N/A	20462.38	10	
K	39	45	He	5.293	ppb	109.7	110903.86	20	
Ca	40	45	H2	2.524	ppb	2.8	117524.76	25	
Ti	47	45	No Gas	0.062	ppb	37.8	260.67	0.5	
V	51	45	He	0.003	ppb	30.8	4009.92	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1568.76	0.2	
Mn	55	45	No Gas	0.218	ppb	23.1	19198.85	0.2	>LOD
Fe	56	45	H2	2.594	ppb	0.4	72409.10	10	
Co	59	45	No Gas	0.031	ppb	18.8	1379.41	0.15	
Ni	60	45	He	0.018	ppb	18.7	249.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	4968.91	0.4	
Zn	66	72	No Gas	0.076	ppb	20.8	1473.41	2	
As	75	72	He	0.052	ppb	18.1	373.67	0.2	
Se	78	72	H2	0.051	ppb	68.4	136.00	0.2	
Sr	88	72	No Gas	0.046	ppb	16.0	4010.60	0.2	
Zr	90	72	No Gas	0.005	ppb	27.8	306.67	2	
Mo	95	115	No Gas	0.046	ppb	12.7	557.79	0.2	
Ag	107	115	No Gas	0.006	ppb	25.8	328.89	0.08	
Cd	111	115	No Gas	0.066	ppb	21.1	421.23	0.2	
Sn	118	115	No Gas	0.116	ppb	2.2	3020.35	0.2	
Sb	123	115	No Gas	0.016	ppb	15.7	412.23	0.4	
Ba	137	115	No Gas	0.062	ppb	9.7	613.35	0.2	
W	182	159	No Gas	0.007	ppb	7.6	246.67	0.3	
Hg	201	159	He	0.014	ppb	1.3	111.00	0.1	
Tl	205	159	No Gas	0.066	ppb	30.0	3608.31	0.1	
Pb	208	159	No Gas	0.050	ppb	14.4	6734.04	0.1	
U	238	159	No Gas	0.037	ppb	9.6	2112.41	0.05	

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Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1326509.98	0.7	1234786.94	107.43	60	120	
Sc	45	No Gas	4135743.33	0.4	3989396.83	103.67	60	120	
Sc	45	H2	2891985.75	0.9	2888959.83	100.1	60	120	
Sc	45	He	493586.13	0.4	485899.94	101.58	60	120	
Ge	72	No Gas	1055307.19	7.0	1050102.08	100.5	60	120	
Ge	72	H2	808393.42	0.6	809599.92	99.85	60	120	
Ge	72	He	314123.71	0.9	312361.44	100.56	60	120	
In	115	No Gas	7166013.89	0.5	7006089.05	102.28	60	120	
Tb	159	No Gas	9562517.40	0.6	9437591.85	101.32	60	120	
Tb	159	He	6414422.00	0.2	6285791.5	102.05	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA2
File Name	H6K19041.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 13:01:48
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.504	ppb	44.9	73508.68	2	-50	50	
Be	9	6	No Gas	0.005	ppb	35.7	97.78	0.4	-50	50	
B	11	6	No Gas	<0.000	ppb	N/A	20469.35	10	-50	50	
Na	23	45	H2	107212.463	ppb	0.9	568682261.33	100000	80	120	
Mg	24	45	No Gas	105477.962	ppb	3.3	1052103744.00	100000	80	120	
Al	27	45	No Gas	105150.673	ppb	2.9	1334995260.11	100000	80	120	
Sl	28	45	H2	4.888	ppb	3.0	15957.82	50	-50	50	
P	31	45	No Gas	113442.262	ppb	2.2	82560936.00	100000	80	120	
K	39	45	He	105910.382	ppb	0.2	82088304.00	100000	80	120	
Ca	40	45	H2	109361.582	ppb	0.7	1286563712.00	100000	80	120	
Ti	47	45	No Gas	2535.105	ppb	2.2	4215465.42	2000	80	120	> +/- 20%
V	51	45	He	0.008	ppb	246.6	4022.59	1	-50	50	
Cr	52	45	He	2.129	ppb	1.0	17959.08	1	-50	50	> +/- 20%
Mn	55	45	No Gas	0.419	ppb	4.1	25129.73	1	-50	50	
Fe	56	45	H2	107983.564	ppb	0.3	1863250218.67	100000	80	120	
Co	59	45	No Gas	0.165	ppb	5.1	4742.83	0.75	-50	50	
Nl	60	45	He	0.152	ppb	7.2	644.68	1	-50	50	
Cu	63	45	He	<0.000	ppb	N/A	4740.16	2	-50	50	
Zn	66	72	No Gas	1.518	ppb	7.9	7621.47	20	-50	50	
As	75	72	He	0.098	ppb	3.4	430.01	1	-50	50	
Se	78	72	H2	0.368	ppb	8.7	277.33	1	-50	50	
Sr	88	72	No Gas	1.071	ppb	5.5	39727.75	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.130	ppb	15.6	3290.42	10	-50	50	
Mo	95	115	No Gas	2121.423	ppb	1.2	14986402.74	2000	80	120	
Ag	107	115	No Gas	0.302	ppb	1.9	5049.86	0.4	-50	50	> +/- 20%
Cd	111	115	No Gas	0.082	ppb	49.2	450.32	1	-50	50	
Sn	118	115	No Gas	0.136	ppb	2.0	3015.91	1	-50	50	
Ba	137	115	No Gas	0.360	ppb	4.0	2191.30	1	-50	50	
W	182	159	No Gas	0.136	ppb	2.5	1903.48	1	-50	50	
Hg	201	159	He	0.011	ppb	69.8	102.50	0.5	-50	50	
Tl	205	159	No Gas	<0.000	ppb	N/A	1501.20	0.5	-50	50	
Pb	208	159	No Gas	0.086	ppb	8.9	8068.82	0.5	-50	50	
U	238	159	No Gas	<0.000	ppb	N/A	595.57	0.25	-50	50	

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Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1251331.65	2.2	1234786.94	101.34	60	120	
Sc	45	No Gas	4090612.50	0.8	3989396.83	102.54	60	120	
Sc	45	H2	2892806.33	0.7	2888959.83	100.13	60	120	
Sc	45	He	491373.28	0.6	485899.94	101.13	60	120	
Ge	72	No Gas	1078456.45	5.4	1050102.08	102.7	60	120	
Ge	72	H2	808168.75	1.1	809599.92	99.82	60	120	
Ge	72	He	312053.18	0.3	312361.44	99.9	60	120	
In	115	No Gas	6665609.12	1.9	7006089.05	95.14	60	120	
Tb	159	No Gas	9405386.02	1.3	9437591.85	99.66	60	120	
Tb	159	He	6261792.33	0.8	6285791.5	99.62	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB2
File Name	H6K19042.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\K\IH6K19.b
Acq Time	2021-11-18 13:08:00
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6K19003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	19.553	ppb	2.1	202372.70	20	80	120	
Be	9	6	No Gas	19.781	ppb	0.7	43610.82	20	80	120	
B	11	6	No Gas	17.209	ppb	3.4	46777.63	20	80	120	
Na	23	45	H2	99886.732	ppb	0.4	537840394.67	100000	80	120	
Mg	24	45	No Gas	98664.777	ppb	3.1	990452629.33	100000	80	120	
Al	27	45	No Gas	101084.771	ppb	3.3	1291718087.42	100000	80	120	
Si	28	45	H2	190.578	ppb	1.4	312916.09	200	80	120	
P	31	45	No Gas	106388.759	ppb	2.3	77929624.00	100000	80	120	
K	39	45	He	100727.536	ppb	0.6	76815930.67	100000	80	120	
Ca	40	45	H2	101981.042	ppb	1.0	1217716053.33	100000	80	120	
Ti	47	45	No Gas	2426.123	ppb	3.0	4060230.83	2000	80	120	> +/- 20%
V	51	45	He	19.096	ppb	1.2	133142.49	20	80	120	
Cr	52	45	He	21.644	ppb	0.9	164392.49	20	80	120	
Mn	55	45	No Gas	17.996	ppb	2.0	564736.23	20	80	120	
Fe	56	45	H2	100120.238	ppb	1.3	1753435904.00	100000	80	120	
Co	59	45	No Gas	17.813	ppb	2.7	454275.96	20	80	120	
Ni	60	45	He	18.140	ppb	0.8	53267.06	20	80	120	
Cu	63	45	He	18.480	ppb	1.1	140864.39	20	80	120	
Zn	66	72	No Gas	18.599	ppb	6.1	78223.98	20	80	120	
As	75	72	He	19.864	ppb	0.4	25244.21	20	80	120	
Se	78	72	H2	20.813	ppb	1.2	9347.57	20	80	120	
Sr	88	72	No Gas	20.058	ppb	5.6	682799.05	20	80	120	
Zr	90	72	No Gas	16.741	ppb	4.8	389877.38	20	80	120	
Mo	95	115	No Gas	2030.418	ppb	1.6	14400089.43	2000	80	120	
Ag	107	115	No Gas	19.411	ppb	2.0	312968.99	20	80	120	
Cd	111	115	No Gas	16.941	ppb	0.9	63971.84	20	80	120	
Sn	118	115	No Gas	18.566	ppb	1.7	195540.95	20	80	120	
Sb	123	115	No Gas	17.515	ppb	1.8	228234.66	20	80	120	
Ba	137	115	No Gas	19.108	ppb	1.7	104528.18	20	80	120	
W	182	159	No Gas	18.632	ppb	1.2	243289.11	20	80	120	
Hg	201	159	He	2.091	ppb	1.1	3527.66	2	80	120	
Tl	205	159	No Gas	17.937	ppb	2.0	552318.62	20	80	120	
Pb	208	159	No Gas	18.108	ppb	1.4	751194.45	20	80	120	
U	238	159	No Gas	18.343	ppb	0.6	731770.82	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1245563.96	0.6	1234786.94	100.87	60	120	
Sc	45	No Gas	4117644.33	0.6	3989396.83	103.21	60	120	
Sc	45	H2	2936299.33	0.8	2888959.83	101.64	60	120	
Sc	45	He	483441.03	0.5	485899.94	99.49	60	120	
Ge	72	No Gas	1053483.81	6.9	1050102.08	100.32	60	120	
Ge	72	H2	803795.17	0.5	809599.92	99.28	60	120	
Ge	72	He	306268.90	0.5	312361.44	98.05	60	120	
In	115	No Gas	6692901.77	0.4	7006089.05	95.53	60	120	
Tb	159	No Gas	9512296.84	0.8	9437591.85	100.79	60	120	
Tb	159	He	6329285.33	0.6	6285791.5	100.69	60	120	

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS METALS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # SM5A-05-01-02

ALL SAMPLES PH<2

Book #: EIM-089
Batch: IMK016W
Matrix: WATER
Digestor ID: E

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	

Start	Temp	End	Temp
	91.1 °C		93.2 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A-007-07-22	.15
LCS-2	↓ -07-23	.15
MS	SAME SPIKE SOLN VOL AS LCS	1.2
Blank Soil (Bead)	N/A	N/A
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SW1A-011-02-05	.5+1.0
HCl	SW1A-009-17-09	.25+.25
H_2O_2	N/A	N/A
HNO_3(1:1)	↓	↓
Au	SM6A-007-07-25	.1
pH Strip (0-14)	HC160347	N/A
Digestate Location	METALS	
Extract Location	N/A	

☑ Reagent Water ID: SW1A-011-03-02
☑ Thermometer ID: 21G02426/E50
☑ Pipette ID: 742766331
☐ Pipette ID:
☐ Pipette ID:
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask

Prepared By: CK
Standard Added By: CK Witnessed By: LM
Extract Rcvd By: LM Checked By: CK

EMAX LABORATORIES, INC.

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
21IMK016W01	IMK016WB	50	ml	11/16/21 11:24	50	50	50	1	
21IMK016W02	IMK016WL	50	ml	11/16/21 11:24	50	50	50	1	
21IMK016W03	IMK016WC	50	ml	11/16/21 11:24	50	50	50	1	
21IMK016W04	K110-01	50	ml	11/16/21 11:24	50	50	50	1	TOTAL
21IMK016W05	K110-01M	50	ml	11/16/21 11:24	50	50	50	1	TOTAL
21IMK016W06	K110-01S	50	ml	11/16/21 11:24	50	50	50	1	TOTAL
21IMK016W07	K110-02	50	ml	11/16/21 11:24	50	50	50	1	TOTAL
21IMK016W08	K110-03	50	ml	11/16/21 11:24	50	50	50	1	TOTAL
21IMK016W09	K110-04	50	ml	11/16/21 11:24	50	50	50	1	TOTAL
21IMK016W10	K052-01	50	ml	11/16/21 11:24	50	50	50	1	TOTAL
21IMK016W11	K137-01	50	ml	11/16/21 11:24	50	50	50	1	DISSOLVED
21IMK016W12	K137-02	50	ml	11/16/21 11:24	50	50	50	1	DISSOLVED

CK 11-16-21

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 11/16/21 11:55 Prepared By: CKaing

☑ Digestion Ended @ 11/16/21 14:27 Checked By: CK

Comments: Date 11-16-21

SOP EMAX-6020 Rev. 13

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21K137

METHOD SW7470A (DISSOLVED)
DISSOLVED MERCURY BY COLD VAPOR

A total of two(2) water samples were received on 11/16/21 to be analyzed for Dissolved Mercury by Cold Vapor in accordance with Method SW7470A (DISSOLVED) and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Mercury was not detected in HGK025WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. HGK025WL/HGK025WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
DISSOLVED MERCURY BY COLD VAPOR

Client : ARCADIS
Project : PG&E TOPOCK-GMP

SDG NO. : 21K137
Instrument ID : 47

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	HGK025WB	1	NA	11/18/2117:19	11/18/2113:53	M47K014012	M47K014	21HGK025W	Method Blank
LCS1W	HGK025WL	1	NA	11/18/2117:21	11/18/2113:53	M47K014013	M47K014	21HGK025W	Lab Control Sample (LCS)
LCD1W	HGK025WC	1	NA	11/18/2117:22	11/18/2113:53	M47K014014	M47K014	21HGK025W	LCS Duplicate
MTS-1-Q421	K137-01	1	NA	11/18/2118:00	11/18/2113:53	M47K014032	M47K014	21HGK025W	Field Sample
MTS-2-Q421	K137-02	1	NA	11/18/2118:02	11/18/2113:53	M47K014033	M47K014	21HGK025W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW7470A (DISSOLVED)
DISSOLVED MERCURY BY COLD VAPOR

Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 21K137
Matrix : WATER
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DILT'N FACTOR	MOIST (%)	RL (ug/L)	MDL (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGK025WB	ND	1	NA	0.500	0.200	11/18/2117:19	11/18/2113:53	M47K014012	M47K014	21HGK025W	NA	NA
LCS1W	HGK025WL	2.51	1	NA	0.500	0.200	11/18/2117:21	11/18/2113:53	M47K014013	M47K014	21HGK025W	NA	NA
LCD1W	HGK025WC	2.47	1	NA	0.500	0.200	11/18/2117:22	11/18/2113:53	M47K014014	M47K014	21HGK025W	NA	NA
MTS-1-Q421	K137-01	ND	1	NA	0.500	0.200	11/18/2118:00	11/18/2113:53	M47K014032	M47K014	21HGK025W	11/15/2109:40	11/16/21
MTS-2-Q421	K137-02	ND	1	NA	0.500	0.200	11/18/2118:02	11/18/2113:53	M47K014033	M47K014	21HGK025W	11/15/2109:50	11/16/21

Note: Detection limits are reported relative to sample result significant figures.

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21K137
METHOD : METHOD SW7470A (DISSOLVED)

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: HGK025WB	HGK025WL	HGK025WC
LAB FILE ID	: M47K014012	M47K014013	M47K014014
DATE PREPARED	: 11/18/2113:53	11/18/2113:53	11/18/2113:53
DATE ANALYZED	: 11/18/2117:19	11/18/2117:21	11/18/2117:22
PREP BATCH	: 21HGK025W	21HGK025W	21HGK025W
CALIBRATION REF	: M47K014	M47K014	M47K014

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Mercury	ND	2.50	2.51	100	2.50	2.47	99	2	75-125	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 11/18/21 **Start Time:** 16:56

End Date: 11/18/21 **End Time:** 20:14

Comments:

QC OK

CCV7 out of QC limit, Associated Samples were reanalyzed

Book #:	A47-128
Instrument No.:	47
Analytical Sequence/Batch:	M47K014
Method File:	HG1
Micropipette ID:	☐ 339342032
Micropipette ID:	☑ HG-03
Micropipette ID:	☑ A42780082
Micropipette ID:	☑ HG-06
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-7470	8
☐ EMAX-7471	9
☑ EMAX-245.1	4
☐ EMAX-	

STANDARDS ID	
S1	BLANK
S2	SM3B-21-19-08
S3	↓
S4	↓
S5	↓
S6	↓
CCV	↓
ICV	SM3B-21-19-09
LCS	↓
Analytical Spike	
	SM3B-21-19-10 TV 3ug/L

Analyzed By: NT

Date: 11/18/21

Disposed By:

Date:

"M47K014"

EMAX1fid	EMAX1sid	conc	Raw_resp	rsd/rf	adatetime	DF
M47K014001	STD01REP1	0	3957		11/18/2116:56	1
M47K014002	STD02REP1	.2	26573		11/18/2116:58	1
M47K014003	STD03REP1	.5	47657		11/18/2117:00	1
M47K014004	STD04REP1	1	88260		11/18/2117:03	1
M47K014005	STD05REP1	2	180844		11/18/2117:05	1
M47K014006	STD06REP1	5	460504		11/18/2117:07	1
M47K014007	ICV	1.94	179459	0	11/18/2117:10	1
M47K014008	ICB	.035	5651	0	11/18/2117:11	1
M47K014009	MRLK1801	.528	50623	0	11/18/2117:13	1
M47K014010	CCV1	1.91	176763	0	11/18/2117:15	1
M47K014011	CCB1	.072	8974	0	11/18/2117:17	1
M47K014012	HGK025WB	.02	4290	0	11/18/2117:19	1
M47K014013	HGK025WL	2.51	230979	0	11/18/2117:21	1
M47K014014	HGK025WC	2.47	227926	0	11/18/2117:22	1
M47K014015	K100-01	.05	6978	0	11/18/2117:24	1
M47K014016	K101-01	.047	6710	0	11/18/2117:26	1
M47K014017	K110-01	.002	2601	0	11/18/2117:29	1
M47K014018	K110-02	-.027	20	0	11/18/2117:31	1
M47K014019	K110-03	.085	10237	0	11/18/2117:34	1
M47K014020	K110-04	.008	3181	0	11/18/2117:36	1
M47K014021	K122-01	.024	4606	0	11/18/2117:38	1
M47K014022	CCV2	1.91	176641	0	11/18/2117:40	1
M47K014023	CCB2	.031	5240	0	11/18/2117:41	1
M47K014024	K121-01	.053	7315	0	11/18/2117:43	1
M47K014025	K121-02	.012	3510	0	11/18/2117:46	1
M47K014026	K121-03	.055	7460	0	11/18/2117:48	1
M47K014027	K121-04	.062	8084	0	11/18/2117:50	1
M47K014028	K121-05	-.008	1684	0	11/18/2117:52	1
M47K014029	K121-06	.013	3677	0	11/18/2117:54	1
M47K014030	K121-07	.044	6483	0	11/18/2117:56	1
M47K014031	K121-08	.027	4890	0	11/18/2117:58	1
M47K014032	K137-01	.064	8279	0	11/18/2118:00	1
M47K014033	K137-02	.138	14989	0	11/18/2118:02	1
M47K014034	CCV3	1.93	178390	0	11/18/2118:05	1
M47K014035	CCB3	.067	8562	0	11/18/2118:06	1
M47K014036	K129-01A	2.94	270571	0	11/18/2118:08	1
M47K014037	K129-01	.069	8724	0	11/18/2118:11	1
M47K014038	K129-01J	.057	7681	0	11/18/2118:13	5
M47K014039	K129-01M	2.63	242079	0	11/18/2118:16	1
M47K014040	K129-01S	2.65	243730	0	11/18/2118:19	1
M47K014041	K129-02	.024	4634	0	11/18/2118:21	1
M47K014042	K129-07	.043	6359	0	11/18/2118:23	1
M47K014043	HGK026WB	.013	3609	0	11/18/2118:25	1
M47K014044	HGK026WL	2.5	230364	0	11/18/2118:27	1
M47K014045	HGK026WC	2.48	228502	0	11/18/2118:29	1
M47K014046	CCV4	1.94	179591	0	11/18/2118:31	1
M47K014047	CCB4	.067	8556	0	11/18/2118:33	1
M47K014048	TXK004SB	.047	6769	0	11/18/2118:35	1
M47K014049	K453-01	.182	19009	0	11/18/2118:37	1
M47K014050	K700-01	-.013	1269	0	11/18/2118:39	1
M47K014051	K085-01A	3.03	278215	0	11/18/2118:40	1
M47K014052	K085-01	.019	4187	0	11/18/2118:42	1
M47K014053	K085-01J	.024	4665	0	11/18/2118:44	5
M47K014054	K085-01M	2.47	227195	0	11/18/2118:46	1
M47K014055	K085-01S	2.53	232730	0	11/18/2118:48	1
M47K014056	K085-02	.084	10121	0	11/18/2118:50	1
M47K014057	K085-03	.054	7335	0	11/18/2118:53	1
M47K014058	CCV5	1.93	178538	0	11/18/2118:55	1
M47K014059	CCB5	.025	4702	0	11/18/2118:56	1
M47K014060	K085-04	.022	4446	0	11/18/2118:59	1
M47K014061	K085-05	.01	3351	0	11/18/2119:01	1
M47K014062	K085-06	.015	3789	0	11/18/2119:03	1
M47K014063	K085-07	-.022	426	0	11/18/2119:05	1
M47K014064	K085-08	.034	5508	0	11/18/2119:07	1
M47K014065	K085-09	-.022	421	0	11/18/2119:09	1
M47K014066	TXK005WB	.006	3011	0	11/18/2119:11	1
M47K014067	CCV6	1.93	178726	0	11/18/2119:13	1
M47K014068	CCB6	.021	4384	0	11/18/2119:15	1
M47K014069	K066-01	.017	4001	0	11/18/2119:17	1
M47K014070	K066-02	-.001	2401	0	11/18/2119:18	1
M47K014071	K446-01	-.044	-1526	0	11/18/2119:20	1
M47K014072	K446-02	-.022	488	0	11/18/2119:22	1
M47K014073	K446-03	.066	8457	0	11/18/2119:24	1

M47K014074	K446-04	.071	8880	0	11/18/2119:26 1
M47K014075	K447-01	.025	4767	0	11/18/2119:27 1
M47K014076	K447-02	.057	7681	0	11/18/2119:29 1
M47K014077	CCV7	1.7	157458	0	11/18/2119:31 1
M47K014078	CCV7	1.85	171082	0	11/18/2119:37 1
M47K014079	CCV7	1.97	181635	0	11/18/2119:39 1
M47K014080	CCB7	.059	7849	0	11/18/2119:41 1
M47K014081	K066-01N	-.013	1293	0	11/18/2119:45 1
M47K014082	K066-02N	.004	2857	0	11/18/2119:47 1
M47K014083	CCV8	1.91	176596	0	11/18/2119:48 1
M47K014084	CCB8	.006	2969	0	11/18/2119:51 1
M47K014085	K446-01N	.032	5398	0	11/18/2119:55 1
M47K014086	K446-02N	.018	4127	0	11/18/2119:57 1
M47K014087	K446-03N	.008	3219	0	11/18/2119:59 1
M47K014088	K446-04N	-.024	299	0	11/18/2120:00 1
M47K014089	CCV9	1.96	180851	0	11/18/2120:03 1
M47K014090	CCB9	.049	6961	0	11/18/2120:05 1
M47K014091	K447-01N	.002	2658	0	11/18/2120:08 1
M47K014092	K447-02N	-.007	1850	0	11/18/2120:10 1
M47K014093	CCV10	1.95	179923	0	11/18/2120:12 1
M47K014094	CCB10	.025	4748	0	11/18/2120:14 1

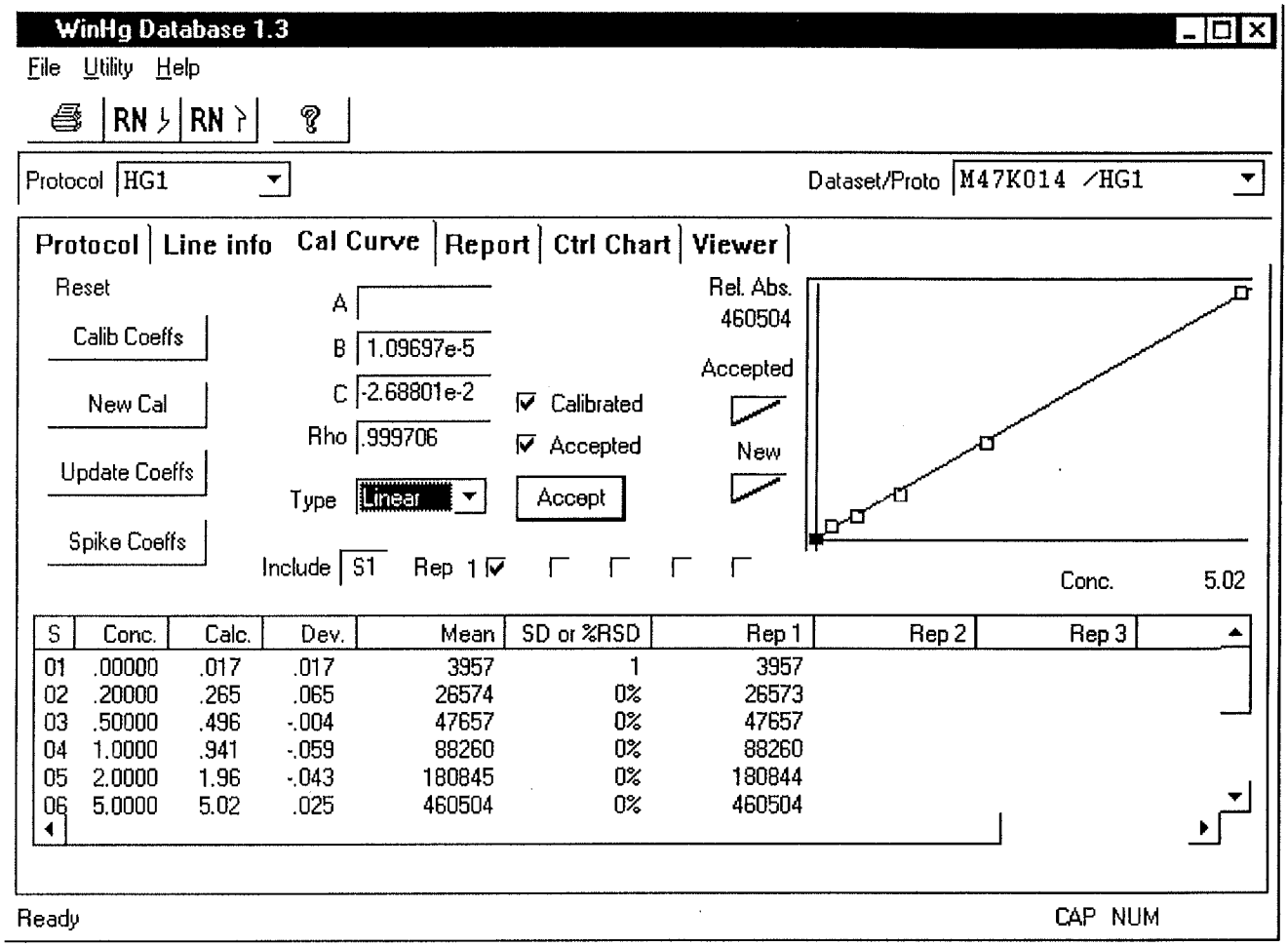
M47K014

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	ICV		1.0000	1.0000	
2	ICB		1.0000	1.0000	
3	MRLK1801	0.5	1.0000	1.0000	
4	CCV1		1.0000	1.0000	
5	CCB1		1.0000	1.0000	
6	HGK025WB		1.0000	1.0000	
7	HGK025WL		1.0000	1.0000	
8	HGK025WC		1.0000	1.0000	
9	K100-01		1.0000	1.0000	
10	K101-01		1.0000	1.0000	
11	K110-01		1.0000	1.0000	
12	K110-02		1.0000	1.0000	
13	K110-03		1.0000	1.0000	
14	K110-04		1.0000	1.0000	
15	K122-01		1.0000	1.0000	
16	CCV2		1.0000	1.0000	
17	CCB2		1.0000	1.0000	
18	K121-01		1.0000	1.0000	
19	K121-02		1.0000	1.0000	
20	K121-03		1.0000	1.0000	
21	K121-04		1.0000	1.0000	
22	K121-05		1.0000	1.0000	
23	K121-06		1.0000	1.0000	
24	K121-07		1.0000	1.0000	
25	K121-08		1.0000	1.0000	
26	K137-01		1.0000	1.0000	
27	K137-02		1.0000	1.0000	
28	CCV3		1.0000	1.0000	
29	CCB3		1.0000	1.0000	
30	K129-01A		1.0000	1.0000	
31	K129-01		1.0000	1.0000	
32	K129-01J	5X	1.0000	1.0000	
33	K129-01M		1.0000	1.0000	
34	K129-01S		1.0000	1.0000	
35	K129-02		1.0000	1.0000	
36	K129-07		1.0000	1.0000	
37	HGK026WB		1.0000	1.0000	
38	HGK026WL		1.0000	1.0000	
39	HGK026WC		1.0000	1.0000	
40	CCV4		1.0000	1.0000	
41	CCB4		1.0000	1.0000	
42	TXK004SB	TCLP	1.0000	1.0000	
43	K453-01	TCLP	1.0000	1.0000	
44	K700-01	TCLP	1.0000	1.0000	

NT 11/18/21

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	K085-01A	TCLP	1.0000	1.0000	
2	K085-01	TCLP	1.0000	1.0000	
3	K085-01J	5X TCLP	1.0000	1.0000	
4	K085-01M	TCLP	1.0000	1.0000	
5	K085-01S	TCLP	1.0000	1.0000	
6	K085-02	TCLP	1.0000	1.0000	
7	K085-03	TCLP	1.0000	1.0000	
8	CCV5		1.0000	1.0000	
9	CCB5		1.0000	1.0000	
10	K085-04	TCLP	1.0000	1.0000	
11	K085-05	TCLP	1.0000	1.0000	
12	K085-06	TCLP	1.0000	1.0000	
13	K085-07	TCLP	1.0000	1.0000	
14	K085-08	TCLP	1.0000	1.0000	
15	K085-09	TCLP	1.0000	1.0000	
16	TXK005WB	TCLP	1.0000	1.0000	
17	CCV6		1.0000	1.0000	
18	CCB6		1.0000	1.0000	
19	K066-01	TCLP	1.0000	1.0000	
20	K066-02	TCLP	1.0000	1.0000	
21	K446-01	TCLP	1.0000	1.0000	
22	K446-02	TCLP	1.0000	1.0000	
23	K446-03	TCLP	1.0000	1.0000	
24	K446-04	TCLP	1.0000	1.0000	
25	K447-01	TCLP	1.0000	1.0000	
26	K447-02	TCLP	1.0000	1.0000	
27	CCV7		1.0000	1.0000	
28	CCV7		1.0000	1.0000	
29	CCV7		1.0000	1.0000	
30	CCB7		1.0000	1.0000	
31	K066-01N		1.0000	1.0000	
32	K066-02N		1.0000	1.0000	
33	CCV8		1.0000	1.0000	
34	CCB8		1.0000	1.0000	
35	K446-01N		1.0000	1.0000	
36	K446-02N		1.0000	1.0000	
37	K446-03N		1.0000	1.0000	
38	K446-04N		1.0000	1.0000	
39	CCV9		1.0000	1.0000	
40	CCB9		1.0000	1.0000	
41	K447-01N		1.0000	1.0000	
42	K447-02N		1.0000	1.0000	
43	CCV10		1.0000	1.0000	
44	CCB10		1.0000	1.0000	

NT 11/18/21


WinHg Database 1.3
File Utility Help
RN
RN
Protocol HG1
Dataset/Proto M47K014 /HG1
Protocol
Line info
Cal Curve
Report
Ctrl Chart
Viewer
Reset
Calib Coeffs
New Cal
Update Coeffs
Spike Coeffs
A
B 1.09697e-5
C -2.68801e-2
Rho .999706
Type Linear
Calibrated
Accepted
Accept
Include S1
Rep 1
Rel. Abs.
460504
Accepted
New
Conc. 5.02
S Conc. Calc. Dev. Mean SD or %RSD Rep 1 Rep 2 Rep 3
01 .00000 .017 .017 3957 1 3957
02 .20000 .265 .065 26574 0% 26573
03 .50000 .496 -.004 47657 0% 47657
04 1.0000 .941 -.059 88260 0% 88260
05 2.0000 1.96 -.043 180845 0% 180844
06 5.0000 5.02 .025 460504 0% 460504
Ready
CAP NUM

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1				Seq: 1	16:56:18 18 Nov 21	HG		
Hg	.000	ppb	3957					
*** Standard: 2 Rep: 1				Seq: 2	16:58:52 18 Nov 21	HG		
Hg	.200	ppb	26573					
*** Standard: 3 Rep: 1				Seq: 3	17:00:31 18 Nov 21	HG		
Hg	.500	ppb	47657					
*** Standard: 4 Rep: 1				Seq: 4	17:03:16 18 Nov 21	HG		
Hg	1.00	ppb	88260					
*** Standard: 5 Rep: 1				Seq: 5	17:05:01 18 Nov 21	HG		
Hg	2.00	ppb	180844					
*** Standard: 6 Rep: 1				Seq: 6	17:07:22 18 Nov 21	HG		
Hg	5.00	ppb	460504					
*** Sample ID: ICV				Seq: 7	17:10:04 18 Nov 21	HG		
Hg	1.94	ppb	179459					
*** Sample ID: ICB				Seq: 8	17:11:42 18 Nov 21	HG		
Hg	.035	ppb	5651					
*** Sample ID: MRLK1801				Seq: 9	17:13:31 18 Nov 21	HG		
			0.5					
Hg	.528	ppb	50623					
*** Sample ID: CCV1				Seq: 10	17:15:31 18 Nov 21	HG		
Hg	1.91	ppb	176763					
*** Sample ID: CCB1				Seq: 11	17:17:41 18 Nov 21	HG		
Hg	.072	ppb	8974					
*** Sample ID: HGK025WB				Seq: 12	17:19:19 18 Nov 21	HG		
Hg	.020	ppb	4290					
*** Sample ID: HGK025WL				Seq: 13	17:21:03 18 Nov 21	HG		
Hg	2.51	ppb	230979					
*** Sample ID: HGK025WC				Seq: 14	17:22:52 18 Nov 21	HG		
Hg	2.47	ppb	227926					
*** Sample ID: K100-01				Seq: 15	17:24:54 18 Nov 21	HG		
Hg	.050	ppb	6978					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: K101-01				Seq: 16	17:26:58 18 Nov 21	HG		
Hg	.047	ppb	6710					
*** Sample ID: K110-01				Seq: 17	17:29:19 18 Nov 21	HG		
Hg	.002	ppb	2601					
*** Sample ID: K110-02				Seq: 18	17:31:31 18 Nov 21	HG		
Hg	-.027	ppb	20					
*** Sample ID: K110-03				Seq: 19	17:34:09 18 Nov 21	HG		
Hg	.085	ppb	10237					
*** Sample ID: K110-04				Seq: 20	17:36:19 18 Nov 21	HG		
Hg	.008	ppb	3181					
*** Sample ID: K122-01				Seq: 21	17:38:10 18 Nov 21	HG		
Hg	.024	ppb	4606					
*** Sample ID: CCV2				Seq: 22	17:40:04 18 Nov 21	HG		
Hg	1.91	ppb	176641					
*** Sample ID: CCB2				Seq: 23	17:41:43 18 Nov 21	HG		
Hg	.031	ppb	5240					
*** Sample ID: K121-01				Seq: 24	17:43:33 18 Nov 21	HG		
Hg	.053	ppb	7315					
*** Sample ID: K121-02				Seq: 25	17:46:06 18 Nov 21	HG		
Hg	.012	ppb	3510					
*** Sample ID: K121-03				Seq: 26	17:48:27 18 Nov 21	HG		
Hg	.055	ppb	7460					
*** Sample ID: K121-04				Seq: 27	17:50:50 18 Nov 21	HG		
Hg	.062	ppb	8084					
*** Sample ID: K121-05				Seq: 28	17:52:31 18 Nov 21	HG		
Hg	-.008	ppb	1684					
*** Sample ID: K121-06				Seq: 29	17:54:53 18 Nov 21	HG		
Hg	.013	ppb	3677					
*** Sample ID: K121-07				Seq: 30	17:56:34 18 Nov 21	HG		
Hg	.044	ppb	6483					

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: K121-08				Seq: 31		17:58:28 18 Nov 21			HG
Hg	.027	ppb	4890						
*** Sample ID: K137-01				Seq: 32		18:00:16 18 Nov 21			HG
Hg	.064	ppb	8279						
*** Sample ID: K137-02				Seq: 33		18:02:46 18 Nov 21			HG
Hg	.138	ppb	14989						
*** Sample ID: CCV3				Seq: 34		18:05:11 18 Nov 21			HG
Hg	1.93	ppb	178390						
*** Sample ID: CCB3				Seq: 35		18:06:55 18 Nov 21			HG
Hg	.067	ppb	8562						
*** Sample ID: K129-01A				Seq: 36		18:08:37 18 Nov 21			HG
Hg	2.94	ppb	270571						
*** Sample ID: K129-01				Seq: 37		18:11:18 18 Nov 21			HG
Hg	.069	ppb	8724						
*** Sample ID: K129-01J				Seq: 38		18:13:02 18 Nov 21			HG
			5X						
Hg	.057	ppb	7681						
*** Sample ID: K129-01M				Seq: 39		18:16:04 18 Nov 21			HG
Hg	2.63	ppb	242079						
*** Sample ID: K129-01S				Seq: 40		18:19:15 18 Nov 21			HG
Hg	2.65	ppb	243730						
*** Sample ID: K129-02				Seq: 41		18:21:36 18 Nov 21			HG
Hg	.024	ppb	4634						
*** Sample ID: K129-07				Seq: 42		18:23:19 18 Nov 21			HG
Hg	.043	ppb	6359						
*** Sample ID: HGK026WB				Seq: 43		18:25:39 18 Nov 21			HG
Hg	.013	ppb	3609						
*** Sample ID: HGK026WL				Seq: 44		18:27:24 18 Nov 21			HG
Hg	2.50	ppb	230364						
*** Sample ID: HGK026WC				Seq: 45		18:29:18 18 Nov 21			HG
Hg	2.48	ppb	228502						

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: CCV4				Seq: 46	18:31:07 18 Nov 21	HG		
Hg	1.94	ppb	179591					
*** Sample ID: CCB4				Seq: 47	18:33:18 18 Nov 21	HG		
Hg	.067	ppb	8556					
*** Sample ID: TXK004SB				Seq: 48	18:35:29 18 Nov 21	HG		
			TCLP					
Hg	.047	ppb	6769					
*** Sample ID: K453-01				Seq: 49	18:37:22 18 Nov 21	HG		
			TCLP					
Hg	.182	ppb	19009					
*** Sample ID: K700-01				Seq: 50	18:39:06 18 Nov 21	HG		
			TCLP					
Hg	-.013	ppb	1269					
*** Sample ID: K085-01A				Seq: 51	18:40:59 18 Nov 21	HG		
			TCLP					
Hg	3.03	ppb	278215					
*** Sample ID: K085-01				Seq: 52	18:42:43 18 Nov 21	HG		
			TCLP					
Hg	.019	ppb	4187					
*** Sample ID: K085-01J				Seq: 53	18:44:33 18 Nov 21	HG		
			5X TCLP					
Hg	.024	ppb	4665					
*** Sample ID: K085-01M				Seq: 54	18:46:12 18 Nov 21	HG		
			TCLP					
Hg	2.47	ppb	227195					
*** Sample ID: K085-01S				Seq: 55	18:48:35 18 Nov 21	HG		
			TCLP					
Hg	2.53	ppb	232730					
*** Sample ID: K085-02				Seq: 56	18:50:18 18 Nov 21	HG		
			TCLP					
Hg	.084	ppb	10121					
*** Sample ID: K085-03				Seq: 57	18:53:01 18 Nov 21	HG		
			TCLP					
Hg	.054	ppb	7335					
*** Sample ID: CCV5				Seq: 58	18:55:05 18 Nov 21	HG		
Hg	1.93	ppb	178538					
*** Sample ID: CCB5				Seq: 59	18:56:58 18 Nov 21	HG		
Hg	.025	ppb	4702					
*** Sample ID: K085-04				Seq: 60	18:59:17 18 Nov 21	HG		
			TCLP					
Hg	.022	ppb	4446					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: K085-05				Seq: 61	19:01:52 18 Nov 21	HG		
			TCLP					
Hg	.010	ppb	3351					
*** Sample ID: K085-06				Seq: 62	19:03:48 18 Nov 21	HG		
			TCLP					
Hg	.015	ppb	3789					
*** Sample ID: K085-07				Seq: 63	19:05:31 18 Nov 21	HG		
			TCLP					
Hg	-.022	ppb	426					
*** Sample ID: K085-08				Seq: 64	19:07:42 18 Nov 21	HG		
			TCLP					
Hg	.034	ppb	5508					
*** Sample ID: K085-09				Seq: 65	19:09:32 18 Nov 21	HG		
			TCLP					
Hg	-.022	ppb	421					
*** Sample ID: TXK005WB				Seq: 66	19:11:34 18 Nov 21	HG		
			TCLP					
Hg	.006	ppb	3011					
*** Sample ID: CCV6				Seq: 67	19:13:16 18 Nov 21	HG		
Hg	1.93	ppb	178726					
*** Sample ID: CCB6				Seq: 68	19:15:00 18 Nov 21	HG		
Hg	.021	ppb	4384					
*** Sample ID: K066-01				Seq: 69	19:17:02 18 Nov 21	HG		
			TCLP					
Hg	.017	ppb	4001					
*** Sample ID: K066-02				Seq: 70	19:18:45 18 Nov 21	HG		
			TCLP					
Hg	-.001	ppb	2401					
*** Sample ID: K446-01				Seq: 71	19:20:26 18 Nov 21	HG		
			TCLP					
Hg	-.044	ppb	-1526					
*** Sample ID: K446-02				Seq: 72	19:22:38 18 Nov 21	HG		
			TCLP					
Hg	-.022	ppb	488					
*** Sample ID: K446-03				Seq: 73	19:24:20 18 Nov 21	HG		
			TCLP					
Hg	.066	ppb	8457					
*** Sample ID: K446-04				Seq: 74	19:26:12 18 Nov 21	HG		
			TCLP					
Hg	.071	ppb	8880					
*** Sample ID: K447-01				Seq: 75	19:27:57 18 Nov 21	HG		
			TCLP					
Hg	.025	ppb	4767					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: K447-02				Seq: 76	19:29:38 18 Nov 21		HG	
			TCLP					
Hg	.057	ppb	7681					
*** Sample ID: CCV7				Seq: 77	19:31:59 18 Nov 21		HG	
Hg	1.70	ppb	157458					
*** Sample ID: CCV7				Seq: 78	19:37:42 18 Nov 21		HG	
Hg	1.85	ppb	171082					
*** Sample ID: CCV7				Seq: 79	19:39:25 18 Nov 21		HG	
Hg	1.97	ppb	181635					
*** Sample ID: CCB7				Seq: 80	19:41:16 18 Nov 21		HG	
Hg	.059	ppb	7849					
*** Sample ID: K066-01N				Seq: 81	19:45:17 18 Nov 21		HG	
Hg	-.013	ppb	1293					
*** Sample ID: K066-02N				Seq: 82	19:47:02 18 Nov 21		HG	
Hg	.004	ppb	2857					
*** Sample ID: CCV8				Seq: 83	19:48:55 18 Nov 21		HG	
Hg	1.91	ppb	176596					
*** Sample ID: CCB8				Seq: 84	19:51:07 18 Nov 21		HG	
Hg	.006	ppb	2969					
*** Sample ID: K446-01N				Seq: 85	19:55:34 18 Nov 21		HG	
Hg	.032	ppb	5398					
*** Sample ID: K446-02N				Seq: 86	19:57:14 18 Nov 21		HG	
Hg	.018	ppb	4127					
*** Sample ID: K446-03N				Seq: 87	19:59:00 18 Nov 21		HG	
Hg	.008	ppb	3219					
*** Sample ID: K446-04N				Seq: 88	20:00:46 18 Nov 21		HG	
Hg	-.024	ppb	299					
*** Sample ID: CCV9				Seq: 89	20:03:00 18 Nov 21		HG	
Hg	1.96	ppb	180851					
*** Sample ID: CCB9				Seq: 90	20:05:05 18 Nov 21		HG	
Hg	.049	ppb	6961					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: K447-01N				Seq: 91	20:08:30 18 Nov 21		HG	
Hg	.002	ppb	2658					
*** Sample ID: K447-02N				Seq: 92	20:10:52 18 Nov 21		HG	
Hg	-.007	ppb	1850					
*** Sample ID: CCV10				Seq: 93	20:12:36 18 Nov 21		HG	
Hg	1.95	ppb	179923					
*** Sample ID: CCB10				Seq: 94	20:14:32 18 Nov 21		HG	
Hg	.025	ppb	4748					

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot #: 35520014

Aqua Regia Prep. Vessel Lot#: N/A

Samples pH = <2

Book #: E47-126

Batch No.: HGK025W

Matrix: Water

SOP #	Rev. #
☑ EMAX-7470	8
☐ EMAX-7471	9
☑ EMAX-245.1	4
☐ EMAX-	

Standards	ID	Conc. (µg/L)	Amount Added (ml)
ICAL	SM3B-21-19-08	50	0.2, 0.5, 1, 2, 5
CCV	↓	↓	2
ICV	SM3B-21-19-09	↓	2
LCS/MS	↓	↓	2.5

Reagent	ID / Lot #
HNO_3	SW1A-011-02-05
HCl	N/A
H_2SO_4	SW1A-009-17-07
$KMnO_4$	SM5B-05-04-01
$K_2S_2O_8$	03-02
$NH_2OH \cdot HCl \cdot NaCl$	03-04
$SnCl_2$	02-04
Silica Sand	N/A
Reagent Water	RW1-21-004
pH strip 0-14	HC904495

Digestor ID/ Temp (°C): A / 95.2

Thermometer ID/LOC: 20123013 / A13

Thermometer ID/LOC: N/A

Pipette ID: HG-06, HG-03, A42780082

☑ H_2SO_4 dispenser checked @ 2.5 ml with Class A graduated cylinder

☐ HCl dispenser checked @ ___ ml with Class A graduated cylinder

☐ HNO_3 dispenser checked @ ___ ml with Class A graduated cylinder

Prepared By: NT

Standard Added By: NT Witnessed By: TH

EMAX LABORATORIES

DIGESTION LOG FOR MERCURY

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
21HGK025W01	HGK025WB	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W02	HGK025WL	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W03	HGK025WC	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W04	K100-01	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W05	K101-01	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W06	K110-01	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W07	K110-02	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W08	K110-03	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W09	K110-04	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W10	K121-01	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W11	K121-02	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W12	K121-03	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W13	K121-04	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W14	K121-05	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W15	K121-06	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W16	K121-07	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W17	K121-08	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W18	K122-01	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W19	K129-01	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W20	K129-01M	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W21	K129-01S	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W22	K129-02	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W23	K129-07	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W24	K137-01	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W25	K137-02	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W26	S-0/CCB/ICB	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W27	S-0.2	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W28	S-0.5/MRL	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W29	S-1	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W30	S-2/CCV	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W31	S-5	50	ml	11/18/21 12:38	80	50	80	1	
21HGK025W32	ICV	50	ml	11/18/21 12:38	80	50	80	1	

NT
11/18/21

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 11/18/21 13:53

☑ Digestion Ended @ 11/18/21 16:25

Comments:

Prepared By: NTan

Checked By: NT

Date 11/18/21

SOP EMAX-7470 Rev. EMAX-245.1 Rev. 4

LABORATORY REPORT FOR

ARCADIS

PG&E TOPOCK-GMP

WET CHEMICAL ANALYSES

SDG#: 21K137

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21K137

METHOD E218.6
HEXAVALENT CHROMIUM

A total of two(2) water samples were received on 11/16/21 to be analyzed for Hexavalent Chromium in accordance with Method E218.6 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Hexavalent Chromium was not detected in HCK011WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. HCK011WL/HCK011WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD and one(1) set of MS were analyzed.
- Hexavalent Chromium was within MS/MSD QC limits in K137-01M/K137-01S.
- Percent recovery for Hexavalent Chromium was within MS QC limits in K137-02M.
Refer to Matrix QC summary form for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

Samples K137-01M and -01S were post-spiked at 1 ppb.

Sample K137-02M was post-spiked at 2 ppb.

SAMPLE RESULTS

METHOD E218.6
HEXAVALENT CHROMIUM

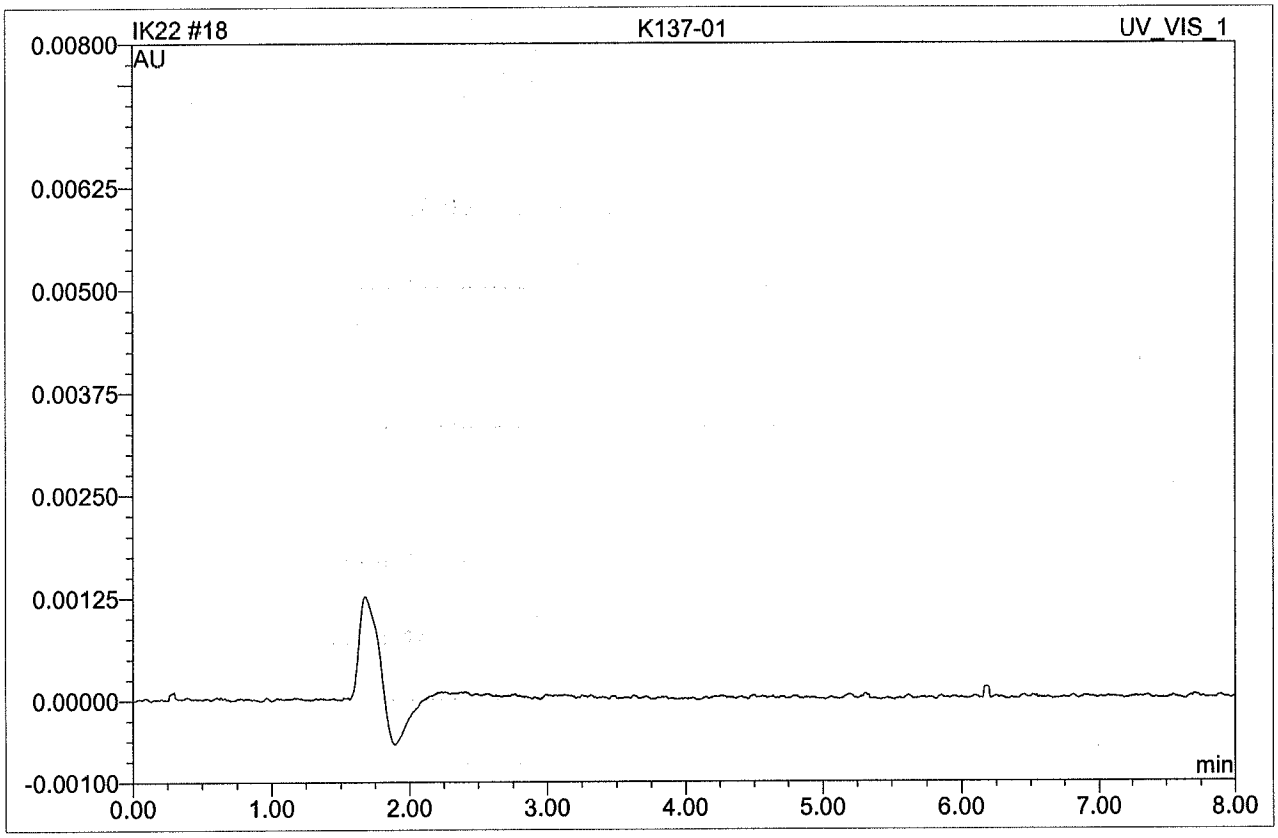
Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 21K137

Matrix : WATER
InstrumentID : 59

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N. FACTOR	MOIST (%)	LOQ (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HCK011WB	ND	1	NA	0.2	0.05	11/22/2111:16	NA	IK22003	IK22001	HCK011W	NA	NA
LCS1W	HCK011WL	1.96	1	NA	0.2	0.05	11/22/2111:27	NA	IK22004	IK22001	HCK011W	NA	NA
LCD1W	HCK011WC	1.96	1	NA	0.2	0.05	11/22/2111:37	NA	IK22005	IK22001	HCK011W	NA	NA
MTS-1-Q421	K137-01	ND	1	NA	0.2	0.05	11/22/2111:47	NA	IK22006	IK22001	HCK011W	11/15/2109:40	11/16/21
MTS-1-Q421MS	K137-01M	0.994	1	NA	0.2	0.05	11/22/2111:58	NA	IK22007	IK22001	HCK011W	11/15/2109:40	11/16/21
MTS-1-Q421MSD	K137-01S	0.994	1	NA	0.2	0.05	11/22/2112:08	NA	IK22008	IK22001	HCK011W	11/15/2109:40	11/16/21
MTS-2-Q421	K137-02	5.43	1	NA	0.2	0.05	11/22/2112:19	NA	IK22009	IK22001	HCK011W	11/15/2109:50	11/16/21
MTS-2-Q421MS	K137-02M	7.42	1	NA	0.2	0.05	11/22/2112:29	NA	IK22010	IK22001	HCK011W	11/15/2109:50	11/16/21

IK22 006 K137-01

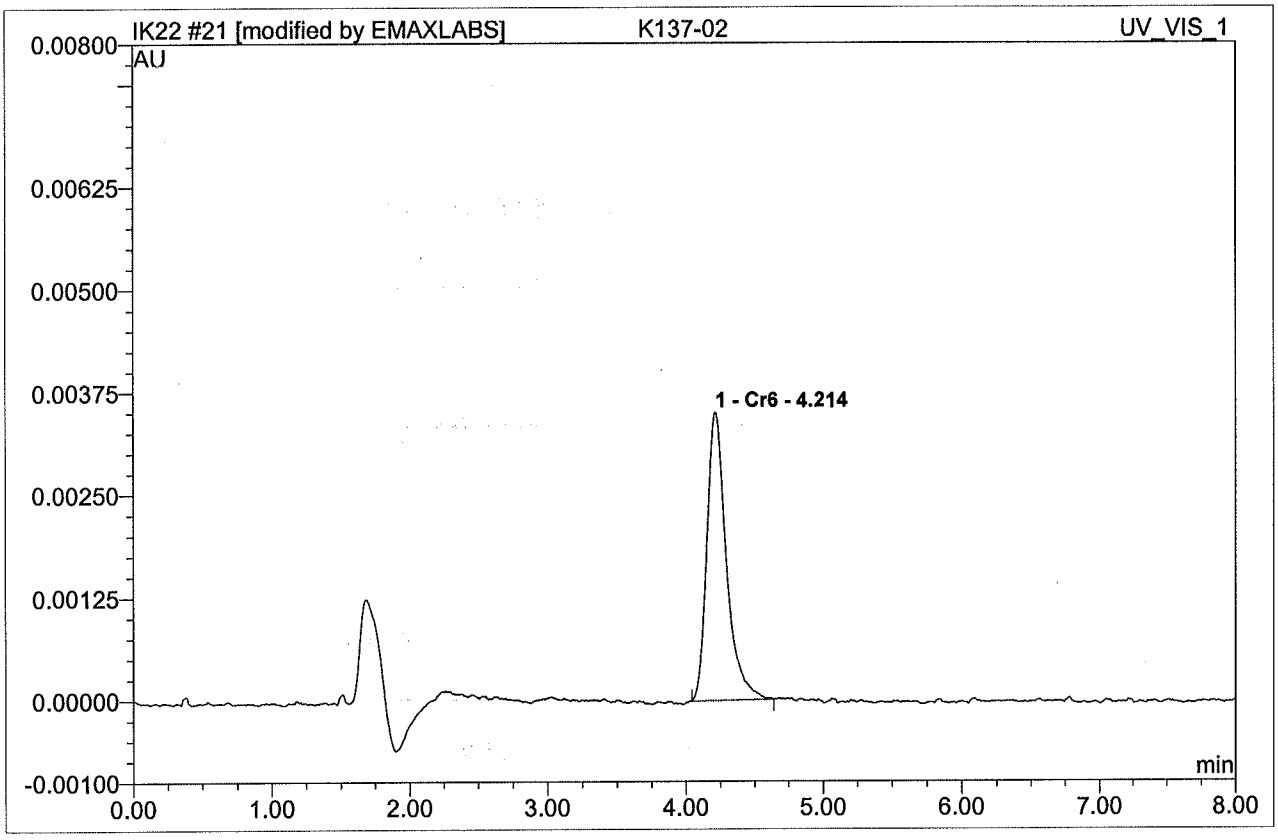
Sample Name:	**K137-01**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/22/2021 11:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IK22 009 K137-02

Sample Name:	**K137-02**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/22/2021 12:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0035110	0.0005750	100.00	5.426	BMB*
Total:			0.004	0.001	100.00	5.426	

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21K137
METHOD : E218.6

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: HCK011WB	HCK011WL	HCK011WC
LAB FILE ID	: IK22003	IK22004	IK22005
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 11/22/2111:16	11/22/2111:27	11/22/2111:37
PREP BATCH	: HCK011W	HCK011W	HCK011W
CALIBRATION REF	: IK22001	IK22001	IK22001

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpkAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
HEXAVALENT CHROMIUM	ND	2.00	1.96	98.0	2.00	1.96	98.0	0	90-110	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21K137
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MTS-2-Q421	MTS-2-Q421MS
LAB SAMPLE ID	: K137-02	K137-02M
LAB FILE ID	: IK22009	IK22010
DATE PREPARED	: NA	NA
DATE ANALYZED	: 11/22/2112:19	11/22/2112:29
PREP BATCH	: HCK011W	HCK011W
CALIBRATION REF	: IK22001	IK22001

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	5.43	2.00	7.42	99.5	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21K137
METHOD : E218.6

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MTS-1-Q421	MTS-1-Q421MS	MTS-1-Q421MSD
LAB SAMPLE ID	: K137-01	K137-01M	K137-01S
LAB FILE ID	: IK22006	IK22007	IK22008
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 11/22/2111:47	11/22/2111:58	11/22/2112:08
PREP BATCH	: HCK011W	HCK011W	HCK011W
CALIBRATION REF	: IK22001	IK22001	IK22001

ACCESSION:

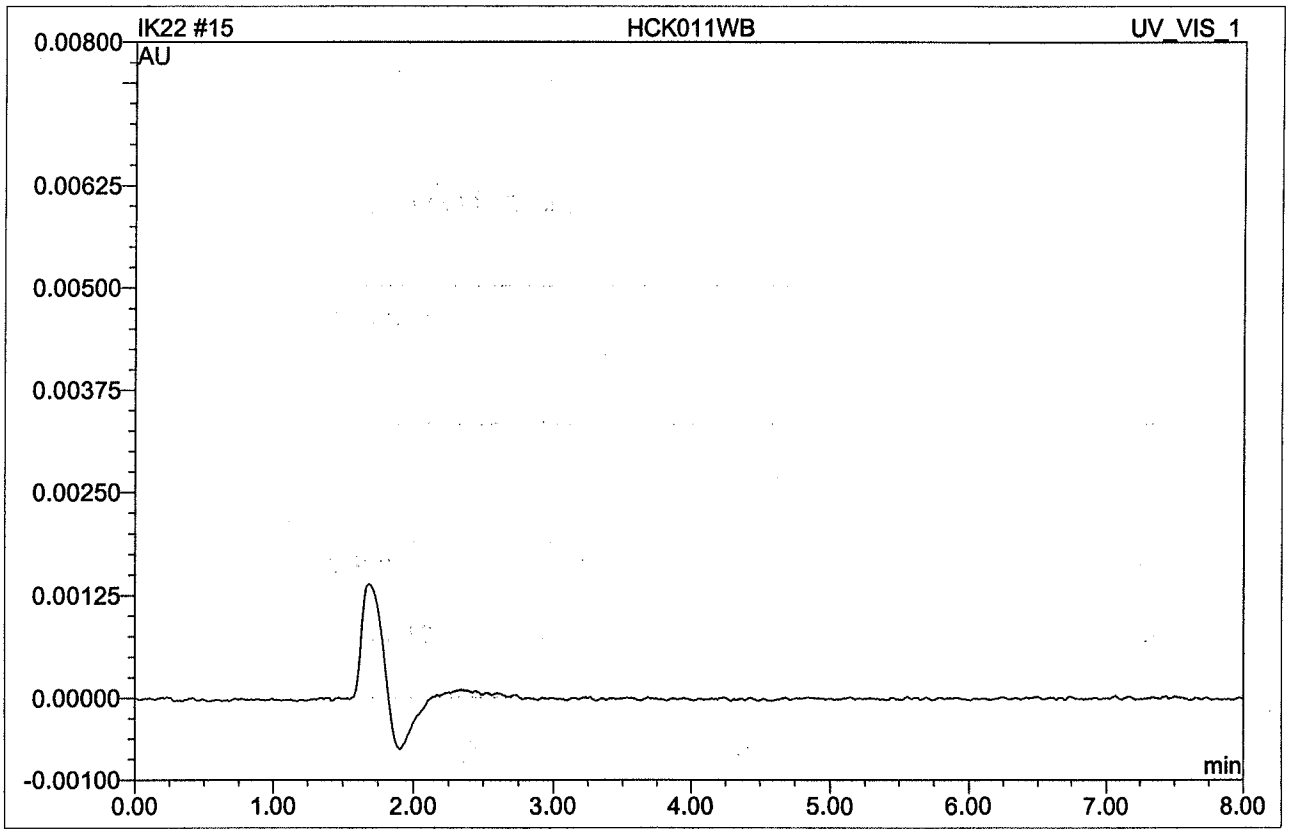
PARAMETERS	PSResult (ug/L)	SpkAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
HEXAVALENT CHROMIUM	ND	1.00	0.994	99.4	1.00	0.994	99.4	0	90-110	20

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

QC DATA

IK22 003 HCK011WB

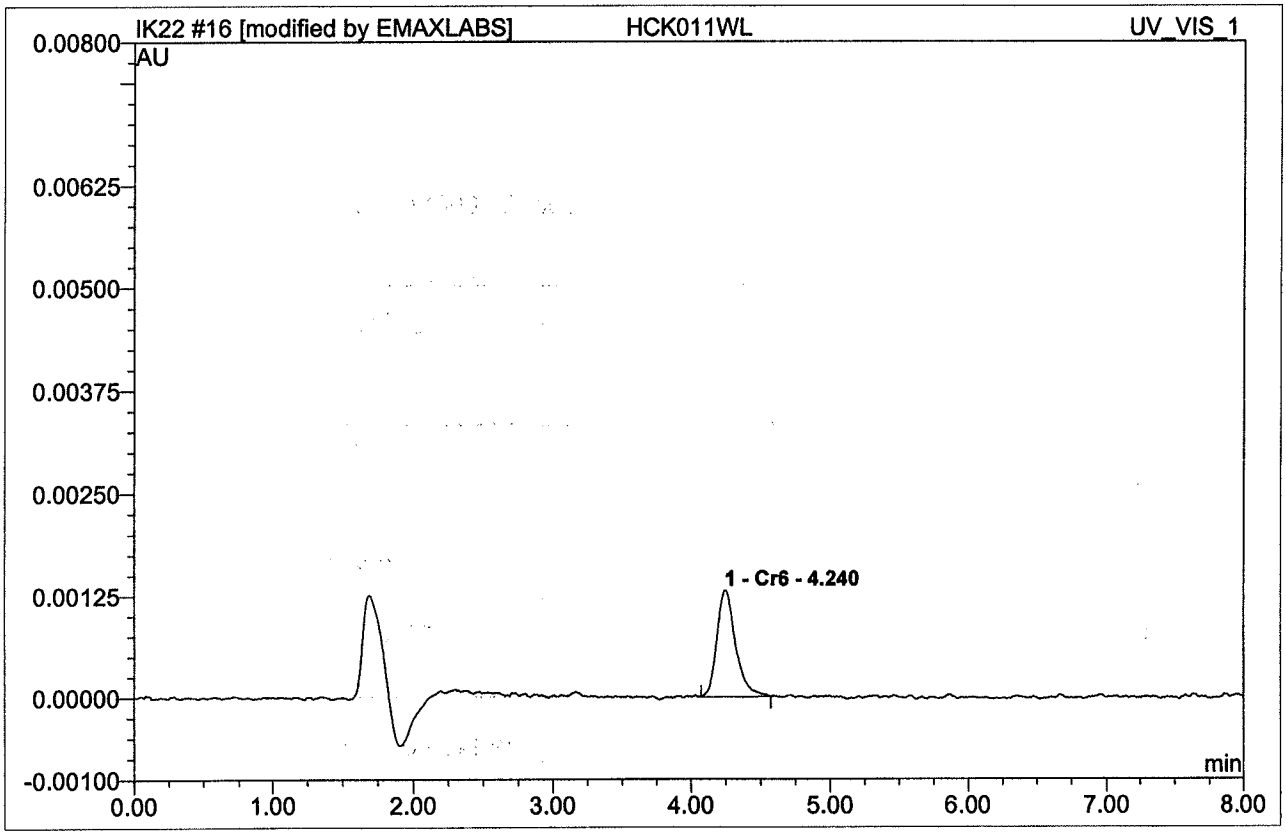
Sample Name:	**HCK011WB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/22/2021 11:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IK22 004 HCK011WL

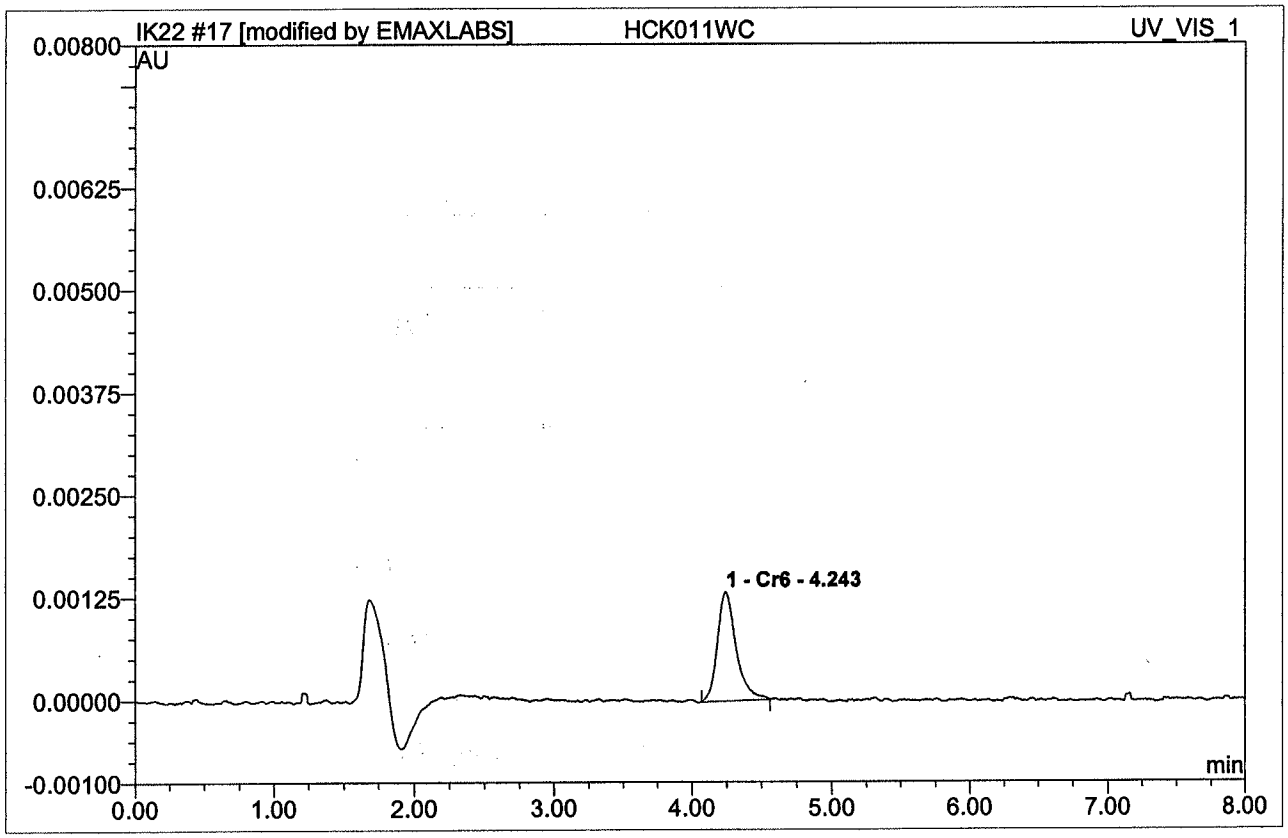
Sample Name:	**HCK011WL**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/22/2021 11:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.24	Cr6	0.0013060	0.0002055	100.00	1.955	BMB*
Total:			0.001	0.000	100.00	1.955	

IK22 005 HCK011WC

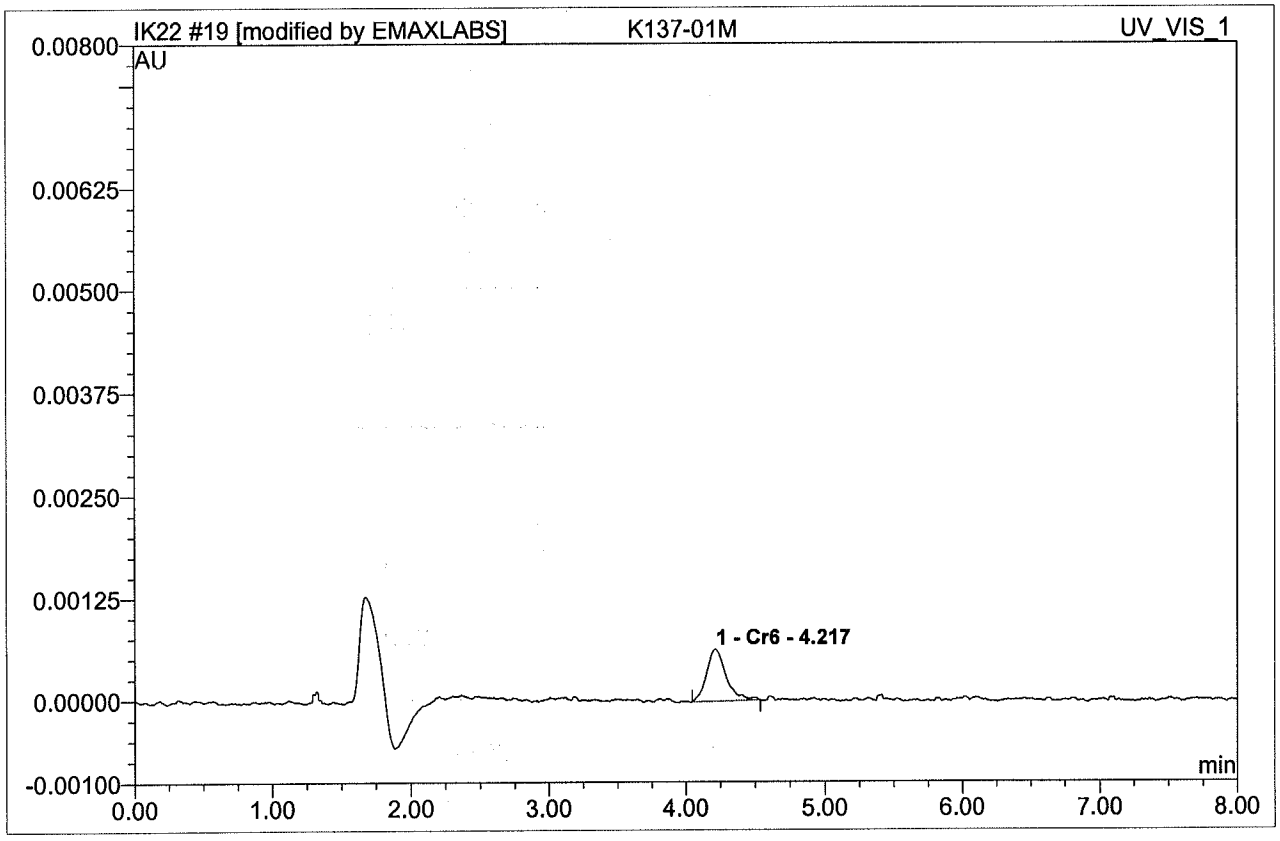
Sample Name:	**HCK011WC**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/22/2021 11:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.24	Cr6	0.0013280	0.0002065	100.00	1.964	BMB*
Total:			0.001	0.000	100.00	1.964	

IK22 007 K137-01M

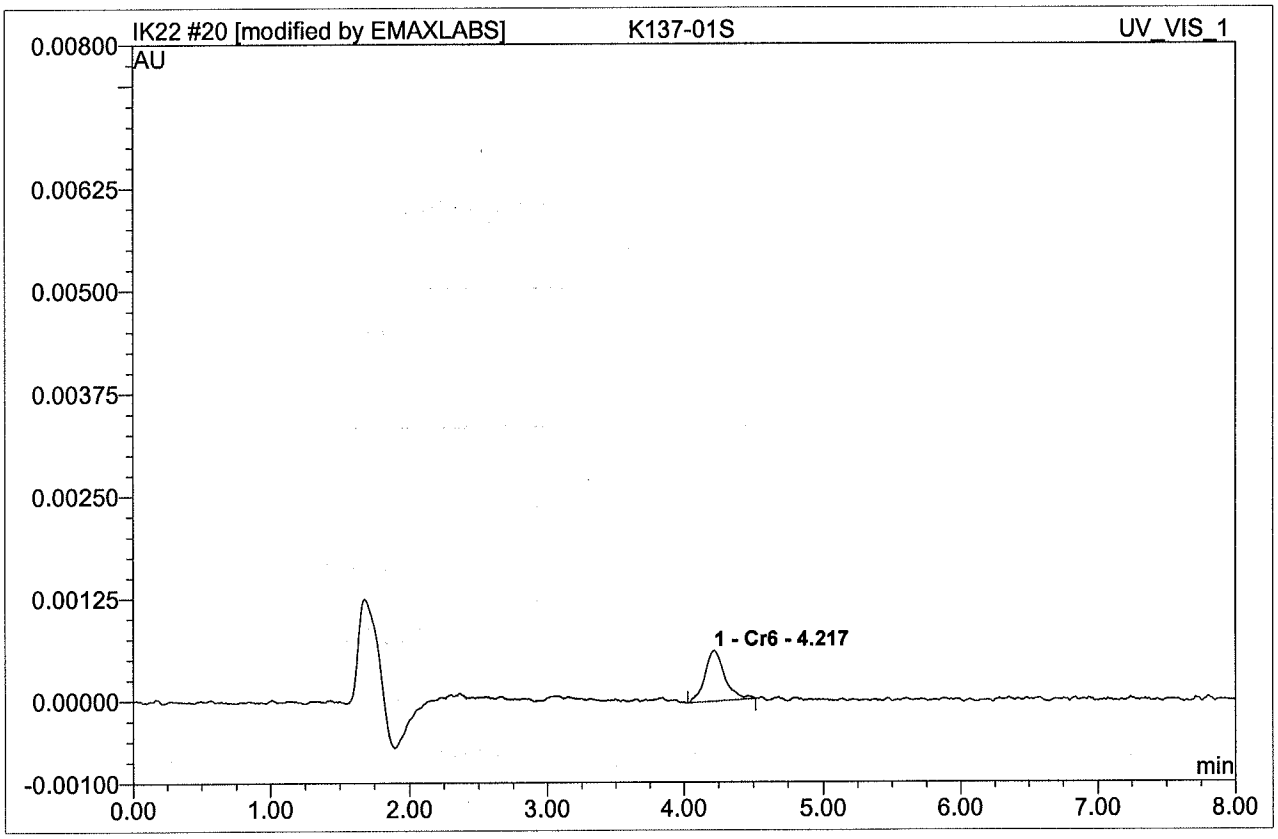
Sample Name:	**K137-01M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/22/2021 11:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.22	Cr6	0.0006330	0.0001032	100.00	0.994	BMB*
Total:			0.001	0.000	100.00	0.994	

IK22 008 K137-01S

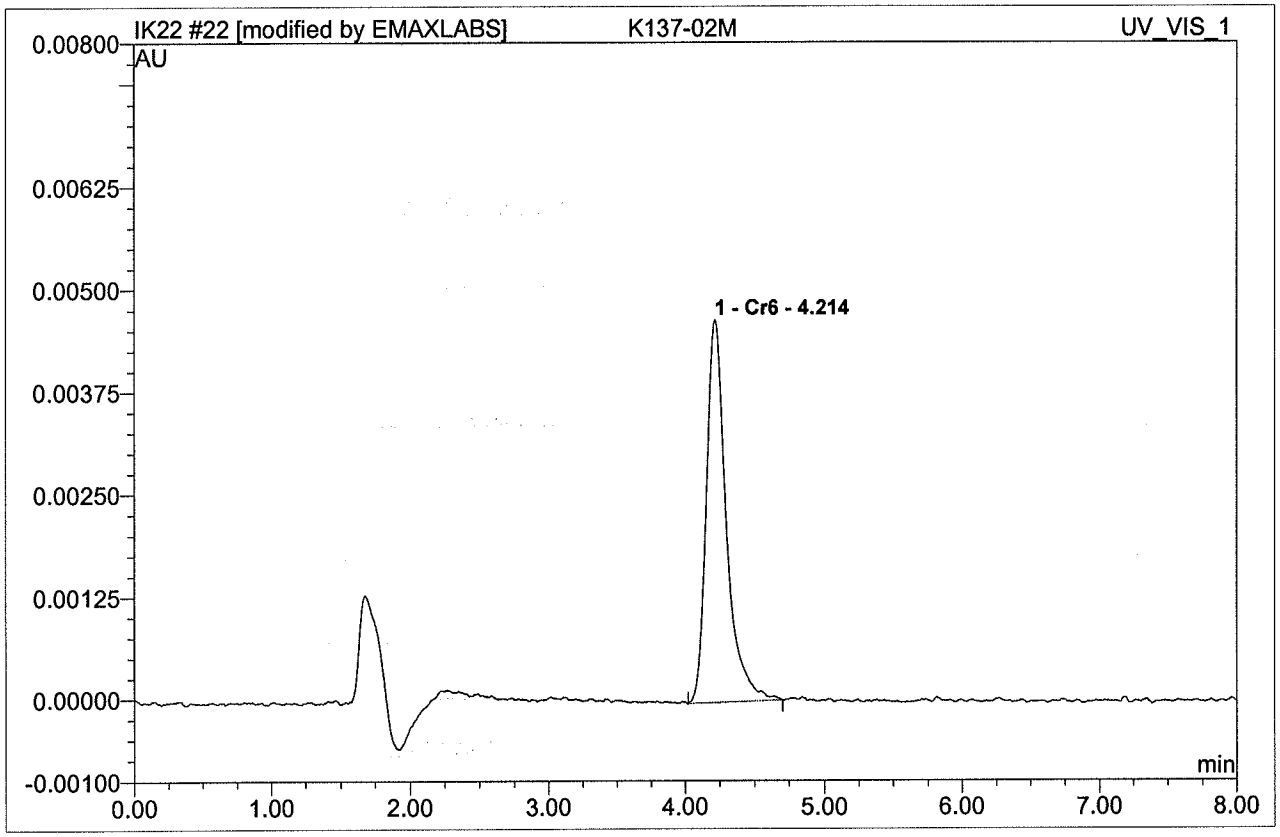
Sample Name:	**K137-01S**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/22/2021 12:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.22	Cr6	0.0006180	0.0001032	100.00	0.994	BMB*
Total:			0.001	0.000	100.00	0.994	

IK22 010 K137-02M

Sample Name:	**K137-02M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/22/2021 12:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0046740	0.0007876	100.00	7.422	BMB*
Total:			0.005	0.001	100.00	7.422	

INITIAL CALIBRATION

IC RESULT FORM CalVersion : CR6.K19/IK19(2021)

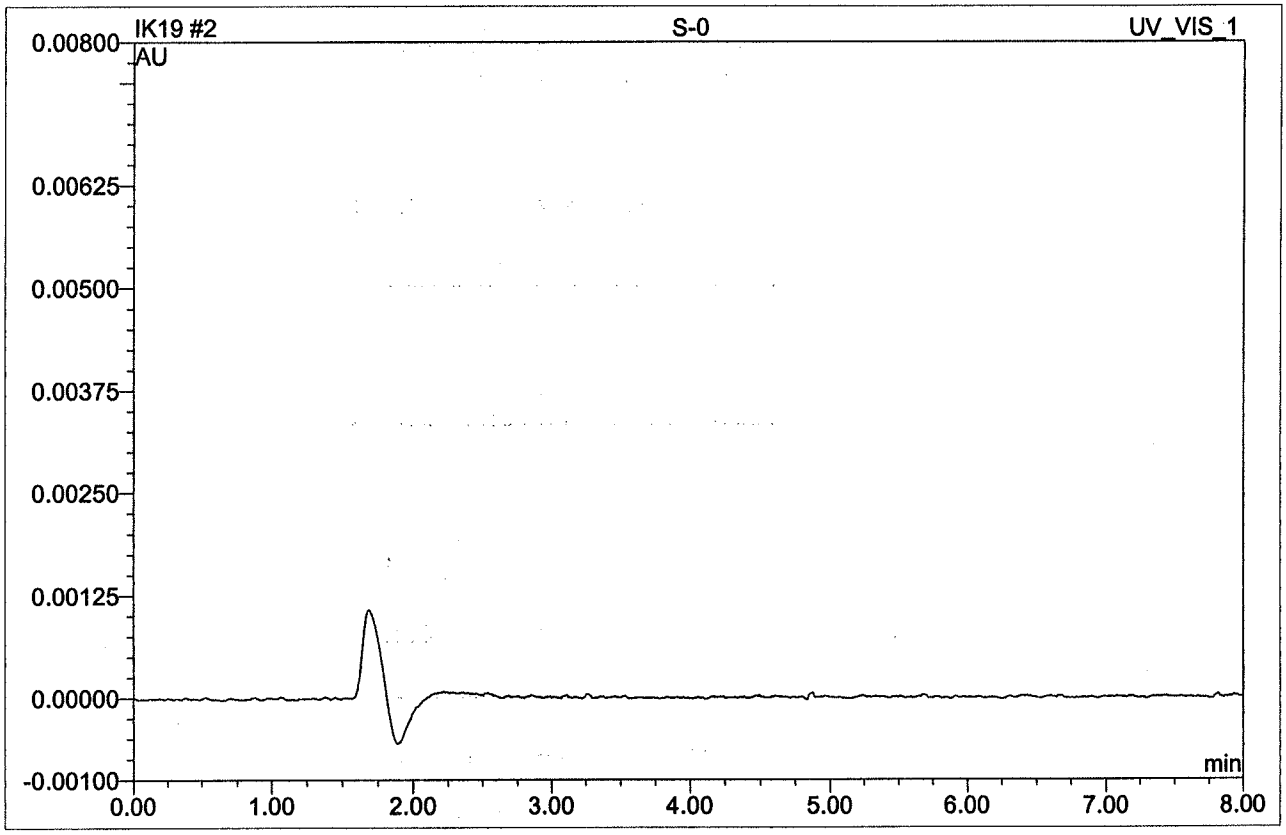
LFID	LSID	SelCmp	Cr6	DateTime	DF
IK19001	IB	C	ND	11/19/2111:32	1
IK19002	S-0	C	ND	11/19/2111:43	1
IK19003	S-1	C	0.214	11/19/2111:53	1
IK19004	S-2	C	0.505	11/19/2112:03	1
IK19005	S-3	C	0.975	11/19/2112:14	1
IK19006	S-4	C	1.972	11/19/2112:24	1
IK19007	S-5	C	4.991	11/19/2112:35	1
IK19008	S-6	C	7.522	11/19/2112:45	1
IK19009	S-7	C	9.996	11/19/2112:55	1
IK19010	ICV	C	100%	11/19/2113:06	1
IK19011	ICB	C	ND	11/19/2113:16	1
IK19012	LOW CCV	C	0.196	11/19/2113:27	1

METHOD: IC59K19
SOLVENT: BUFFER (SP2-05-04-02)

11/23/21

IK19 002 S-0

Sample Name:	**S-0**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/19/2021 11:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



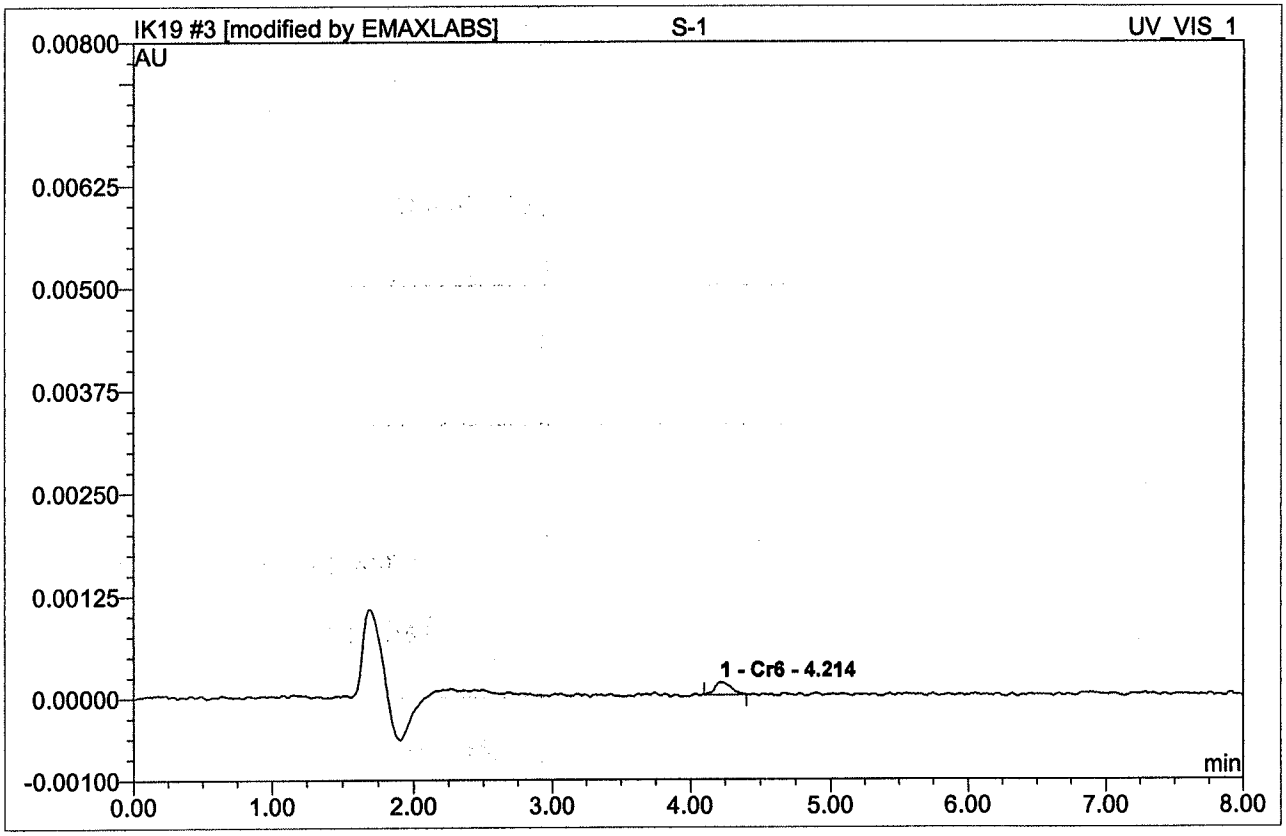
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

11/23/24

IK19 003 S-1

0.2 PPB

Sample Name:	**S-1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/19/2021 11:53**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

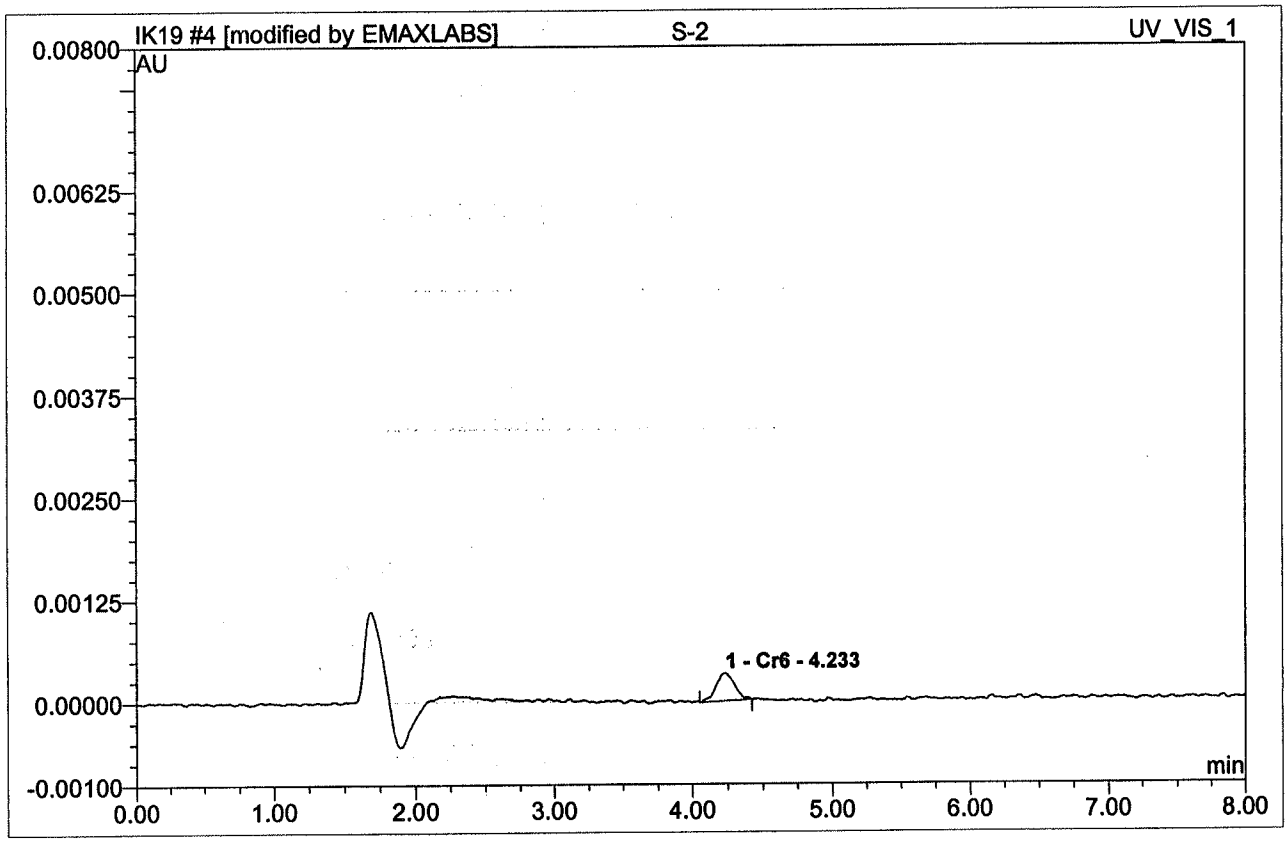


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0001560	0.0000201	100.00	0.214	BMB*
Total:			0.000	0.000	100.00	0.214	

IK19 004 S-2

0.5 PPB

Sample Name:	**S-2**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/19/2021 12:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

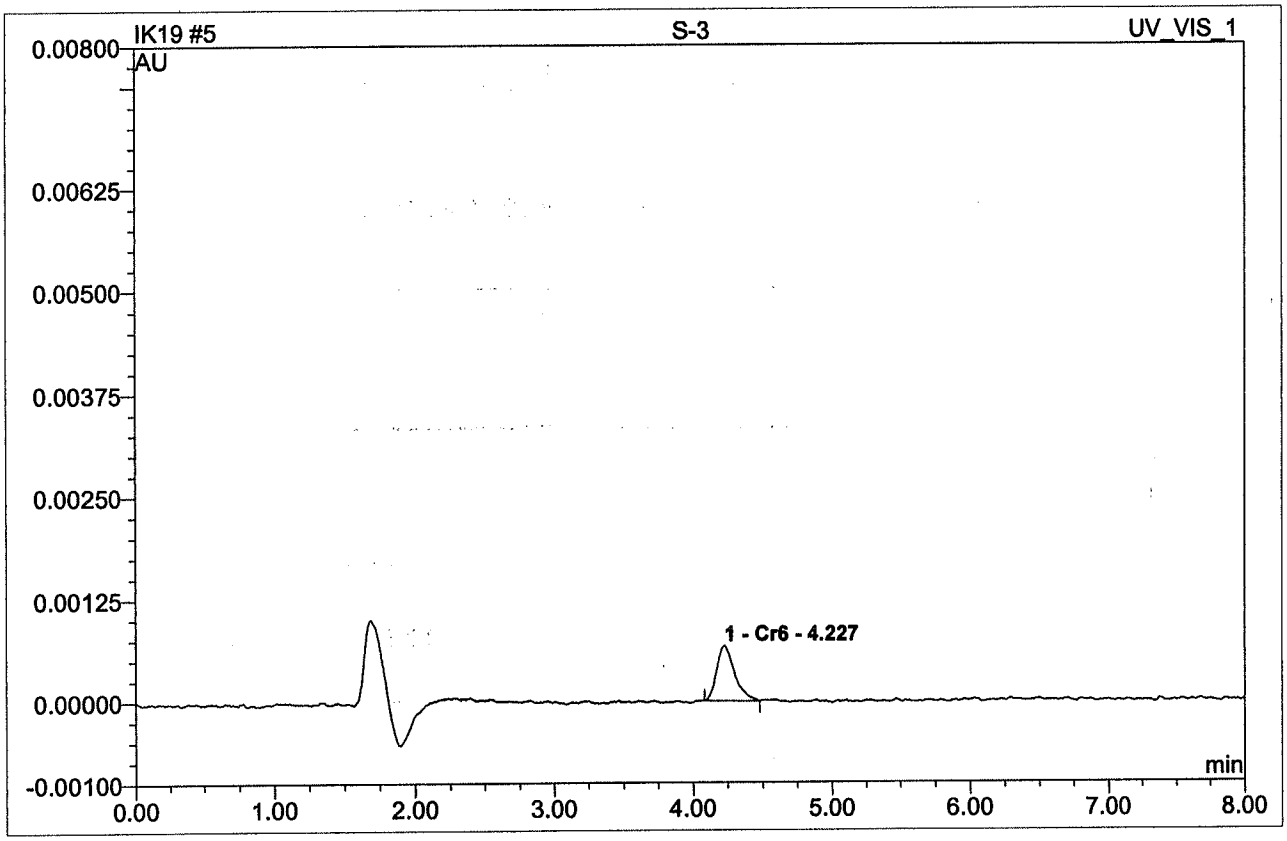


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.23	Cr6	0.0003350	0.0000511	100.00	0.505	BMB*
Total:			0.000	0.000	100.00	0.505	

IK19 005 S-3

1.0 PPB

Sample Name:	**S-3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/19/2021 12:14**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

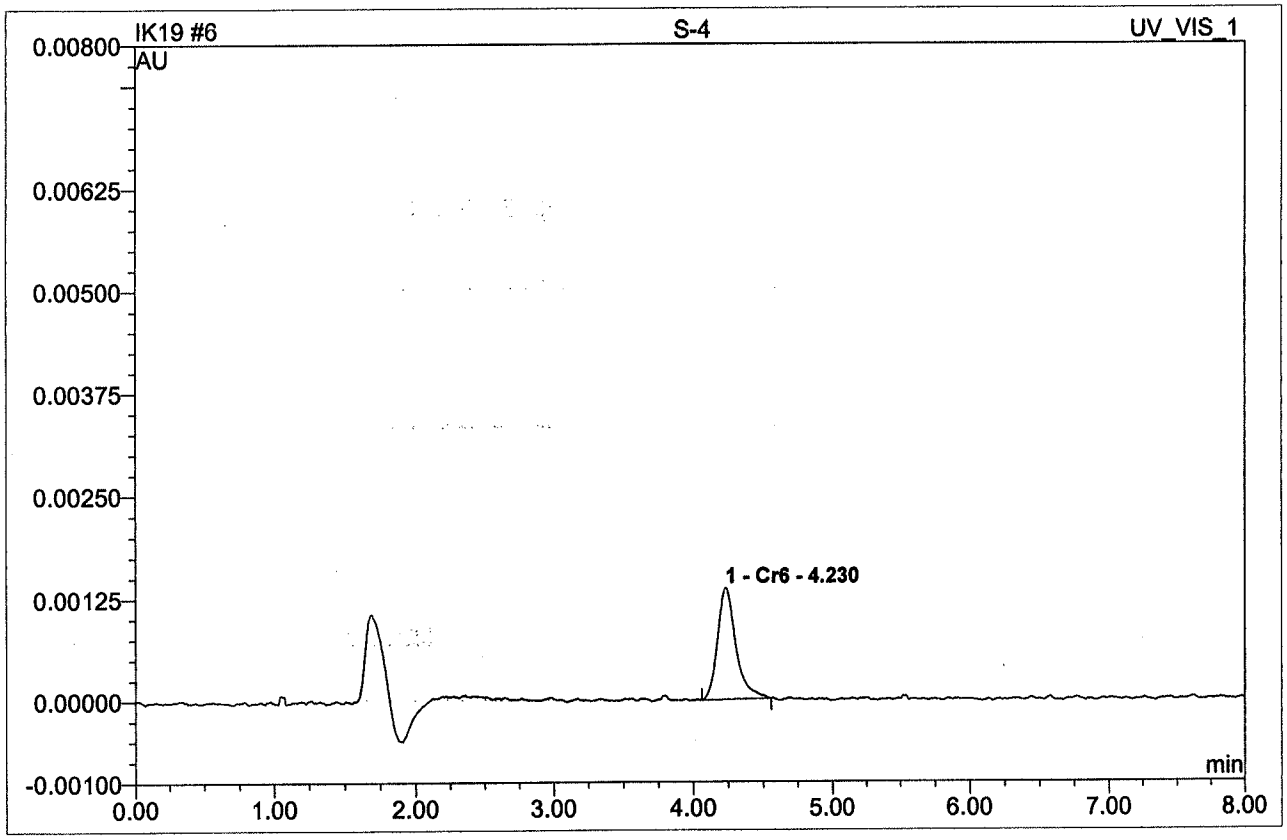


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.23	Cr6	0.0006730	0.0001011	100.00	0.975	BMB
Total:			0.001	0.000	100.00	0.975	

IK19 006 S-4

2.0 PPB

Sample Name:	**S-4**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/19/2021 12:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

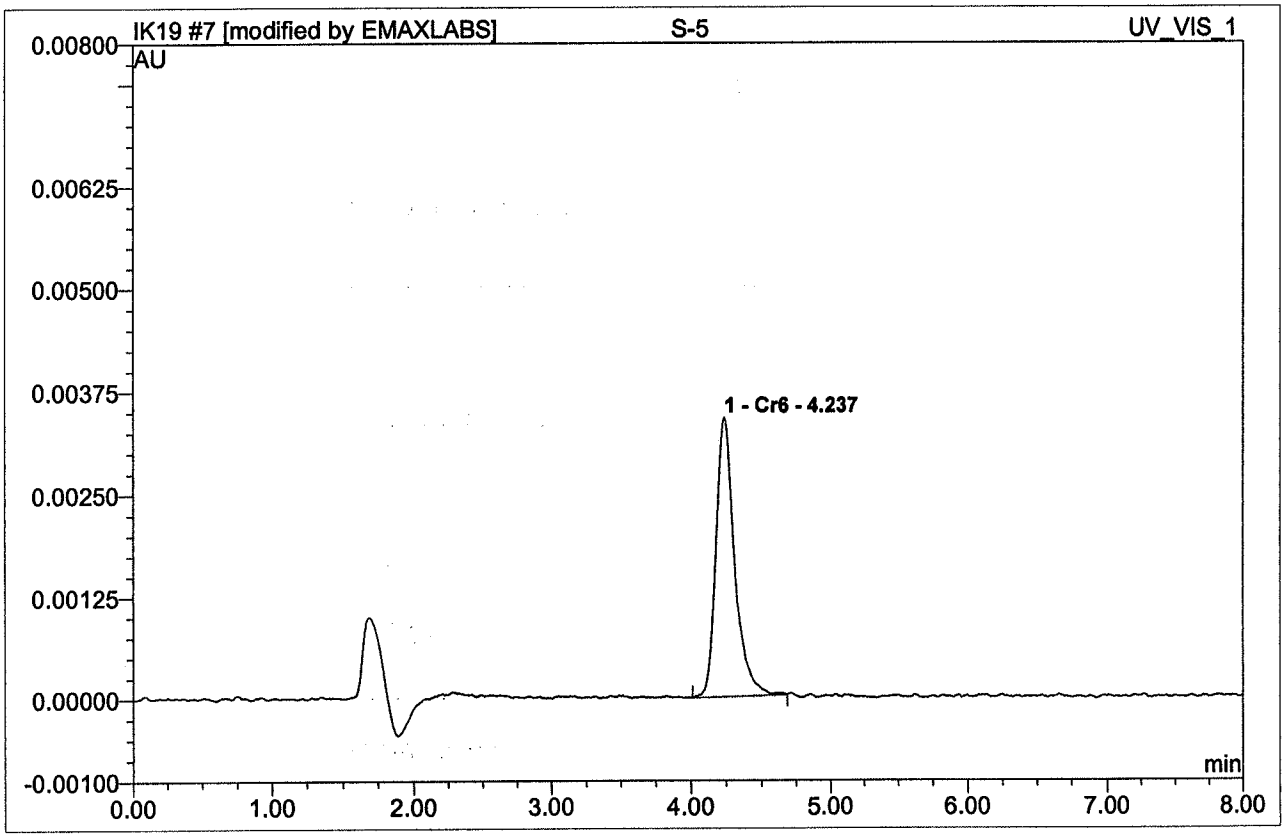


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.23	Cr6	0.0013640	0.0002073	100.00	1.972	BMB
Total:			0.001	0.000	100.00	1.972	

IK19 007 S-5

5.0 PPB

Sample Name:	**S-5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/19/2021 12:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

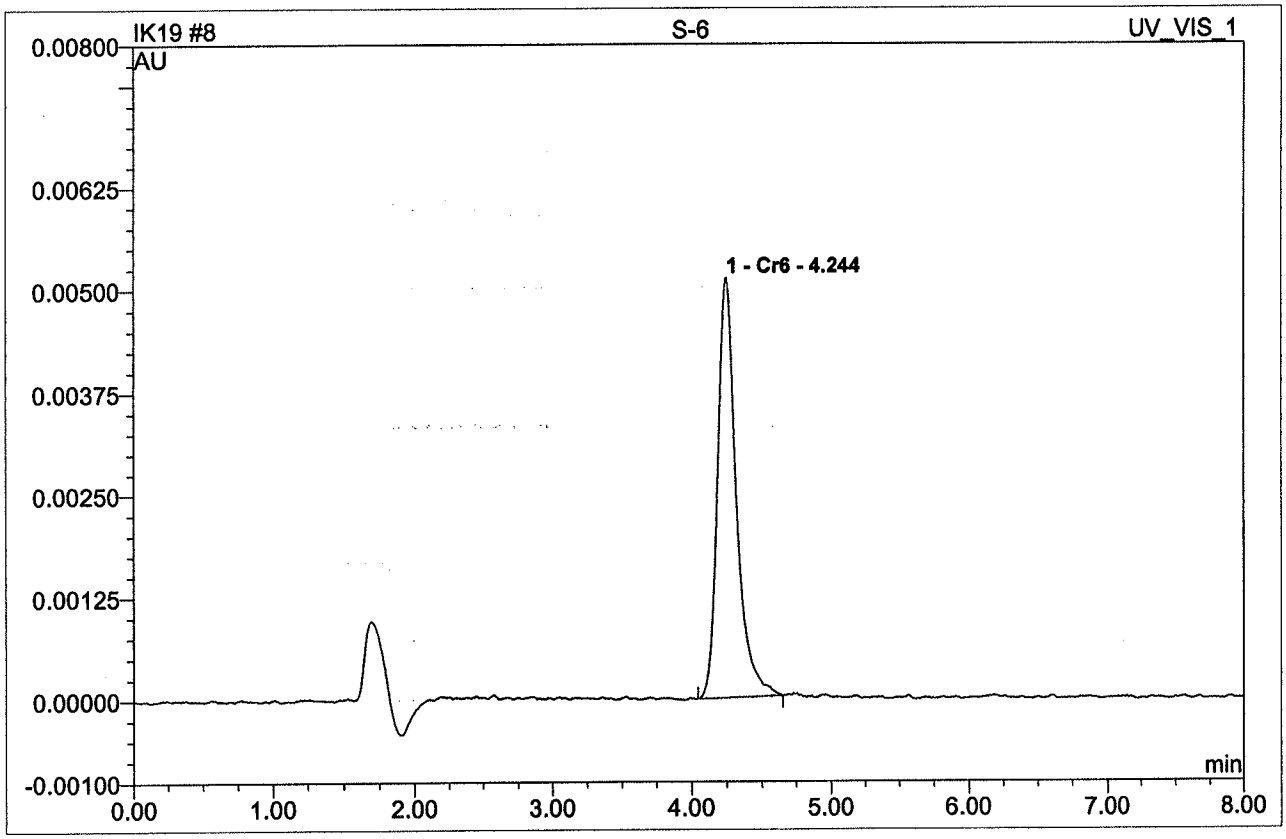


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.24	Cr6	0.0034050	0.0005288	100.00	4.991	BMB*
Total:			0.003	0.001	100.00	4.991	

IK19 008 S-6

7.5 PPB

Sample Name:	**S-6**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/19/2021 12:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

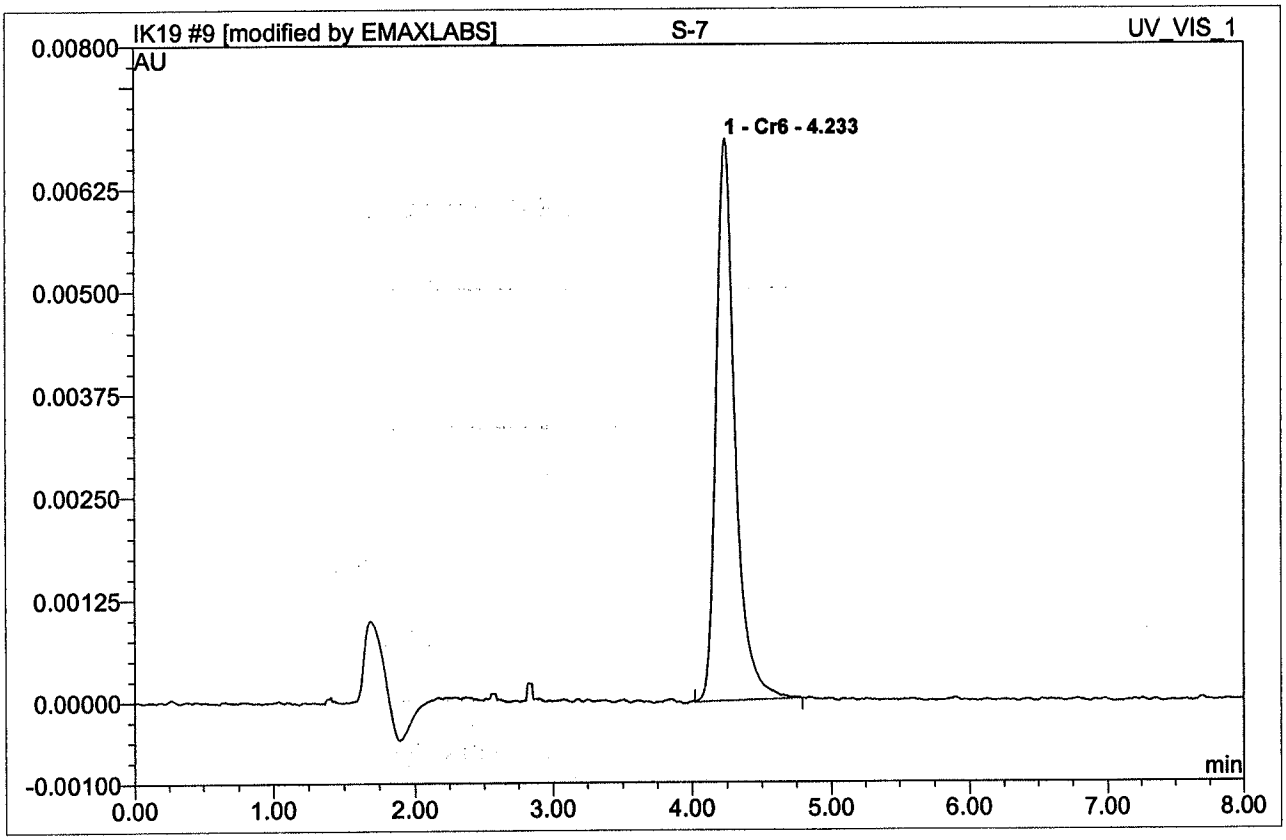


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.24	Cr6	0.0051200	0.0007982	100.00	7.522	BMB
Total:			0.005	0.001	100.00	7.522	

IK19 009 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/19/2021 12:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

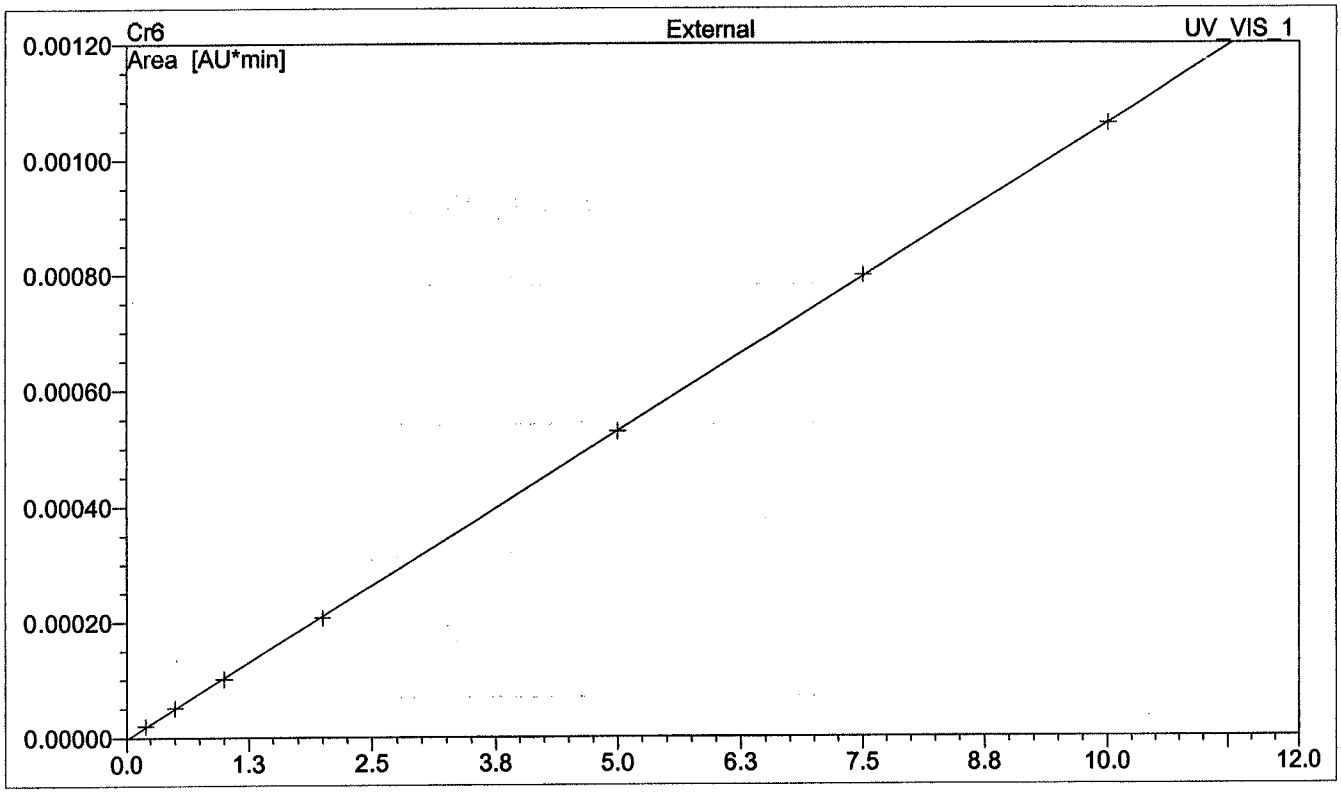


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.23	Cr6	0.0068440	0.0010616	100.00	9.996	BMB*
Total:			0.007	0.001	100.00	9.996	

9 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/19/2021 12:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square	Offset	Slope	Curve
1	4.23	Cr6	0LOff	7	1.0000	-0.0000027	0.0001065	0.0000
Average:					1.0000	0.0000	0.0001	0.0000

SECOND SOURCE VERIFICATION

IC RESULT FORM CalVersion : CR6.K19/IK19(2021)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IK19001	IB	C	ND	11/19/2111:32	1
IK19002	S-0	C	ND	11/19/2111:43	1
IK19003	S-1	C	0.214	11/19/2111:53	1
IK19004	S-2	C	0.505	11/19/2112:03	1
IK19005	S-3	C	0.975	11/19/2112:14	1
IK19006	S-4	C	1.972	11/19/2112:24	1
IK19007	S-5	C	4.991	11/19/2112:35	1
IK19008	S-6	C	7.522	11/19/2112:45	1
IK19009	S-7	C	9.996	11/19/2112:55	1
IK19010	ICV	C	100%	11/19/2113:06	1
IK19011	ICB	C	ND	11/19/2113:16	1
IK19012	LOW CCV	C	0.196	11/19/2113:27	1

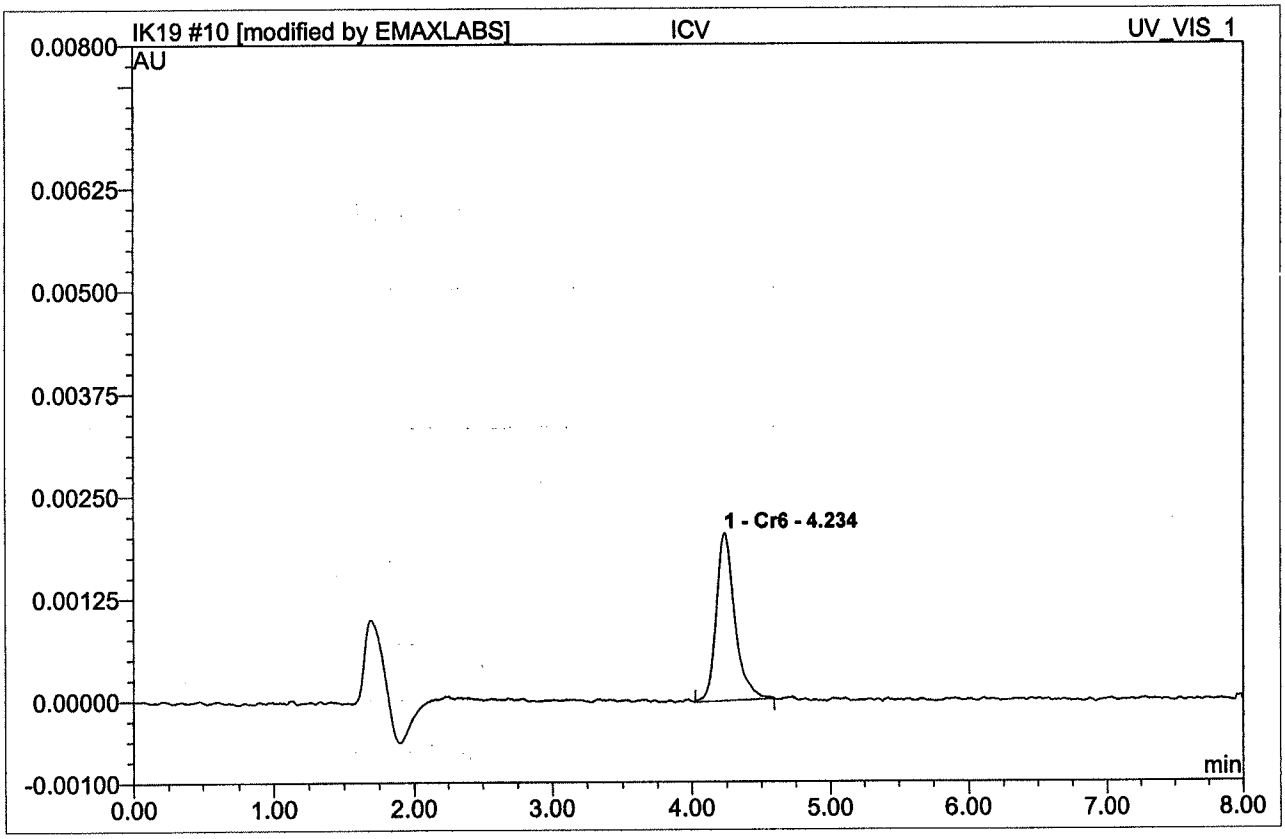
METHOD: IC59K19
SOLVENT: BUFFER (SP2-05-04-02)

11/23/21

IK19 010 ICV

3.0 PPB

Sample Name:	**ICV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/19/2021 13:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

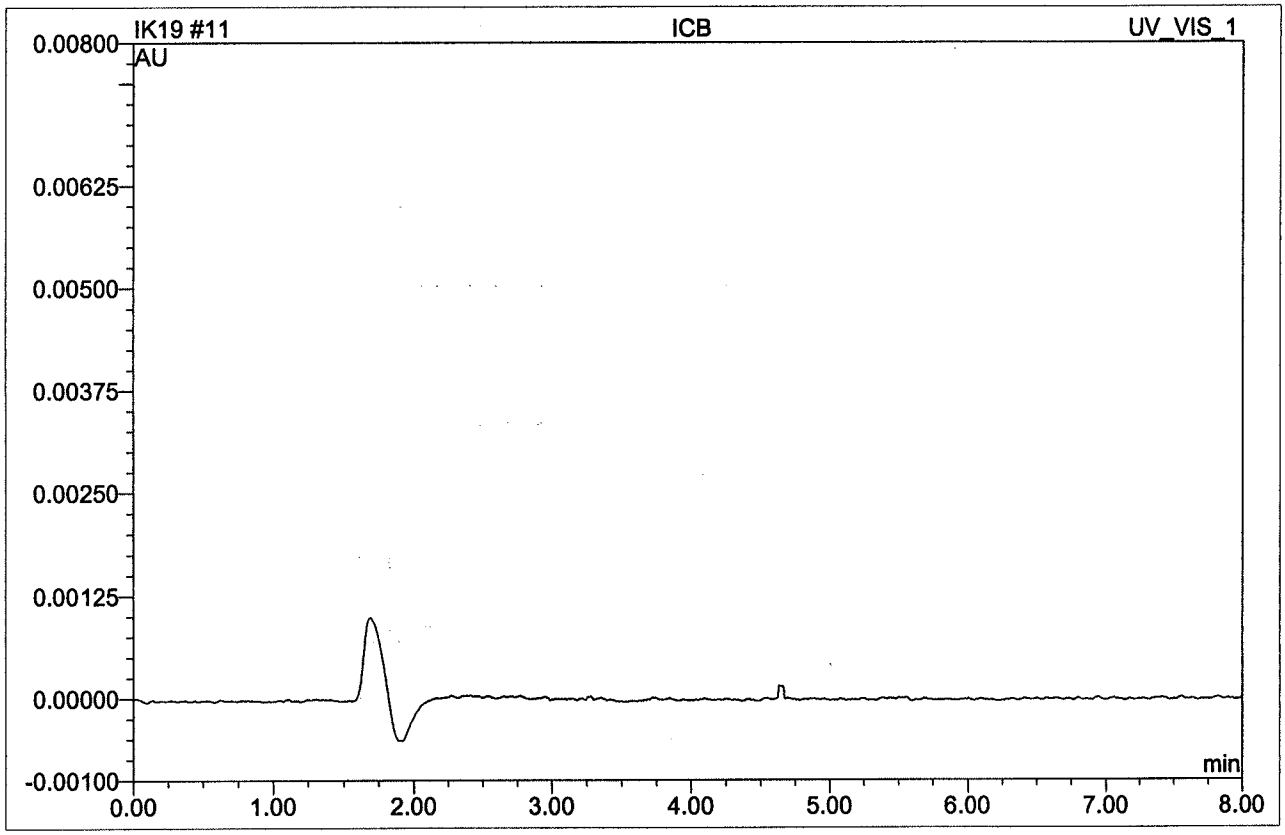


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.23	Cr6	0.0020500	0.0003168	100.00	3.001	BMB*
Total:			0.002	0.000	100.00	3.001	

conc. (ppb.) = Area - offset / slope

IK19 011 ICB

Sample Name:	**ICB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/19/2021 13:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

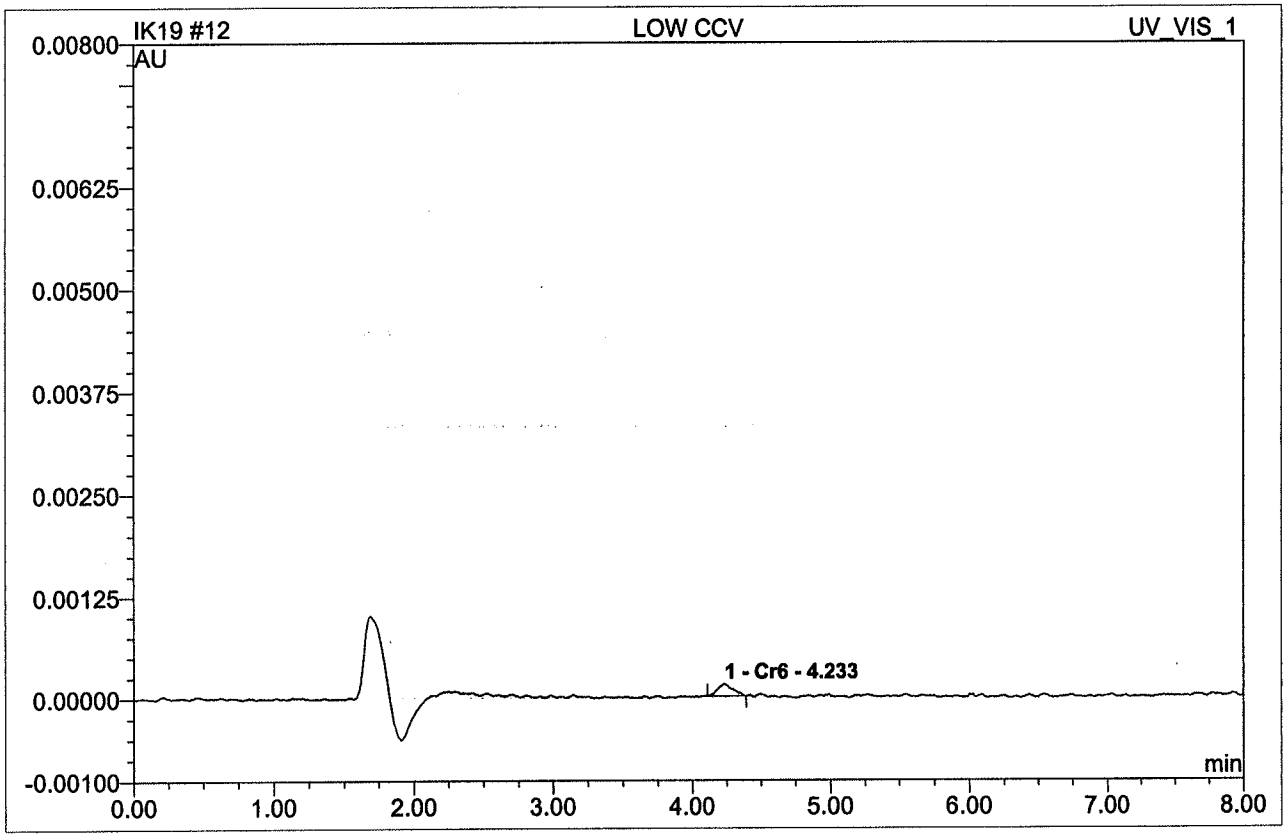


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IK19 012 LOW CCV

0.2 PPB

Sample Name:	**LOW CCV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/19/2021 13:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.23	Cr6	0.0001470	0.0000182	100.00	0.196	BMB
Total:			0.000	0.000	100.00	0.196	

DAILY CALIBRATIONS

Continuing Calibration Summary Form

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG : 21K137
Method : E218.6
QuantMethod : IC59K19
InstrumentID: 59
Parameter : HEXAVALENT CHROMIUM

LFID	LSID	DF	Expected	Result	Unit	%Rec	AnalysisDateTime
IK22001	CCV7	1	2	1.962	ug/L	98	11/22/2110:55
IK22013	CCV9	1	2	1.976	ug/L	99	11/22/2113:03

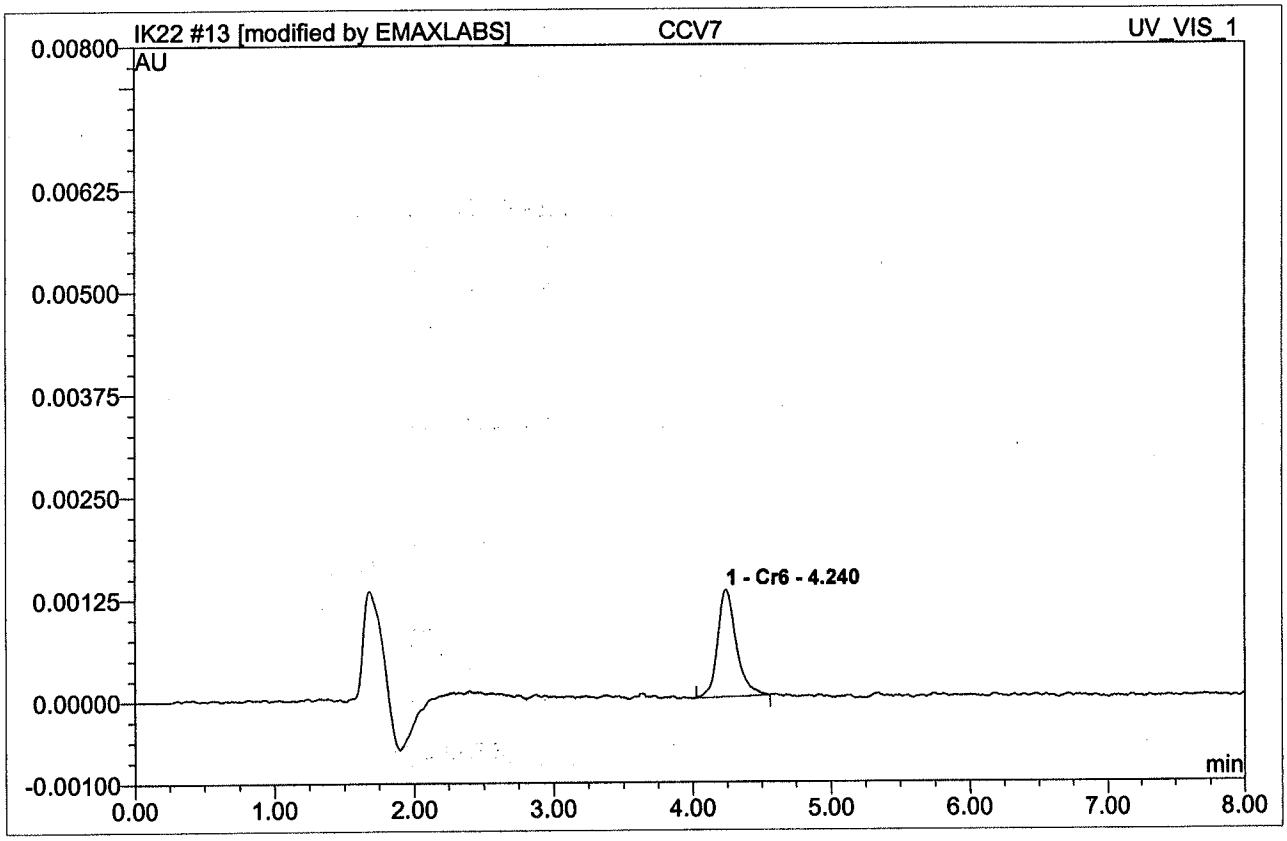
CCV Acceptance Criteria: 95-105%

IC RESULT FORM CalVersion : CR6.K19/IK19(2021)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IK22001	CCV7	C	98%	11/22/2110:55	1
IK22002	CCB7	C	ND	11/22/2111:06	1
IK22003	HCK011WB	C	ND	11/22/2111:16	1
IK22004	HCK011WL	C	1.955	11/22/2111:27	1
IK22005	HCK011WC	C	1.964	11/22/2111:37	1
IK22006	K137-01	C	ND	11/22/2111:47	1
IK22007	K137-01M	C	0.994	11/22/2111:58	1
IK22008	K137-01S	C	0.994	11/22/2112:08	1
IK22009	K137-02	C	5.426	11/22/2112:19	1
IK22010	K137-02M	C	7.422	11/22/2112:29	1
IK22011	K159-01	C	13.508	11/22/2112:39	1
IK22012	K159-01I	C	13.527	11/22/2112:53	2
IK22013	CCV9	C	99%	11/22/2113:03	1
IK22014	CCB9	C	ND	11/22/2113:13	1
IK22015	K159-01M	C	17.298	11/22/2113:24	2
IK22016	K159-02	C	13.765	11/22/2113:34	1
IK22017	K159-02I	C	13.764	11/22/2113:45	2
IK22018	K159-02M	C	17.557	11/22/2113:55	2
IK22019	K159-03	C	19.730	11/22/2114:05	1
IK22020	K159-03I	C	19.735	11/22/2114:20	5
IK22021	K159-03M	C	29.447	11/22/2114:31	5
IK22022	K159-04	C	8.555	11/22/2114:41	1
IK22023	K159-04M	C	11.259	11/22/2114:54	1
IK22024	K159-05	C	8.574	11/22/2115:04	1
IK22025	CCV11	C	97%	11/22/2115:15	1
IK22026	CCB11	C	ND	11/22/2115:25	1
IK22027	K159-05M	C	11.286	11/22/2115:35	1
IK22028	K159-06	C	14.617	11/22/2115:46	1
IK22029	K159-06I	C	14.637	11/22/2115:57	2
IK22030	K159-06M	C	18.409	11/22/2116:07	2
IK22031	K159-07	C	31.431	11/22/2116:18	1
IK22032	K159-07I	C	31.385	11/22/2116:36	5
IK22033	K159-07M	C	40.536	11/22/2116:46	5
IK22034	K159-08	C	31.174	11/22/2116:57	1
IK22035	K159-08I	C	31.171	11/22/2117:07	5
IK22036	K159-08M	C	40.577	11/22/2117:17	5
IK22037	CCV13	C	100%	11/22/2117:28	1
IK22038	CCB13	C	ND	11/22/2117:38	1
IK22039	K159-09	C	31.440	11/22/2117:49	1
IK22040	K159-09I	C	31.370	11/22/2118:05	5
IK22041	K159-09M	C	40.695	11/22/2118:15	5
IK22042	K176-01	C	ND	11/22/2118:26	1
IK22043	K176-01M	C	ND	11/22/2118:37	1
IK22044	K176-02	C	ND	11/22/2118:48	1
IK22045	K176-02M	C	ND	11/22/2118:58	1
IK22046	K176-03	C	ND	11/22/2119:09	1
IK22047	K176-03M	C	1.015	11/22/2119:19	1
IK22048	K176-03S	C	0.994	11/22/2119:29	1
IK22049	CCV15	C	100%	11/22/2119:40	1
IK22050	CCB15	C	ND	11/22/2119:50	1
IK22051	K176-04	C	0.593	11/22/2120:01	1
IK22052	K176-04M	C	1.607	11/22/2120:11	1
IK22053	K176-05	C	ND	11/22/2120:21	1
IK22054	K176-05M	C	1.002	11/22/2120:32	1
IK22055	K159-05I	C	8.578	11/22/2120:42	2
IK22056	K159-05M	C	11.603	11/22/2120:53	2
IK22057	K159-04I	C	8.600	11/22/2121:03	2
IK22058	K159-04M	C	11.493	11/22/2121:13	2
IK22059	K159-10	C	ND	11/22/2121:24	1
IK22060	K159-10M	C	1.021	11/22/2121:34	1
IK22061	CCV17	C	98%	11/22/2121:45	1
IK22062	CCB17	C	ND	11/22/2121:55	1
IK22063	K176-01I	C	ND	11/22/2122:05	5
IK22064	K176-01M	C	4.598	11/22/2122:16	5
IK22065	K176-02I	C	ND	11/22/2122:26	5
IK22066	K176-02M	C	4.651	11/22/2122:37	5
IK22067	K176-01J	C	ND	11/22/2122:47	10
IK22068	K176-01M	C	9.997	11/22/2122:57	10
IK22069	K176-02J	C	ND	11/22/2123:08	10
IK22070	K176-02M	C	9.913	11/22/2123:18	10
IK22071	K203-01	C	ND	11/22/2123:29	1
IK22072	K203-01I	C	ND	11/22/2123:39	5
IK22073	CCV19	C	98%	11/22/2123:49	1
IK22074	CCB19	C	ND	11/23/2100:00	1

IK22 001 CCV7

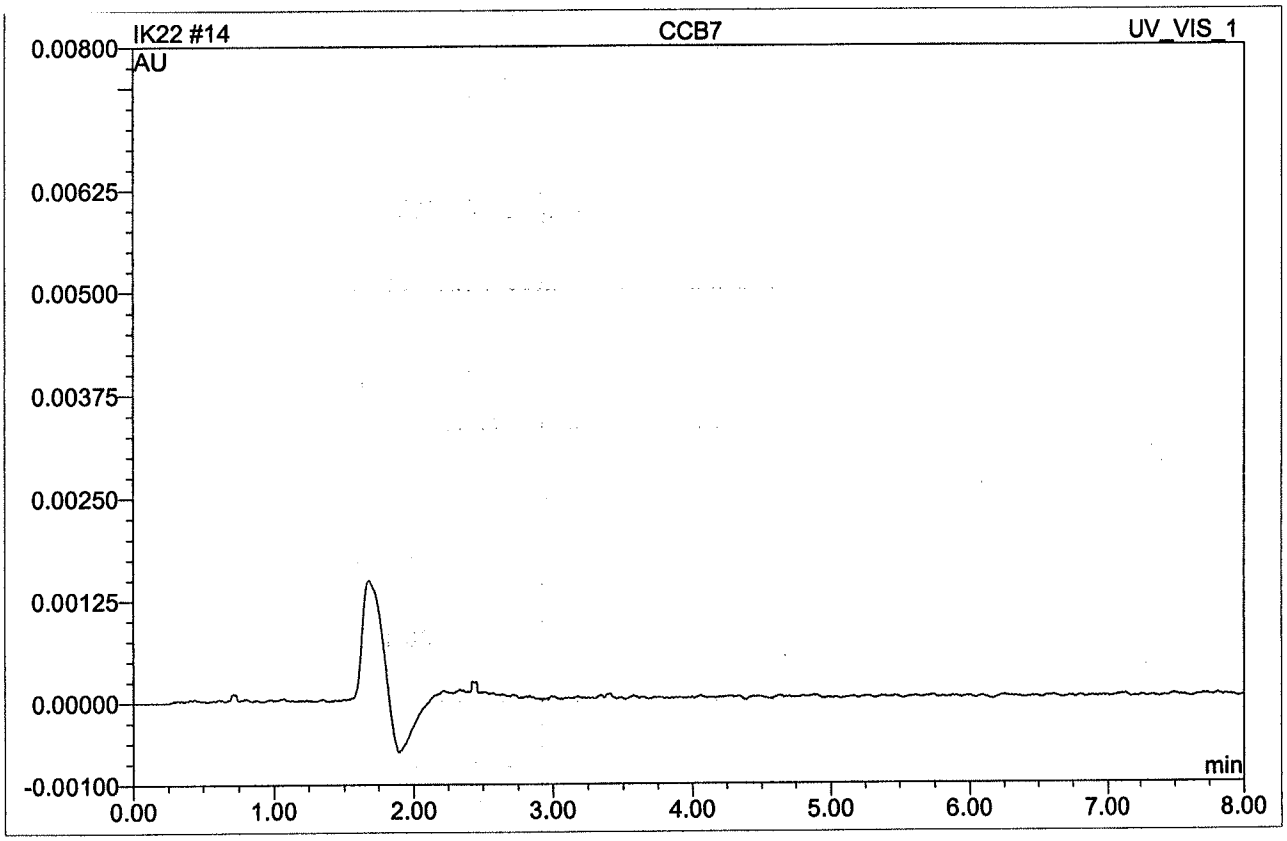
Sample Name:	**CCV7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/22/2021 10:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.24	Cr6	0.0013070	0.0002062	100.00	1.962	BMB*
Total:			0.001	0.000	100.00	1.962	

IK22 002 CCB7

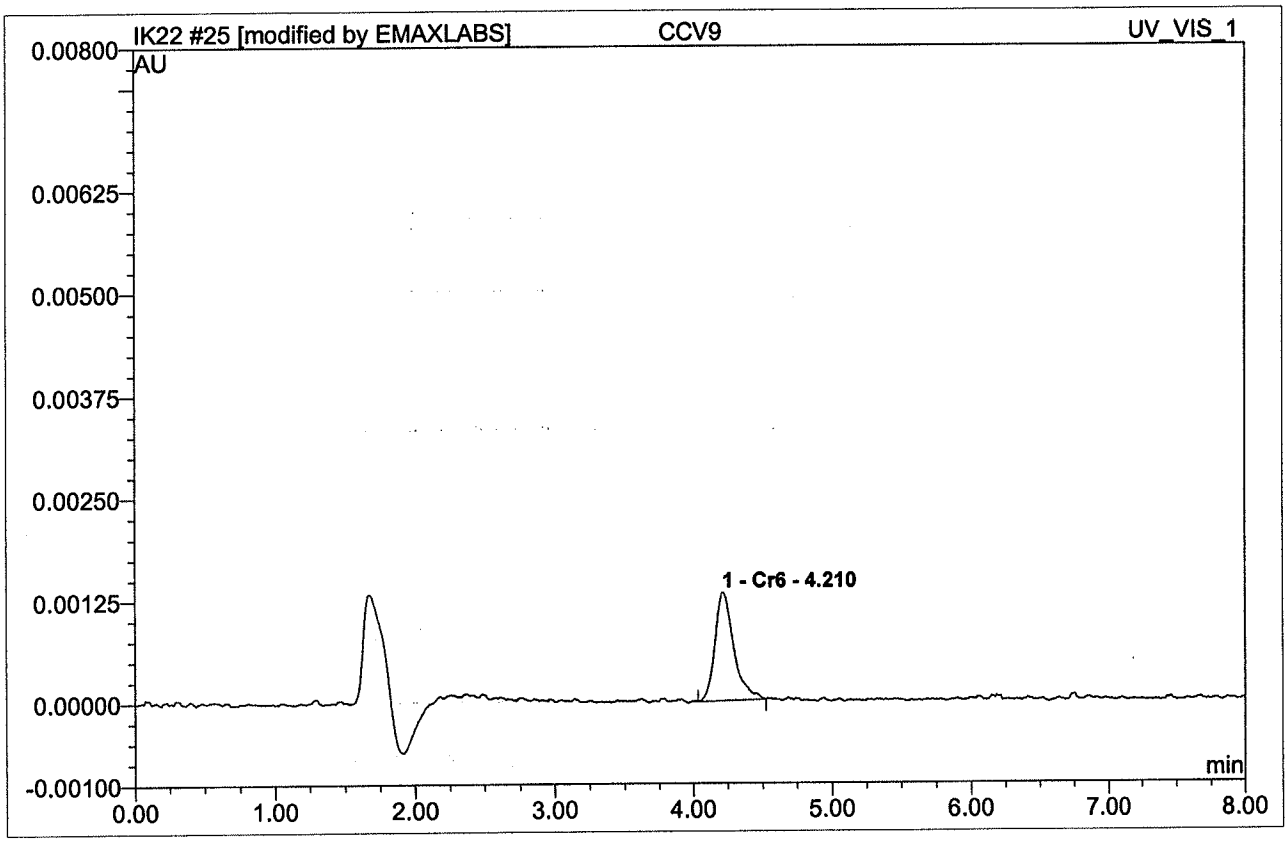
Sample Name:	**CCB7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/22/2021 11:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IK22 013 CCV9

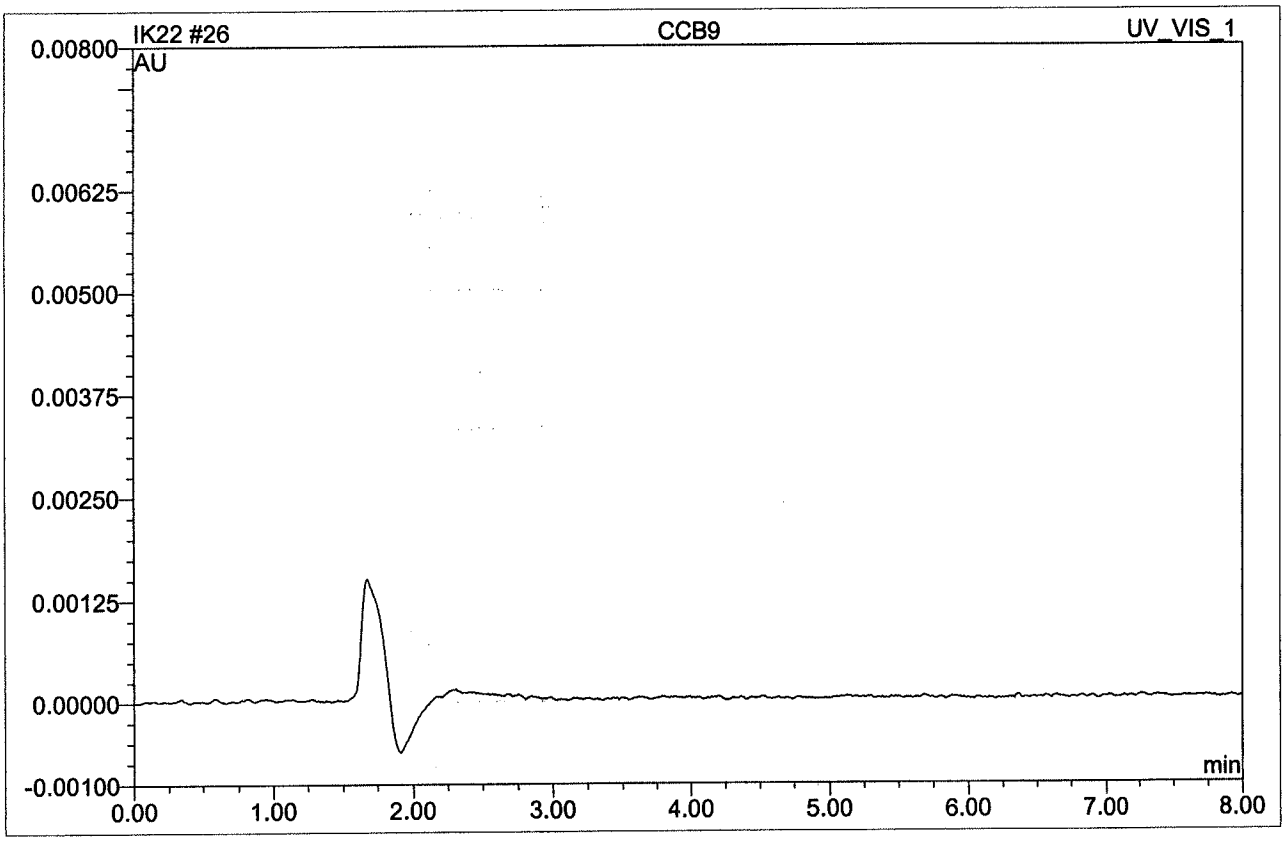
Sample Name:	**CCV9**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/22/2021 13:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0013220	0.0002077	100.00	1.976	BMB*
Total:			0.001	0.000	100.00	1.976	

IK22 014 CCB9

Sample Name:	**CCB9**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59K19**	*Dilution Factor:*	**1**
Recording Time:	**11/22/2021 13:13**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
HEXAVALENT CHROMIUM IC

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Post Column Solution: **Final Volume:** 1,000 mL

1,5 Diphenylcarbohydrazide : 0.5 g SW6A-01-01-08

MeOH : 100 mL SW1A-011-01-02

H_2SO_4 : 28 mL SW1A-009-17-09

Eluent: **Final Volume:** 2,000 mL

$(NH_4)_2SO_4$: 66 g SW6A-01-01-10

NH_4OH : 13 mL SW9A-04-066

☐ **pH Adjusted Water ID #:**
(range 9.3-9.5)

☑ **Buffer** (10 mL → 100 mL) SP2-05-04-02

Reagent Water ID #: RW1-21-004

ICAL Linear Range (ppb): S_0 - 0.00
S_1 - 0.20
S_2 - 0.50
S_3 - 1.00
S_4 - 2.00
S_5 - 5.00
S_6 - 7.50
S_7 - 10.0
I_{CV} - 3.00

Column: Dionex IonPac AS7 (4x250mm) Serial: 19010324B
Guard Column: Dionex IonPac NG1 (4x35mm) Serial: 19061121B
Wavelength: 530 nm
Flow Rate: 1.00mL/min
Injection: 0.250mL

Book #:	A59-054
Instrument No.:	59
Pipette ID:	SW9A-04-017
	A42762405
	SW9A-04-052
Balance ID:	10601202
Analytical Sequence:	IK19
Method File:	IC59K19
Analytical Batch:	

SOP #	Rev. #
☑ EMAX-218.6	7
☑ EMAX-7199	7
☐ EMAX-	

STANDARDS ID	
ICAL	SW6B-004-09-02
ICV	↓ -03
CCV	

LCS/MS STANDARDS				
	Standard ID	Conc	Spike Amt	Final Vol
LCS				
MS				

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ CHROMELEON	
☐	

5 mL vial kit Lot #: 038008 Snap-Seal Container

0.45 µm filter lot #: 4 oz: 35520012

0.2 µm filter lot #: 1.5 oz:

Analyzed By: AS

Date: 11/19/21

Sequence: IK19
Operator: EMAXLABS
Printed: 11/19/2021 1:44:58 PM

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 12

FINAL

Created: 11/19/2021 11:18:35 AM by EMAXLABS
Last Update: 11/19/2021 1:44:47 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
1	IK19	001	IB	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 11:32:42 AM	1.0000	BUFFER
2	IK19	002	S-0	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 11:43:07 AM	1.0000	
3	IK19	003	S-1	Standard	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 11:53:31 AM	1.0000	0.2 PPB
4	IK19	004	S-2	Standard	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 12:03:55 PM	1.0000	0.5 PPB
5	IK19	005	S-3	Standard	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 12:14:19 PM	1.0000	1.0 PPB
6	IK19	006	S-4	Standard	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 12:24:43 PM	1.0000	2.0 PPB
7	IK19	007	S-5	Standard	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 12:35:07 PM	1.0000	5.0 PPB
8	IK19	008	S-6	Standard	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 12:45:31 PM	1.0000	7.5 PPB
9	IK19	009	S-7	Standard	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 12:55:56 PM	1.0000	10 PPB
10	IK19	010	ICV	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 1:06:20 PM	1.0000	3.0 PPB
11	IK19	011	ICB	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 1:16:44 PM	1.0000	
12	IK19	012	LOW CCV	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 1:27:09 PM	1.0000	0.2 PPB

Chromeleon © Dionex Corporation, Version 6.70 SP2a Build 1871

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
HEXAVALENT CHROMIUM IC

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Post Column Solution: **Final Volume:** 1,000 mL

1,5 Diphenylcarbohydrazide : 0.5 g SW6A-01-01-08

MeOH : 100 mL SW1A-011-01-02

H_2SO_4 : 28 mL ↓ -009-17-07

Eluent: **Final Volume:** 2,000 mL

$(NH_4)_2SO_4$: 66 g SW6A-01-01-10

NH_4OH : 13 mL SW9A-04-066

☐ **pH Adjusted Water ID #:**
(range 9.3-9.5)

☑ **Buffer** (10 mL → 100 mL) SP2-05-04-02

Reagent Water ID #: RW1-21-004

HCK011W: K137, K159, K176, K203

Post-Spike

Standard I.D.	Conc	Spike Amt.	Final vol.	Final conc.
SW6B-004-08-09	100 ppb	0.050 mL	5 mL	1.0 ppb
↓	↓	0.075	↓	1.5
		0.100		2.0
↓	↓	0.150 ↓	↓	3.0 ↓

Book #: A59-054

Instrument No.: 59

Pipette ID: SW9A-04-017

A42762405

SW9A-04-052

Balance ID: 10601202

Analytical Sequence: IK22

Method File: IC59K19

Analytical Batch: HCK011W

SOP #	Rev. #
☑ EMAX-218.6	7
☐ EMAX-7199	7
☐ EMAX-	

STANDARDS ID	
ICAL	
ICV	
CCV	SW6B-004-09-05

LCS/MS STANDARDS

	Standard ID	Conc	Spike Amt	Final Vol
LCS	SW6B-004-08-09	100 ppb	0.100 mL	5 mL
MS	↓	↓	0.050 mL	↓

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ CHROMELEON	
☐	

5 mL vial kit Lot #: 038008 Snap-Seal Container

0.45 µm filter lot #: 21008103 4 oz: 355 20012

0.2 µm filter lot #: 1.5 oz: 23020009

Analyzed By: AS

Date: 11/22/21

Sequence: IK22
Operator: EMAXLABS

Printed: 11/23/2021 6:59:02 PM

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 86

FINAL

Created: 11/22/2021 10:51:13 AM by EMAXLABS
Last Update: 11/23/2021 6:50:41 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
1	IK22		IB	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 11:32:42 AM	1.0000	BUFFER
2	IK22		S-0	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 11:43:07 AM	1.0000	
3	IK22		S-1	Standard	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 11:53:31 AM	1.0000	0.2 PPB
4	IK22		S-2	Standard	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 12:03:55 PM	1.0000	0.5 PPB
5	IK22		S-3	Standard	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 12:14:19 PM	1.0000	1.0 PPB
6	IK22		S-4	Standard	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 12:24:43 PM	1.0000	2.0 PPB
7	IK22		S-5	Standard	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 12:35:07 PM	1.0000	5.0 PPB
8	IK22		S-6	Standard	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 12:45:31 PM	1.0000	7.5 PPB
9	IK22		S-7	Standard	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 12:55:56 PM	1.0000	10 PPB
10	IK22		ICV	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 1:06:20 PM	1.0000	3.0 PPB
11	IK22		ICB	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 1:16:44 PM	1.0000	
12	IK22		LOW CCV	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/19/2021 1:27:09 PM	1.0000	0.2 PPB
13	IK22	001	CCV7	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 10:55:54 AM	1.0000	
14	IK22	002	CCB7	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 11:06:18 AM	1.0000	
15	IK22	003	HCK011WB	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 11:16:42 AM	1.0000	
16	IK22	004	HCK011WL	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 11:27:07 AM	1.0000	
17	IK22	005	HCK011WC	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 11:37:31 AM	1.0000	
18	IK22	006	K137-01	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 11:47:55 AM	1.0000	
19	IK22	007	K137-01M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 11:58:19 AM	1.0000	
20	IK22	008	K137-01S	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 12:08:43 PM	1.0000	
21	IK22	009	K137-02	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 12:19:07 PM	1.0000	
22	IK22	010	K137-02M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 12:29:31 PM	1.0000	
23	IK22	011	K159-01	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 12:39:56 PM	1.0000	OVER RANGE
24	IK22	012	K159-01I	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 12:53:08 PM	2.0000	2.5mLto5mL
25	IK22	013	CCV9	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 1:03:32 PM	1.0000	
26	IK22	014	CCB9	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 1:13:56 PM	1.0000	
27	IK22	015	K159-01M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 1:24:21 PM	2.0000	2.5mLto5mL

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Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 86

FINAL

Created: 11/22/2021 10:51:13 AM by EMAXLABS
Last Update: 11/23/2021 6:50:41 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
28	IK22	016	K159-02	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 1:34:45 PM	1.0000	OVER RANGE
29	IK22	017	K159-02I	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 1:45:09 PM	2.0000	2.5mLto5mL
30	IK22	018	K159-02M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 1:55:33 PM	2.0000	2.5mLto5mL
31	IK22	019	K159-03	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 2:05:57 PM	1.0000	OVER RANGE
32	IK22	020	K159-03I	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 2:20:54 PM	5.0000	1mLto5mL
33	IK22	021	K159-03M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 2:31:19 PM	5.0000	1mLto5mL
34	IK22	022	K159-04	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 2:41:43 PM	1.0000	
35	IK22	023	K159-04M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 2:54:19 PM	1.0000	
36	IK22	024	K159-05	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 3:04:43 PM	1.0000	
37	IK22	025	CCV11	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 3:15:07 PM	1.0000	
38	IK22	026	CCB11	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 3:25:31 PM	1.0000	
39	IK22	027	K159-05M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 3:35:55 PM	1.0000	
40	IK22	028	K159-06	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 3:46:20 PM	1.0000	OVER RANGE
41	IK22	029	K159-06I	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 3:57:18 PM	2.0000	2.5mLto5mL
42	IK22	030	K159-06M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 4:07:42 PM	2.0000	2.5mLto5mL
43	IK22	031	K159-07	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 4:18:06 PM	1.0000	OVER RANGE
44	IK22	032	K159-07I	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 4:36:17 PM	5.0000	1mLto5mL
45	IK22	033	K159-07M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 4:46:41 PM	5.0000	1mLto5mL
46	IK22	034	K159-08	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 4:57:05 PM	1.0000	OVER RANGE
47	IK22	035	K159-08I	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 5:07:30 PM	5.0000	1mLto5mL
48	IK22	036	K159-08M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 5:17:54 PM	5.0000	1mLto5mL
49	IK22	037	CCV13	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 5:28:18 PM	1.0000	
50	IK22	038	CCB13	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 5:38:42 PM	1.0000	
51	IK22	039	K159-09	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 5:49:49 PM	1.0000	OVER RANGE
52	IK22	040	K159-09I	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 6:05:23 PM	5.0000	1mLto5mL
53	IK22	041	K159-09M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 6:15:47 PM	5.0000	1mLto5mL
54	IK22	042	K176-01	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 6:26:11 PM	1.0000	

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 86

FINAL

Created: 11/22/2021 10:51:13 AM by EMAXLABS
Last Update: 11/23/2021 6:50:41 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
55	IK22	043	K176-01M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 6:37:50 PM	1.0000	
56	IK22	044	K176-02	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 6:48:13 PM	1.0000	
57	IK22	045	K176-02M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 6:58:37 PM	1.0000	
58	IK22	046	K176-03	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 7:09:02 PM	1.0000	
59	IK22	047	K176-03M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 7:19:26 PM	1.0000	
60	IK22	048	K176-03S	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 7:29:51 PM	1.0000	
61	IK22	049	CCV15	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 7:40:15 PM	1.0000	
62	IK22	050	CCB15	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 7:50:39 PM	1.0000	
63	IK22	051	K176-04	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 8:01:03 PM	1.0000	
64	IK22	052	K176-04M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 8:11:27 PM	1.0000	
65	IK22	053	K176-05	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 8:21:51 PM	1.0000	
66	IK22	054	K176-05M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 8:32:15 PM	1.0000	
67	IK22	055	K159-05I	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 8:42:40 PM	2.0000	2.5mLto5mL
68	IK22	056	K159-05M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 8:53:04 PM	2.0000	2.5mLto5mL
69	IK22	057	K159-04I	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 9:03:28 PM	2.0000	2.5mLto5mL
70	IK22	058	K159-04M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 9:13:52 PM	2.0000	2.5mLto5mL
71	IK22	059	K159-10	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 9:24:16 PM	1.0000	
72	IK22	060	K159-10M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 9:34:40 PM	1.0000	
73	IK22	061	CCV17	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 9:45:04 PM	1.0000	
74	IK22	062	CCB17	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 9:55:28 PM	1.0000	
75	IK22	063	K176-01I	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 10:05:52 PM	5.0000	1mLto5mL
76	IK22	064	K176-01M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 10:16:16 PM	5.0000	1mLto5mL
77	IK22	065	K176-02I	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 10:26:40 PM	5.0000	1mLto5mL
78	IK22	066	K176-02M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 10:37:04 PM	5.0000	1mLto5mL
79	IK22	067	K176-01J	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 10:47:28 PM	10.0000	0.5mLto5mL;CONF
80	IK22	068	K176-01M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 10:57:52 PM	10.0000	0.5mLto5mL;CONF
81	IK22	069	K176-02J	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 11:08:16 PM	10.0000	0.5mLto5mL;CONF

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 86

FINAL

Created: 11/22/2021 10:51:13 AM by EMAXLABS
Last Update: 11/23/2021 6:50:41 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
82	IK22	070	K176-02M	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 11:18:40 PM	10.0000	0.5mLto5mL;CONF
83	IK22	071	K203-01	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 11:29:05 PM	1.0000	
84	IK22	072	K203-01I	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 11:39:28 PM	5.0000	1mLto5mL;CONF
85	IK22	073	CCV19	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/22/2021 11:49:52 PM	1.0000	
86	IK22	074	CCB19	Unknown	250.0	Cr6 Program	IC59K19	Finished	11/23/2021 12:00:17 AM	1.0000	

SAMPLE PRESERVATION LOG(S)

EMAX LABORATORIES, INC.

pH ADJUSTMENT/SAMPLE PRESERVATION LOG FOR HEXAVALENT CHROMIUM

SOP ☑ EMAX-218.6 Rev. 7 ☐ EMAX-7199 Rev. 7 Book #: PHC-025

Matrix: W Start Date: 11/16/21 Time: 16:24 End Date: 11/16/21 Time: 16:47

Sample Prep ID	Lab Sample ID	Initial pH	Final pH	Notes
01	K137-01	9.50	9.50	no adjustment needed; Cr
02	K137-02	9.48	9.48	
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				YC 11/16/21

Standards	ID	pH
Buffer 7	SW1-02-07-30	7.00
Buffer 10	SW1-02-08-01	10.01
Check pH Buffer (8)	–	–
Check pH Buffer 7.99	SW1-02-08-16	7.94
pH meter	F7	

Reagent	Standard ID #
NaOH	
$(NH_4)_2SO_4/NH_4OH$	
HNO_3	

Legend:

Color	Texture	Clarity	Artifacts
Bu = Blue Bl = Black	Cs = Coarse	Cr = Clear	Rk = Rocks
Bn = Brown Gn = Green	Md = Medium	Cy = Cloudy	Sl = Shale
Og = Orange Rd = Red	Fn = Fine	Td = Turbid	Vg = Vegetation
Yw = Yellow			

☑ Samples were received with preservation

Comments:

Prepared By: YC

Standard Added By:

Checked By: YC

RETENTION TIME WINDOW

RETENTION TIME WINDOW

METHOD 218.6/7199

Lab Name:	EMAX	**METHOD:**	EMAX-218.6/7199
Instrument ID:	DX500IC59	**IC COLUMN:**	AS7/AG7 / AS7/NG1
		COLUMN SIZE:	4x250mm

Compound	Ical Mean RT	from	to	Retention Time Window
CHROMIUM VI	**4.23**	4.12	4.34	**0.108**

IC59K19

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21K137

METHOD E300.0
CHLORIDE

A total of two(2) water samples were received on 11/16/21 to be analyzed for Chloride in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Chloride was not detected in ICK017WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICK017WL/ICK017WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21K137

METHOD E300.0
FLUORIDE

A total of two(2) water samples were received on 11/16/21 to be analyzed for Fluoride in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Fluoride was not detected in ICK017WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICK017WL/ICK017WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21K137

METHOD E300.0
NITRATE AS N

A total of two(2) water samples were received on 11/16/21 to be analyzed for Nitrate as N in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Nitrate was not detected in ICK017WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICK017WL/ICK017WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

Sample 21K137-01 reported at dilution factor >1 was due to chloride interference. Refer to sample result form for details.

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21K137

METHOD E300.0
SULFATE

A total of two(2) water samples were received on 11/16/21 to be analyzed for Sulfate in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Sulfate was not detected in ICK017WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICK017WL/ICK017WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

SAMPLE RESULTS

METHOD E300.0
CHLORIDE

Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 21K137

Matrix : WATER
InstrumertID : D0

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICK017WB	ND	1	NA	0.2	0.1	11/16/2110:28	NA	AK19-03	AK19-01	ICK017W	NA	NA
LCS1W	ICK017WL	1.94	1	NA	0.2	0.1	11/16/2110:45	NA	AK19-04	AK19-01	ICK017W	NA	NA
LCD1W	ICK017WC	1.91	1	NA	0.2	0.1	11/16/2111:02	NA	AK19-05	AK19-01	ICK017W	NA	NA
MTS-1-Q421	K137-01K	1160	200	NA	40	20	11/16/2115:52	NA	AK19-22	AK19-13	ICK017W	11/15/2109:4C	11/16/21
MTS-2-Q421	K137-02J	724	100	NA	20	10	11/16/2116:26	NA	AK19-24	AK19-13	ICK017W	11/15/2109:5C	11/16/21

METHOD E300.0
FLUORIDE

Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 21K137

Matrix : WATER
InstrumentID : DO

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICK017WB	ND	1	NA	0.1	0.05	11/16/2110:28	NA	AK19-03	AK19-01	ICK017W	NA	NA
LCS1W	ICK017WL	0.975	1	NA	0.1	0.05	11/16/2110:45	NA	AK19-04	AK19-01	ICK017W	NA	NA
LCD1W	ICK017WC	0.959	1	NA	0.1	0.05	11/16/2111:02	NA	AK19-05	AK19-01	ICK017W	NA	NA
MTS-1-Q421	K137-01	4.74	1	NA	0.1	0.05	11/16/2113:53	NA	AK19-15	AK19-13	ICK017W	11/15/2109:40	11/16/21
MTS-2-Q421	K137-02	5.00	1	NA	0.1	0.05	11/16/2114:10	NA	AK19-16	AK19-13	ICK017W	11/15/2109:50	11/16/21

METHOD E300.0
NITRATE AS N

Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 21K137

Matrix : WATER
InstrumentID : DO

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICK017WB	ND	1	NA	0.1	0.05	11/16/2110:28	NA	AK19-03	AK19-01	ICK017W	NA	NA
LCS1W	ICK017WL	0.961	1	NA	0.1	0.05	11/16/2110:45	NA	AK19-04	AK19-01	ICK017W	NA	NA
LCD1W	ICK017WC	0.952	1	NA	0.1	0.05	11/16/2111:02	NA	AK19-05	AK19-01	ICK017W	NA	NA
MTS-2-Q421	K137-02	1.57	1	NA	0.1	0.05	11/16/2114:10	NA	AK19-16	AK19-13	ICK017W	11/15/2109:50	11/16/21
MTS-1-Q421	K137-01I	ND	2	NA	0.2	0.1	11/16/2115:18	NA	AK19-20	AK19-13	ICK017W	11/15/2109:40	11/16/21

METHOD E300.0
SULFATE

Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 21K137

Matrix : WATER
InstrumentID : DO

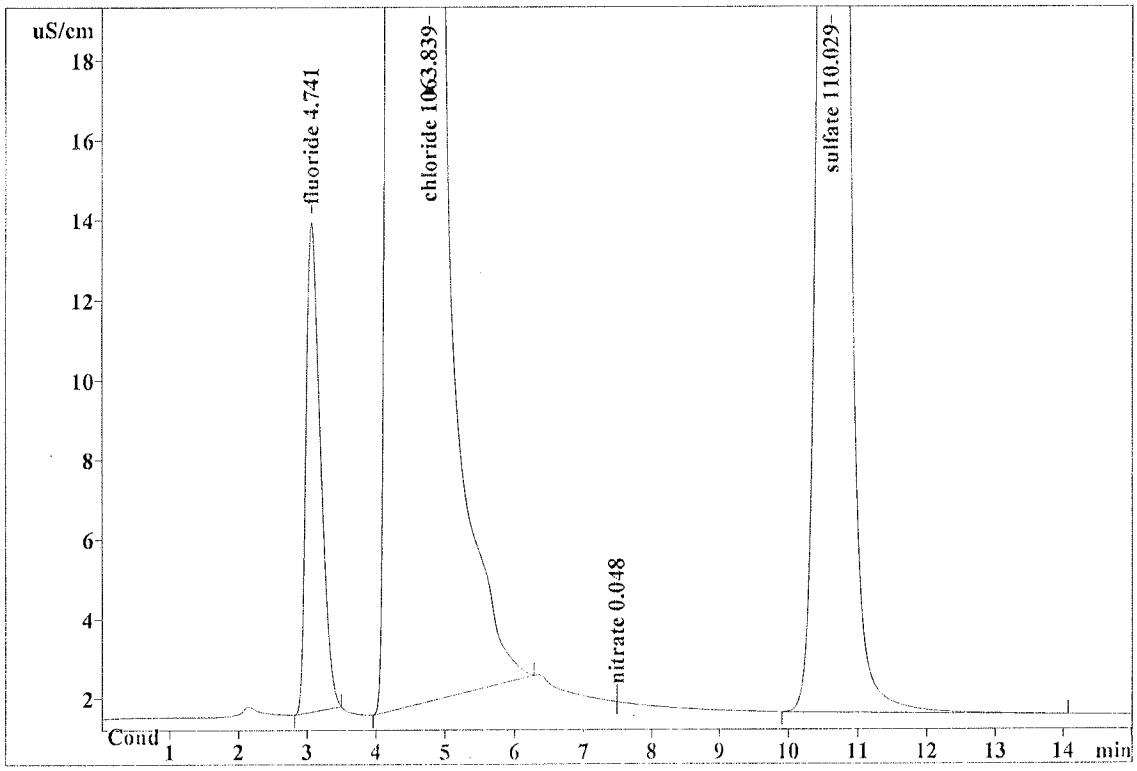
CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICK017WB	ND	1	NA	0.5	0.25	11/16/2110:28	NA	AK19-03	AK19-01	ICK017W	NA	NA
LCS1W	ICK017WL	5.12	1	NA	0.5	0.25	11/16/2110:45	NA	AK19-04	AK19-01	ICK017W	NA	NA
LCD1W	ICK017WC	5.06	1	NA	0.5	0.25	11/16/2111:02	NA	AK19-05	AK19-01	ICK017W	NA	NA
MTS-2-Q421	K137-02I	144	10	NA	5	2.5	11/16/2116:09	NA	AK19-23	AK19-13	ICK017W	11/15/2109:50	11/16/21
MTS-1-Q421	K137-01T	128	20	NA	10	5	11/16/2117:35	NA	AK19-28	AK19-25	ICK017W	11/15/2109:40	11/16/21

Report date: 11/16/2021 4:03:29 PM
Printed by: VDuran

Ident: AK19-15 K137-01
Analysis from: 11/16/2021 1:53:11 PM
File: _2021-11-16_13-53.chw Last save: 11/16/2021 2:14:53 PM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175751

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 15
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.06	12.28	180.749	4.741	fluoride ✓
2	4.77	880.07	25553.098	1063.839	chloride
3	7.49	-0.00	-0.000	0.048	nitrate
4	10.61	93.69	1846.595	110.029	sulfate
4	15.00	986.04	27580.442	1178.656	

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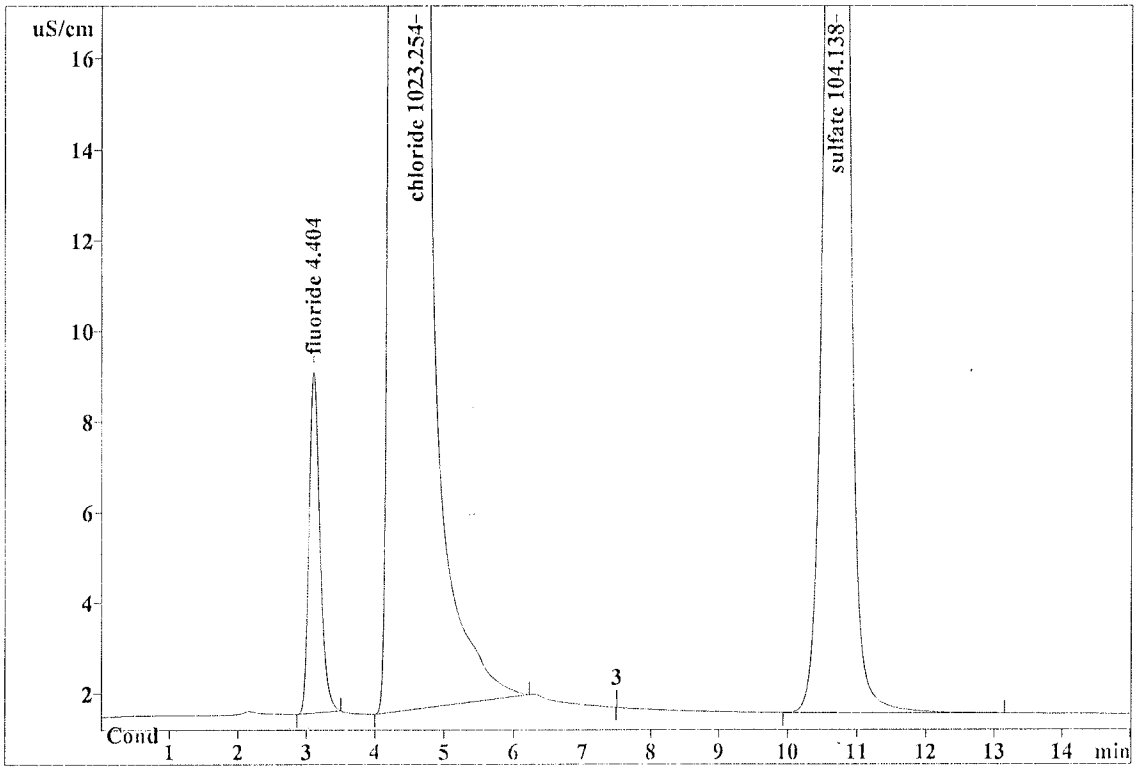
Report date: 11/16/2021 4:03:37 PM
Printed by: VDuran

Ident: AK19-20 K137-01I DF=2
Analysis from: 11/16/2021 3:18:36 PM
File: _2021-11-16_15-18.chw Last save: 11/16/2021 4:03:08 PM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175756

SAMPLE: METHOD 300/9056/4110B
: 10ml/20ml
Vial number: 20
Volume: 1.0 µL
Dilution: 2.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.10	7.52	83.457	4.404	fluoride
2	4.58	642.54	12287.997	1023.254	chloride
3	7.50	-0.00	0.000	0.000	
4	10.68	46.40	872.869	104.138	sulfate
4	15.00	696.45	13244.324	1131.796	nitrate

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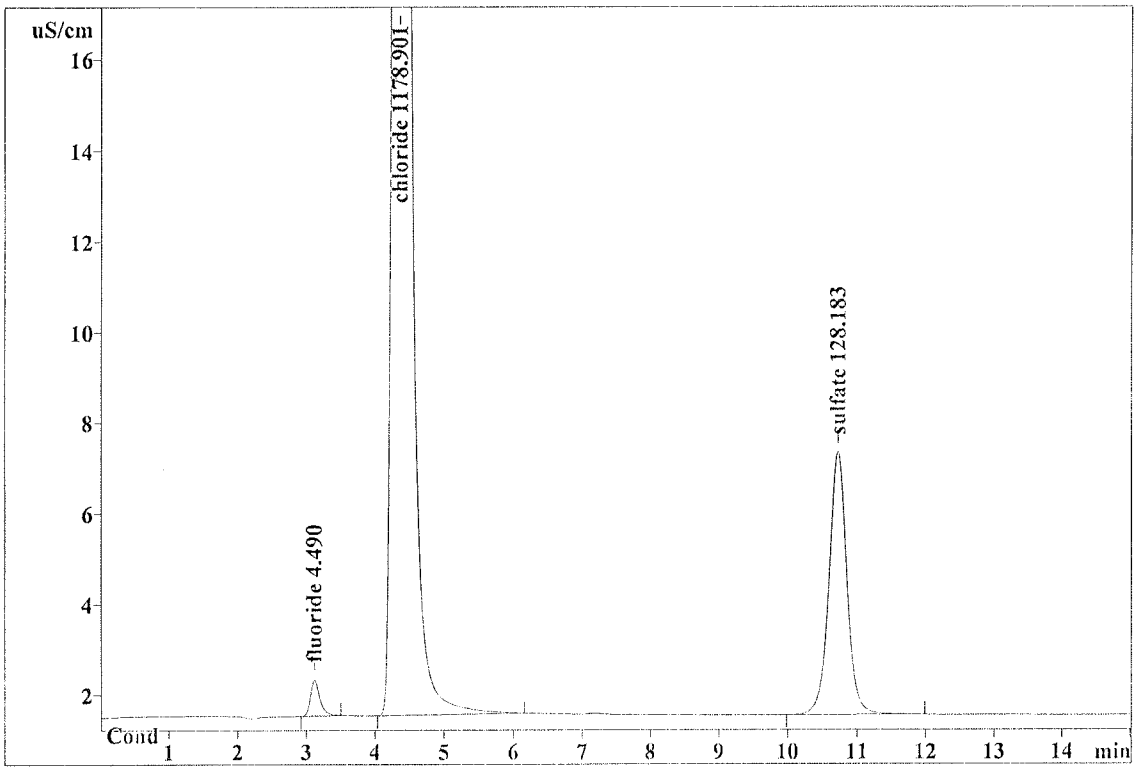
Report date: 11/17/2021 9:45:45 AM
Printed by: VDuran

Ident: AK19-28 K137-01T DF=20
Analysis from: 11/16/2021 5:35:41 PM
File: _2021-11-16_17-35.chw Last save: 11/16/2021 5:50:38 PM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175764

SAMPLE: METHOD 300/9056/4110B
: 1ml/20ml
Vial number: 28
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	0.80	7.671	4.490	fluoride
2	4.36	137.40	1413.797	1178.901	chloride
3	10.72	5.80	105.774	128.183	sulfate ✓
3	15.00	144.00	1527.241	1311.574	

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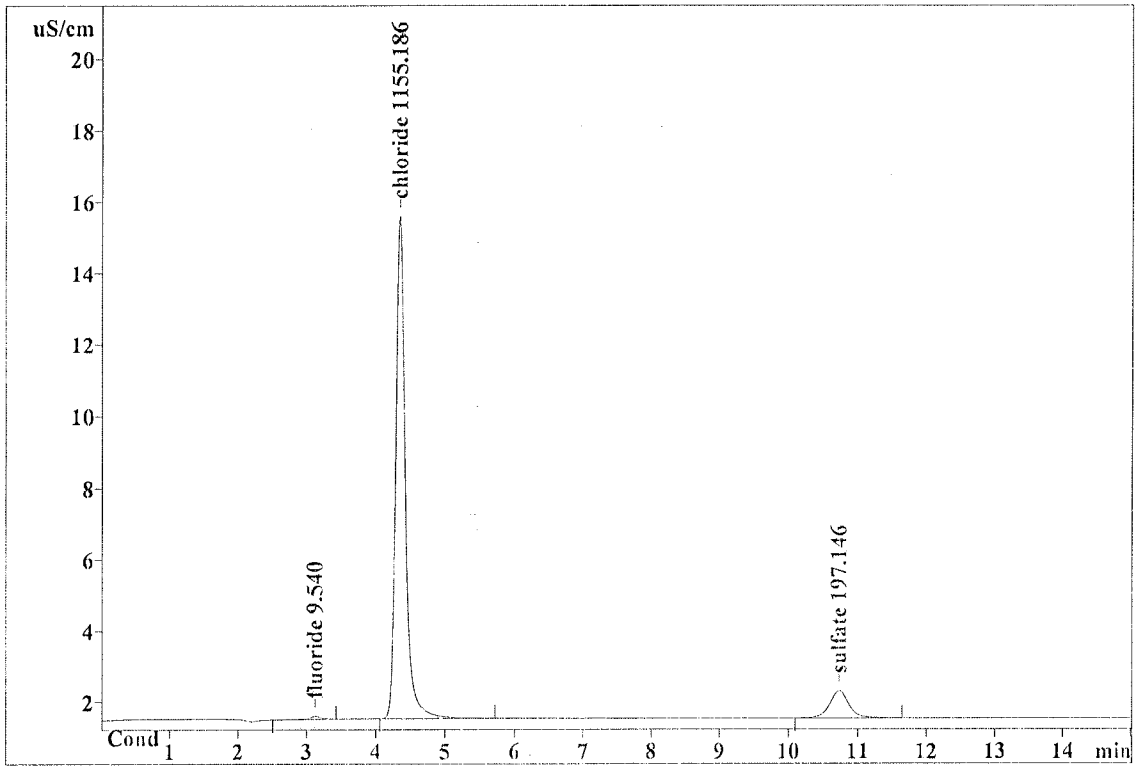
Report date: 11/16/2021 4:07:54 PM
Printed by: VDuran

Ident: AK19-22 K137-01K DF=200
Analysis from: 11/16/2021 3:52:46 PM
File: _2021-11-16_15-52.chw Last save: 11/16/2021 4:07:43 PM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175758

SAMPLE: METHOD 300/9056/4110B
: 0.2ml/40ml
Vial number: 22
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	0.08	0.895	9.540	fluoride
2	4.35	14.07	136.582	1155.186	chloride
3	10.73	0.76	14.660	197.146	sulfate
3	15.00	14.91	152.137	1361.872	

This report has been created by IC Net
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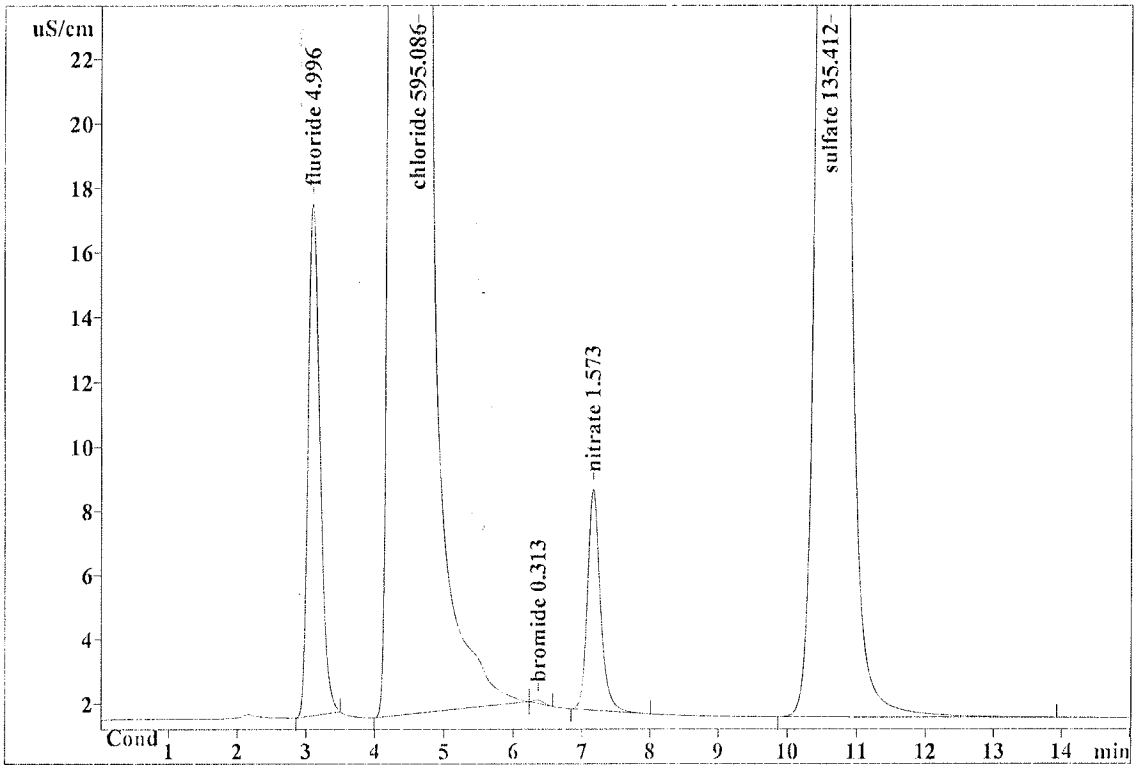
Report date: 11/16/2021 4:03:33 PM
Printed by: VDuran

Ident: AK19-16 K137-02
Analysis from: 11/16/2021 2:10:16 PM
File: _2021-11-16_14-10.chw Last save: 11/16/2021 2:29:19 PM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175752

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 16
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.10	15.89	190.543	4.996	fluoride ✓
2	4.61	683.35	14292.827	595.086	chloride
3	6.37	0.10	0.953	0.313	bromide
4	7.16	6.87	90.201	1.573	nitrate ✓
5	10.60	113.52	2273.043	135.412	sulfate
5	15.00	819.73	16847.566	737.380	

This report has been created by IC Net
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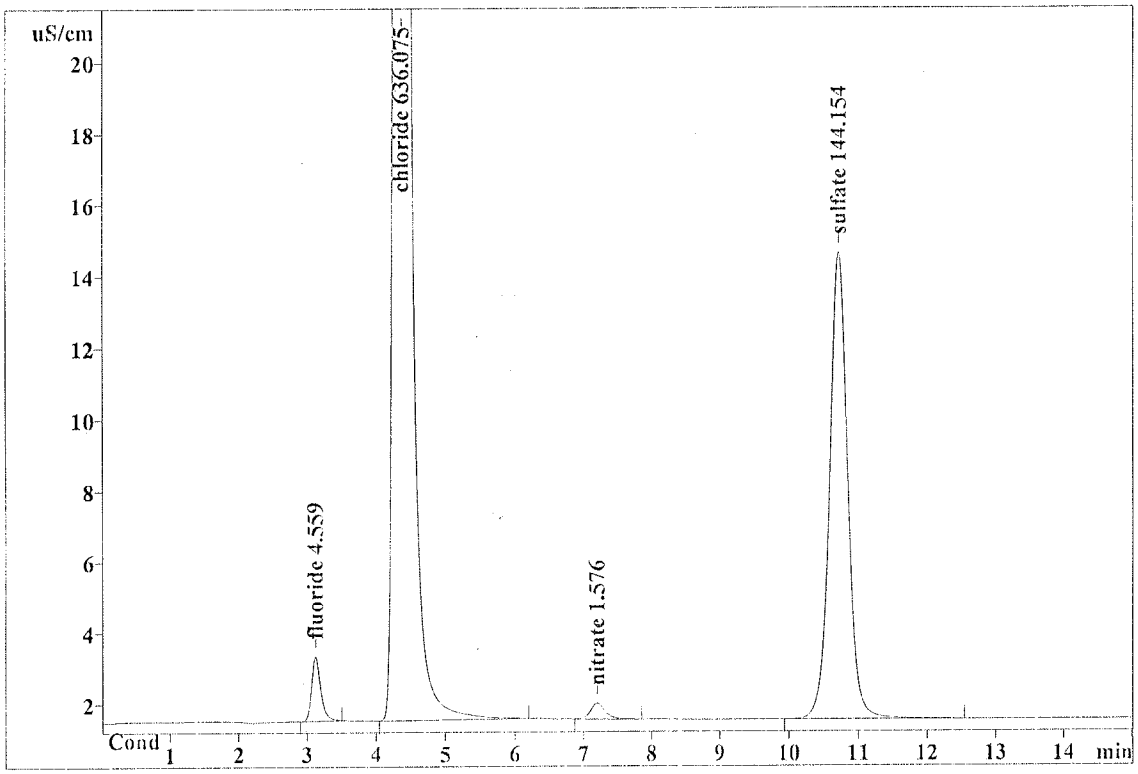
Report date: 11/16/2021 4:26:40 PM
Printed by: VDuran

Ident: AK19-23 K137-02I DF=10
Analysis from: 11/16/2021 4:09:51 PM
File: _2021-11-16_16-09.chw Last save: 11/16/2021 4:24:48 PM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175759

SAMPLE: METHOD 300/9056/4110B
: 2ml/20ml
Vial number: 23
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	1.80	16.541	4.559	fluoride
2	4.37	148.34	1525.797	636.075	chloride
3	7.20	0.44	6.509	1.576	nitrate
4	10.71	13.09	240.279	144.154	sulfate ✓
4	15.00	163.68	1789.127	786.364	

This report has been created by IC Net
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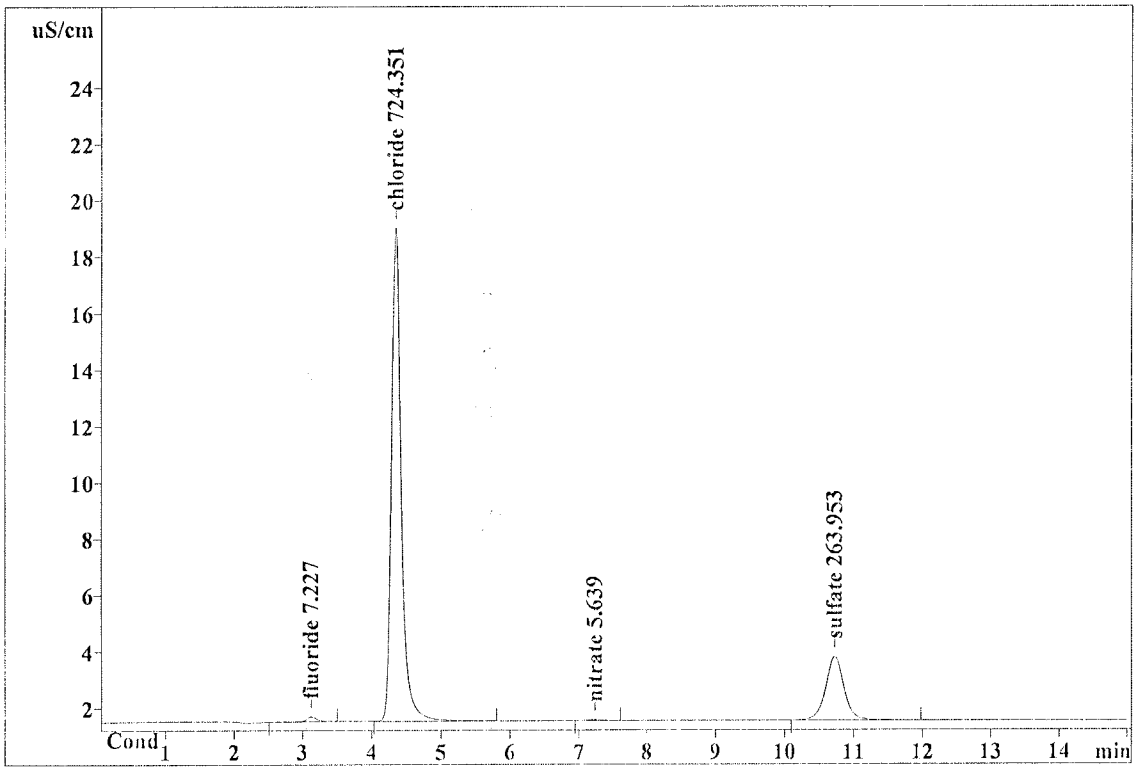
Report date: 11/16/2021 4:43:48 PM
Printed by: VDuran

Ident: AK19-24 K137-02J DF=100
Analysis from: 11/16/2021 4:26:56 PM
File: _2021-11-16_16-26.chw Last save: 11/16/2021 4:41:53 PM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175760

SAMPLE: METHOD 300/9056/4110B
: 0.2ml/20ml
Vial number: 24
Volume: 1.0 µL
Dilution: 100.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	0.17	1.837	7.227	fluoride
2	4.35	17.48	171.836	724.351	chloride ✓
3	7.23	0.03	0.525	5.639	nitrate
4	10.72	2.27	42.444	263.953	sulfate
4	15.00	19.97	216.641	1001.170	

This report has been created by IC Net
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QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21K137
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICK017WB	ICK017WL	ICK017WC
LAB FILE ID :	AK19-03	AK19-04	AK19-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	11/16/2110:28	11/16/2110:45	11/16/2111:02
PREP BATCH :	ICK017W	ICK017W	ICK017W
CALIBRATION REF:	AK19-01	AK19-01	AK19-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride	ND	2	1.94	97	2	1.91	95	2	90-110	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21K137
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICK017WB	ICK017WL	ICK017WC
LAB FILE ID :	AK19-03	AK19-04	AK19-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	11/16/2110:28	11/16/2110:45	11/16/2111:02
PREP BATCH :	ICK017W	ICK017W	ICK017W
CALIBRATION REF:	AK19-01	AK19-01	AK19-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Fluoride	ND	1	0.975	98	1	0.959	96	2	90-110	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21K137
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	ICK017WB	ICK017WL	ICK017WC
LAB FILE ID	AK19-03	AK19-04	AK19-05
DATE PREPARED	NA	NA	NA
DATE ANALYZED	11/16/2110:28	11/16/2110:45	11/16/2111:02
PREP BATCH	ICK017W	ICK017W	ICK017W
CALIBRATION REF:	AK19-01	AK19-01	AK19-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
NITRATE	ND	1	0.961	96	1	0.952	95	1	90-110	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21K137
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICK017WB	ICK017WL	ICK017WC
LAB FILE ID :	AK19-03	AK19-04	AK19-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	11/16/2110:28	11/16/2110:45	11/16/2111:02
PREP BATCH :	ICK017W	ICK017W	ICK017W
CALIBRATION REF:	AK19-01	AK19-01	AK19-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	5.12	102	5	5.06	101	1	90-110	20

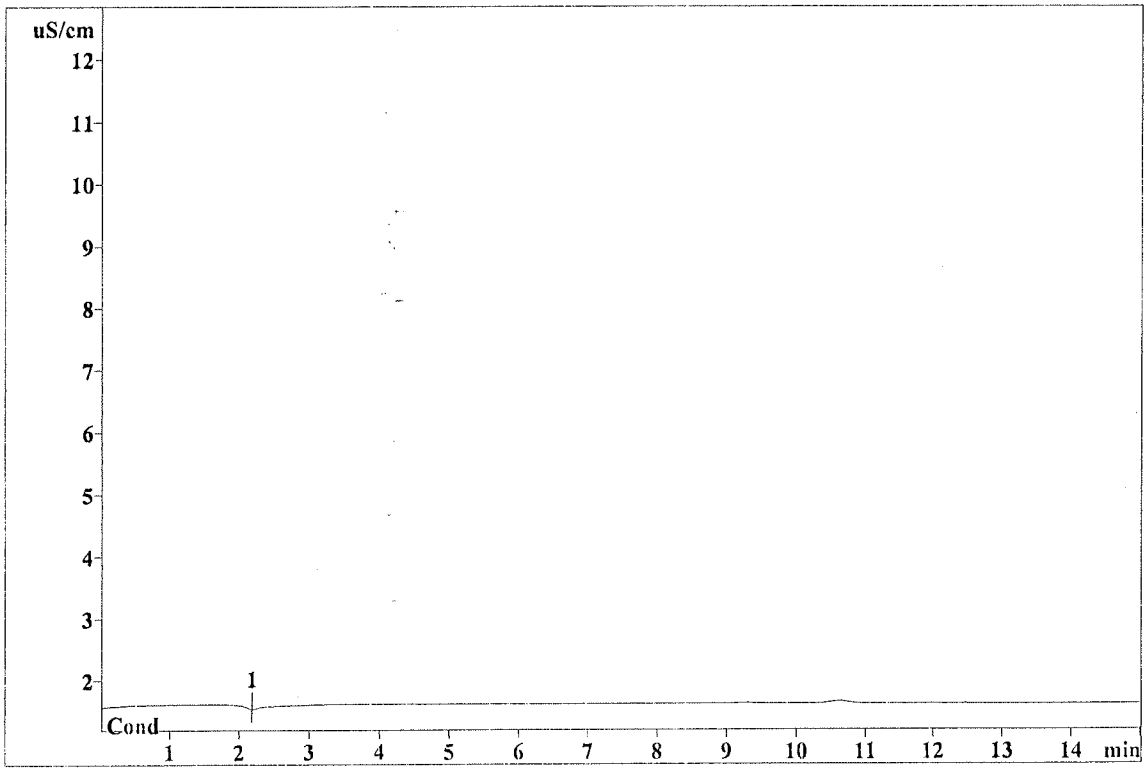
QC DATA

Report date: 11/17/2021 9:37:16 AM
Printed by: VDuran

Ident: AK19-03 ICK017WB
Analysis from: 11/16/2021 10:28:10 AM
File: _2021-11-16_10-28.chw Last save: 11/16/2021 11:11:19 AM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175739

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.18	-0.00	-0.000	0.000	

This report has been created by IC Net
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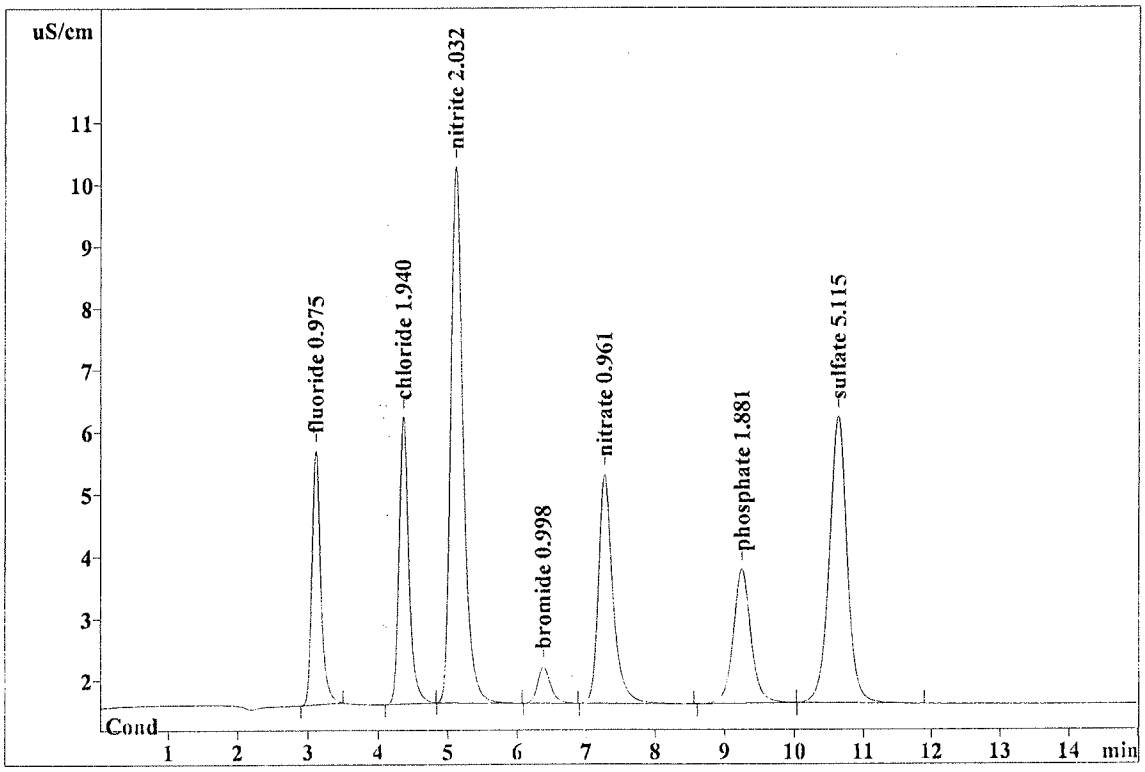
Report date: 11/17/2021 9:37:19 AM
Printed by: VDuran

Ident: AK19-04 ICK017WL
Analysis from: 11/16/2021 10:45:15 AM
File: _2021-11-16_10-45.chw Last save: 11/16/2021 11:00:12 AM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175740

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.11	4.09	36.446	0.975	fluoride
2	4.36	4.62	44.427	1.940	chloride
3	5.11	8.66	108.786	2.032	nitrite
4	6.38	0.60	7.853	0.998	bromide
5	7.27	3.69	53.992	0.961	nitrate
6	9.24	2.17	37.726	1.881	phosphate
7	10.63	4.61	84.039	5.115	sulfate
7	15.00	28.44	373.268	13.902	

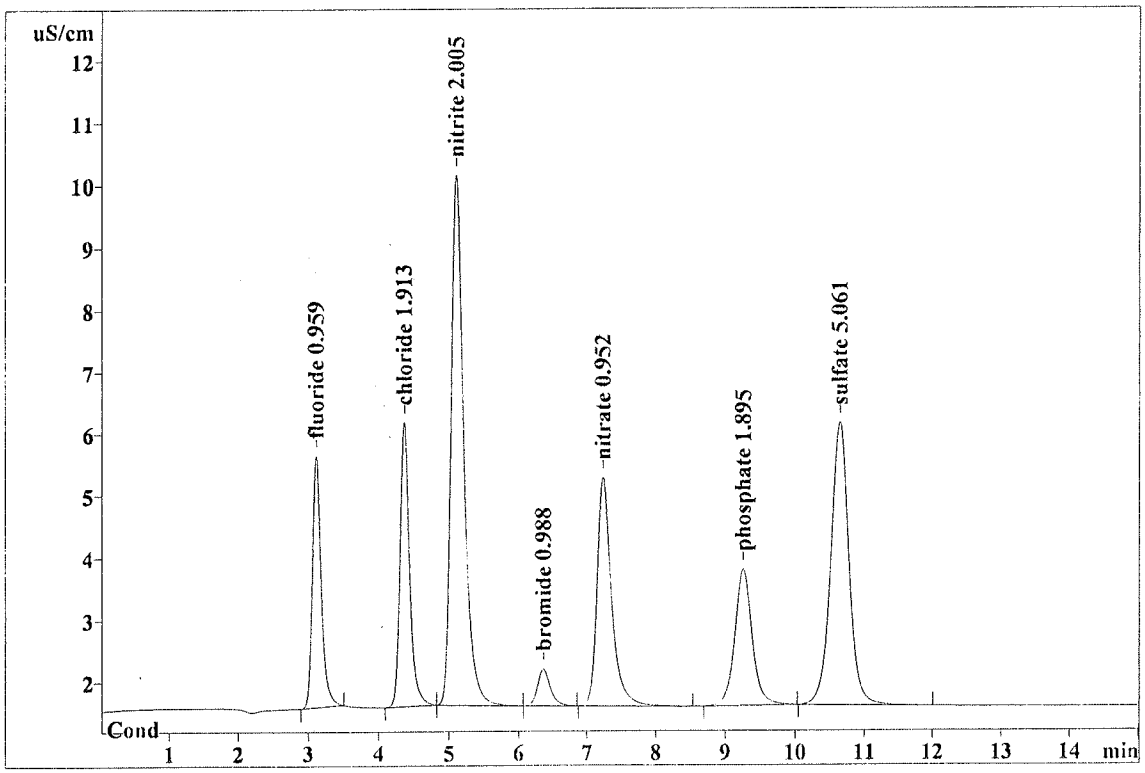
This report has been created by IC Net
METROHM LTD

Report date: 11/17/2021 9:37:23 AM
Printed by: VDuran

Ident: AK19-05 ICK017WC
Analysis from: 11/16/2021 11:02:21 AM
File: _2021-11-16_11-02.chw Last save: 11/16/2021 11:17:18 AM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175741

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.11	4.05	35.822	0.959	fluoride
2	4.36	4.58	43.782	1.913	chloride
3	5.10	8.54	107.309	2.005	nitrite
4	6.36	0.59	7.754	0.988	bromide
5	7.23	3.68	53.479	0.952	nitrate
6	9.25	2.19	38.053	1.895	phosphate
7	10.64	4.55	83.132	5.061	sulfate
7	15.00	28.20	369.331	13.774	

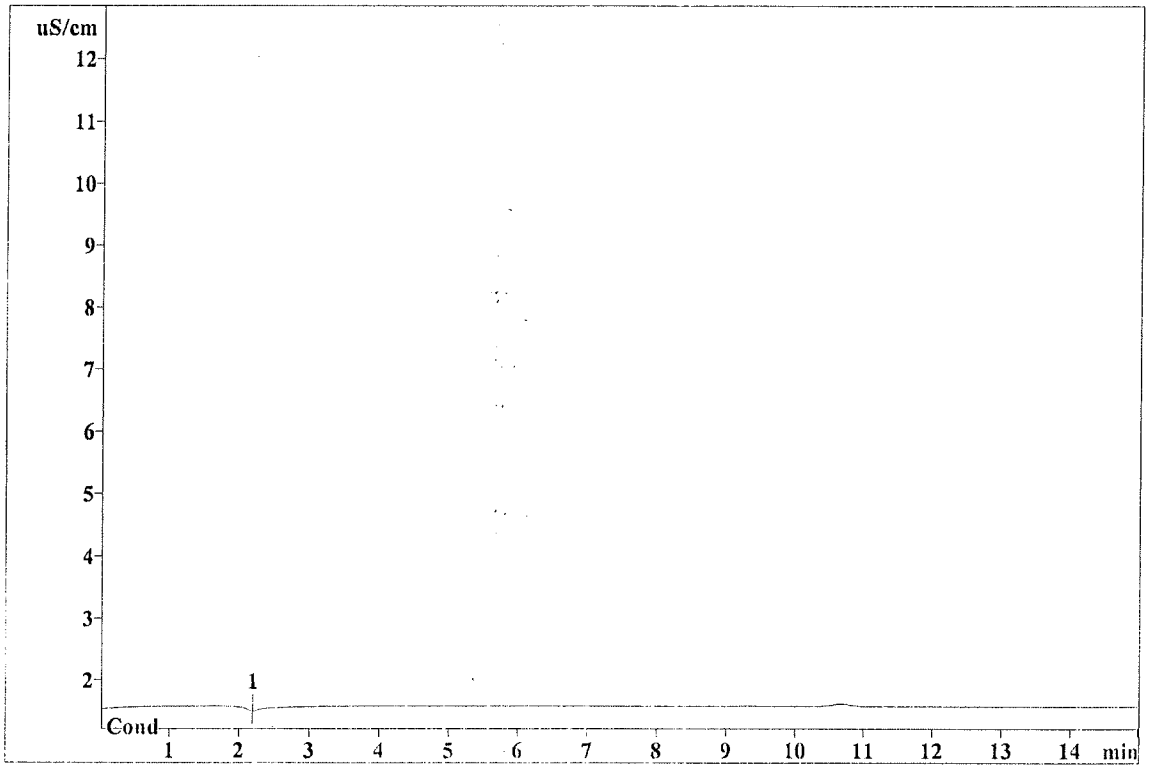
This report has been created by IC Net
METROHM LTD

INITIAL CALIBRATION(S)

IC Result Check FormVersion : K15/AK17(2021)

LFID	LSID	Selection	iodide	chloride	fluoride	nitrite	bromide	nitrate	phosphate	sulfate	RawNetID	DF
AK17-01	IB	OCFIBNPS	0	0	0	0	0	0	0	0	_2021-11-15_10-10	1
AK17-02	S0	OCFIBNPS	0	0	0	0	0	0	0	0	_2021-11-15_10-27	1
AK17-03	S1	OCFIBNPS	0	0.132271	0.0736398	0.0607096	0	0.0797421	0.2533	0.202065	_2021-11-15_10-44	1
AK17-04	S2	OCFIBNPS	0	0.166434	0.107721	0.0986172	0.297029	0.115642	0.28615	0.234807	_2021-11-15_11-01	1
AK17-05	S3	OCFIBNPS	0	0.241096	0.186426	0.179102	0.377178	0.192373	0.34602	0.307822	_2021-11-15_11-18	1
AK17-06	S4	OCFIBNPS	0	0.48526	0.463618	0.456055	0.603039	0.463213	0.568013	0.546407	_2021-11-15_11-35	1
AK17-07	S5	OCFIBNPS	0	0.952211	1.00203	0.995154	1.02623	0.984202	0.98869	0.987646	_2021-11-15_11-53	1
AK17-08	S6	OCFIBNPS	0	1.89759	2.02287	2.02018	1.86163	2.01483	1.82303	1.8492	_2021-11-15_12-10	1
AK17-09	S7	OCFIBNPS	0	4.90974	4.9937	5.08473	4.66665	5.23341	4.64207	4.72866	_2021-11-15_12-27	1
AK17-10	S8	OCFIBNPS	0	10.0654	9.48941	9.95545	9.78463	10.6449	9.71828	9.84602	_2021-11-15_12-44	1
AK17-11	S9	OCFIBNPS	0	20.1368	17.2455	18.5545	20.1836	21.1893	20.2244	20.1474	_2021-11-15_13-01	1
AK17-12	ICV	OCFIBNPS	0%*	96.5%	97.1%	101.3%	99.3%	94.9%	105.2%	100.5%	_2021-11-15_13-18	1
AK17-13	ICV1	OCFIBNPS	0%*	96.2%	99.1%	99%	101%	96%	106.4%	99.2%	_2021-11-15_13-35	1
AK17-14	ICB	OCFIBNPS	0	0	0	0	0	0	0	0	_2021-11-15_13-52	1

Report date:	11/15/2021 2:51:22 PM		
Printed by:	VDuran		
Ident:	AK17-02 S0		
Analysis from:	11/15/2021 10:27:35 AM		
File:	_2021-11-15_10-27.chw	Last save:	11/15/2021 2:48:10 PM
Modified!			
Method:	ICD0-K15.mtw	Last save:	11/15/2021 11:33:47 AM
Run operator:	VDuran		
Analysis number:	175721		
SAMPLE:	METHOD 300/9056/4110B		
:			
Vial number:	2		
Volume:	1.0 µL		
Dilution:	1.00		
Amount:	1.0000		



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.19	-0.00	-0.000	0.000	

This report has been created by IC Net
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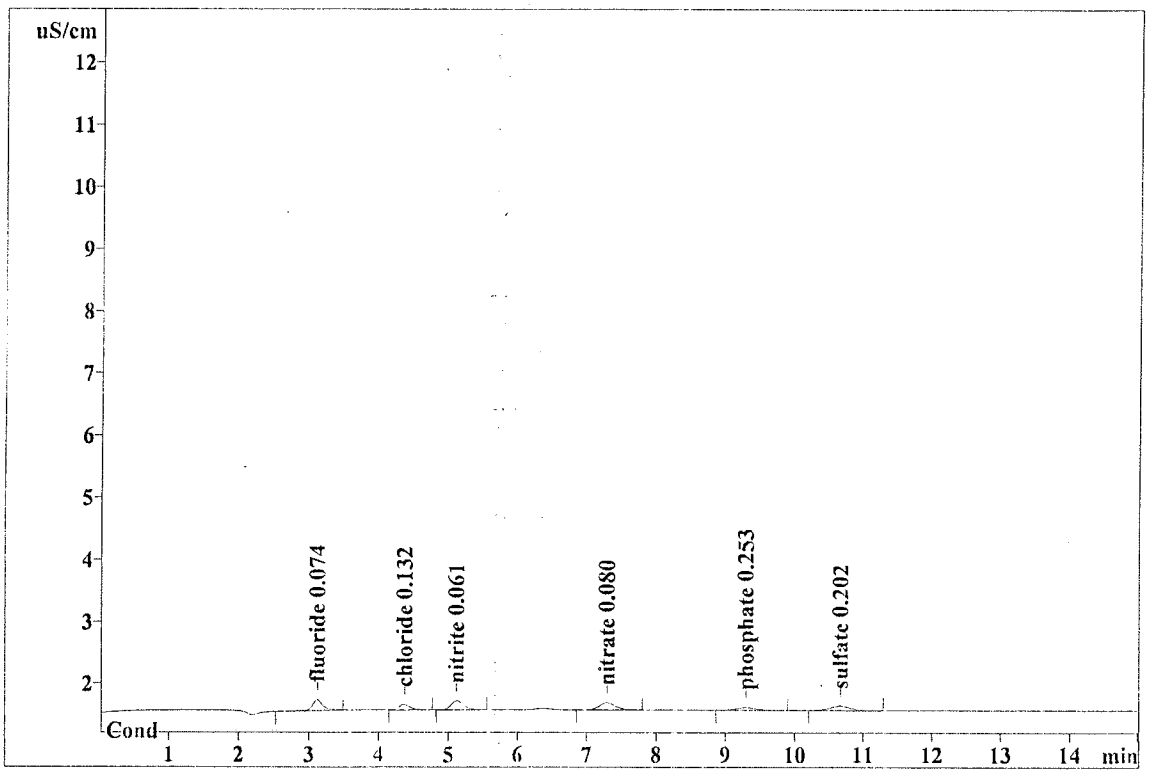
TK 11/22/21

Report date: 11/15/2021 2:51:27 PM
Printed by: VDuran

Ident: AK17-03 S1
Analysis from: 11/15/2021 10:44:39 AM
File: _2021-11-15_10-44.chw Last save: 11/15/2021 2:48:10 PM

Method: ICD0-K15.mtw Last save: 11/15/2021 11:33:47 AM
Run operator: VDuran
Analysis number: 175722

SAMPLE: METHOD 300/9056/4110B
: 0.05 PPM
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	0.17	1.889	0.074	fluoride
2	4.37	0.09	1.011	0.132	chloride
3	5.12	0.15	1.902	0.061	nitrite
4	7.29	0.12	1.906	0.080	nitrate
5	9.29	0.05	0.912	0.253	phosphate
6	10.67	0.07	1.494	0.202	sulfate
6	15.00	0.65	9.115	0.802	

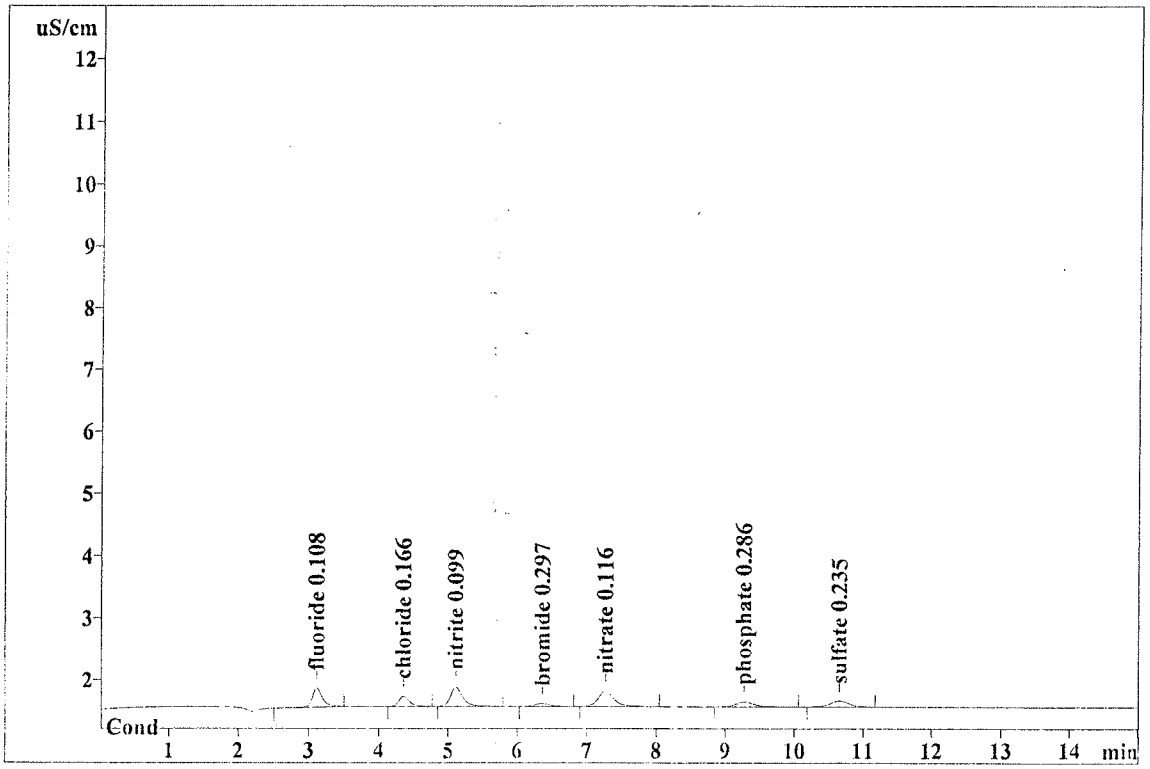
This report has been created by IC Net
METROHM LTD

Report date: 11/15/2021 2:51:30 PM
Printed by: VDuran

Ident: AK17-04 S2
Analysis from: 11/15/2021 11:01:44 AM
File: _2021-11-15_11-01.chw Last save: 11/15/2021 2:48:10 PM

Method: ICD0-K15.mtw Last save: 11/15/2021 11:33:47 AM
Run operator: VDuran
Analysis number: 175723

SAMPLE: METHOD 300/9056/4110B
: 0.1 PPM
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.11	0.31	3.196	0.108	fluoride
2	4.36	0.17	1.832	0.166	chloride
3	5.11	0.32	3.957	0.099	nitrite
4	6.36	0.05	0.790	0.297	bromide
5	7.27	0.25	4.028	0.116	nitrate
6	9.28	0.08	1.656	0.286	phosphate
7	10.66	0.10	2.044	0.235	sulfate
7	15.00	1.29	17.503	1.306	

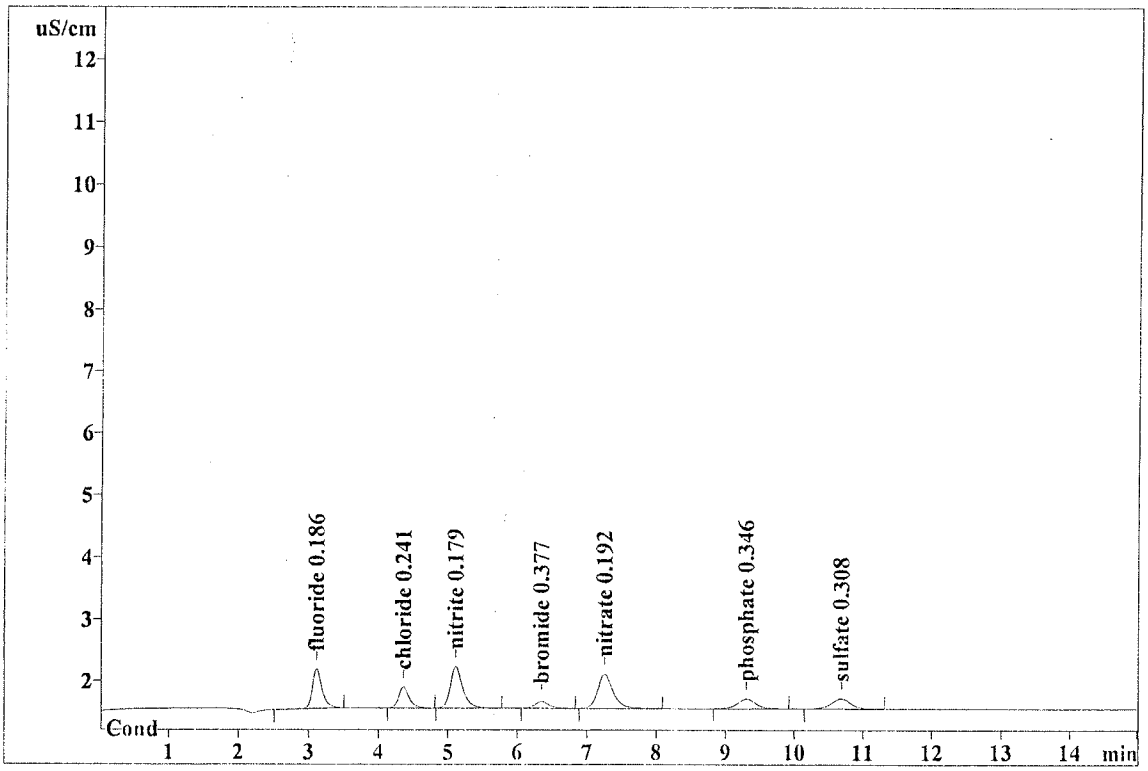
This report has been created by IC Net
METROHM LTD

Report date: 11/15/2021 2:51:33 PM
Printed by: VDuran

Ident: AK17-05 S3
Analysis from: 11/15/2021 11:18:50 AM
File: _2021-11-15_11-18.chw Last save: 11/15/2021 2:48:10 PM

Method: ICD0-K15.mtw Last save: 11/15/2021 11:33:47 AM
Run operator: VDuran
Analysis number: 175724

SAMPLE: METHOD 300/9056/4110B
: 0.2 PPM
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	0.64	6.212	0.186	fluoride
2	4.36	0.34	3.626	0.241	chloride
3	5.11	0.67	8.320	0.179	nitrite
4	6.35	0.11	1.598	0.377	bromide
5	7.25	0.56	8.565	0.192	nitrate
6	9.30	0.16	3.010	0.346	phosphate
7	10.68	0.16	3.271	0.308	sulfate
7	15.00	2.64	34.601	1.830	

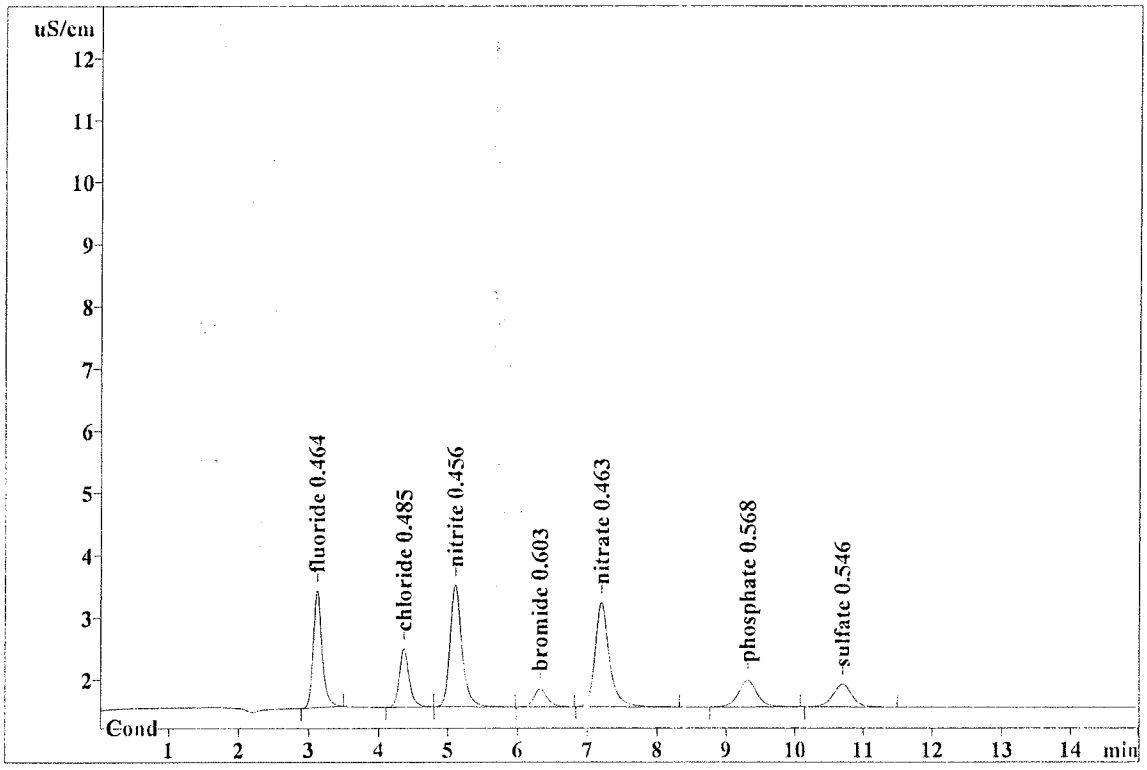
This report has been created by IC Net
METROHM LTD

Report date: 11/15/2021 2:51:35 PM
Printed by: VDuran

Ident: AK17-06 S4
Analysis from: 11/15/2021 11:35:55 AM
File: _2021-11-15_11-35.chw Last save: 11/15/2021 2:48:11 PM

Method: ICD0-K15.mtw Last save: 11/15/2021 11:33:47 AM
Run operator: VDuran
Analysis number: 175725

SAMPLE: METHOD 300/9056/4110B
: 0.5 PPM
Vial number: 6
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	1.88	16.835	0.464	fluoride
2	4.36	0.95	9.491	0.485	chloride
3	5.10	1.96	23.333	0.456	nitrite
4	6.33	0.29	3.874	0.603	bromide
5	7.20	1.68	24.578	0.463	nitrate
6	9.31	0.43	8.032	0.568	phosphate
7	10.69	0.37	7.279	0.546	sulfate
7	15.00	7.57	93.422	3.586	

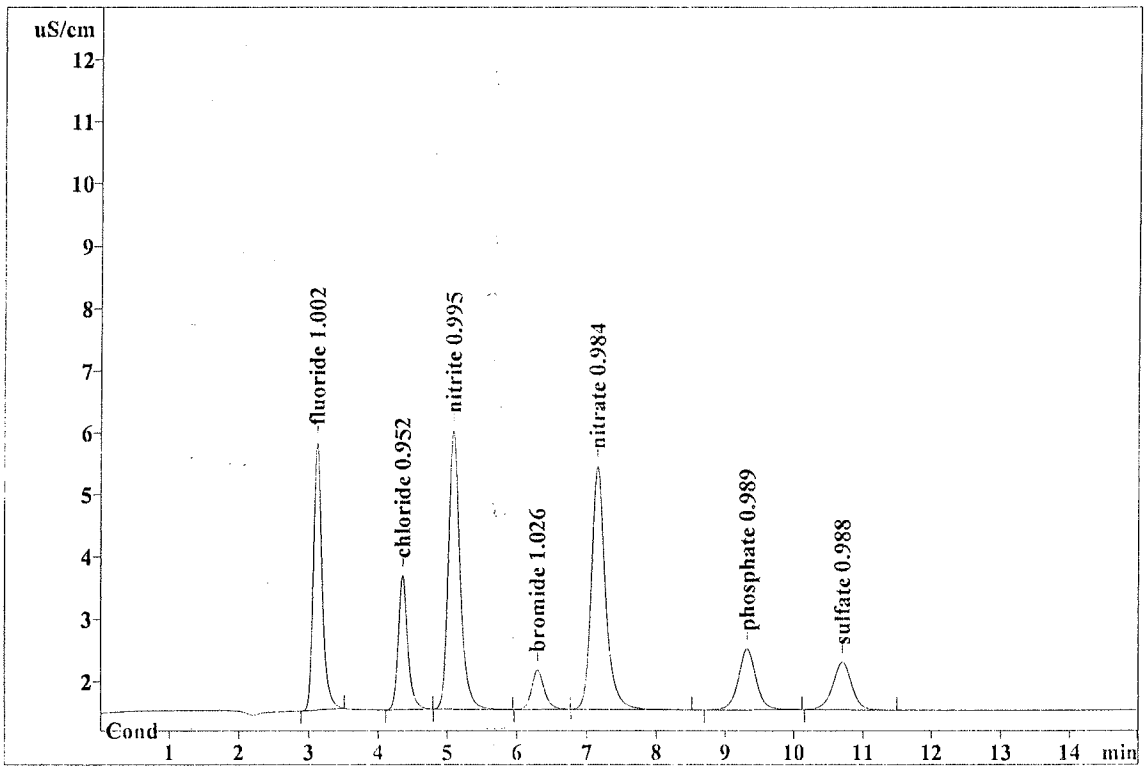
This report has been created by IC Net
METROHM LTD

Report date: 11/15/2021 2:51:38 PM
Printed by: VDuran

Ident: AK17-07 S5
Analysis from: 11/15/2021 11:53:00 AM
File: _2021-11-15_11-53.chw Last save: 11/15/2021 2:48:11 PM

Method: ICD0-K15.mtw Last save: 11/15/2021 11:33:47 AM
Run operator: VDuran
Analysis number: 175726

SAMPLE: METHOD 300/9056/4110B
: 1.0 PPM
Vial number: 7
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	4.29	37.470	1.002	fluoride
2	4.35	2.15	20.708	0.952	chloride
3	5.08	4.48	52.557	0.995	nitrite
4	6.30	0.63	8.138	1.026	bromide
5	7.15	3.90	55.380	0.984	nitrate
6	9.31	0.98	17.548	0.989	phosphate
7	10.70	0.77	14.692	0.988	sulfate
7	15.00	17.20	206.493	6.936	

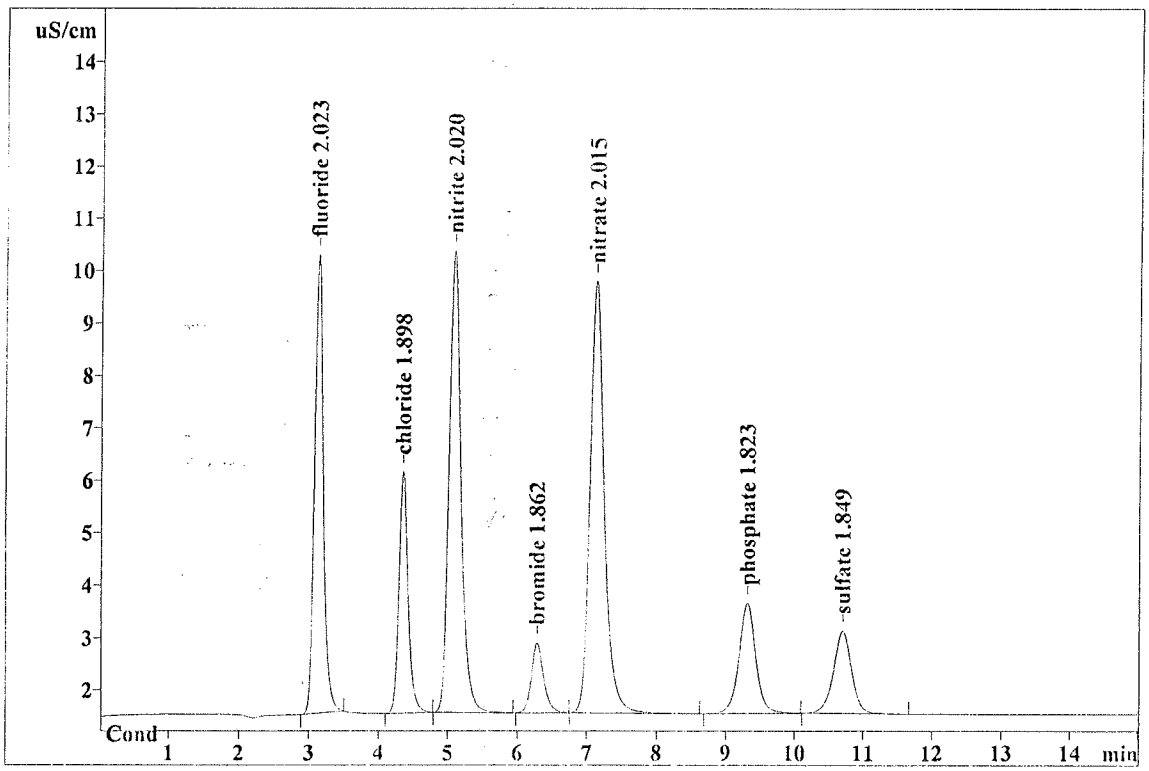
This report has been created by IC Net
METROHM LTD

Report date: 11/15/2021 2:51:46 PM
Printed by: VDuran

Ident: AK17-08 S6
Analysis from: 11/15/2021 12:10:05 PM
File: _2021-11-15_12-10.chw Last save: 11/15/2021 2:48:11 PM

Method: ICD0-K15.mtw Last save: 11/15/2021 11:33:47 AM
Run operator: VDuran
Analysis number: 175727

SAMPLE: METHOD 300/9056/4110B
: 2.0 PPM
Vial number: 8
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000

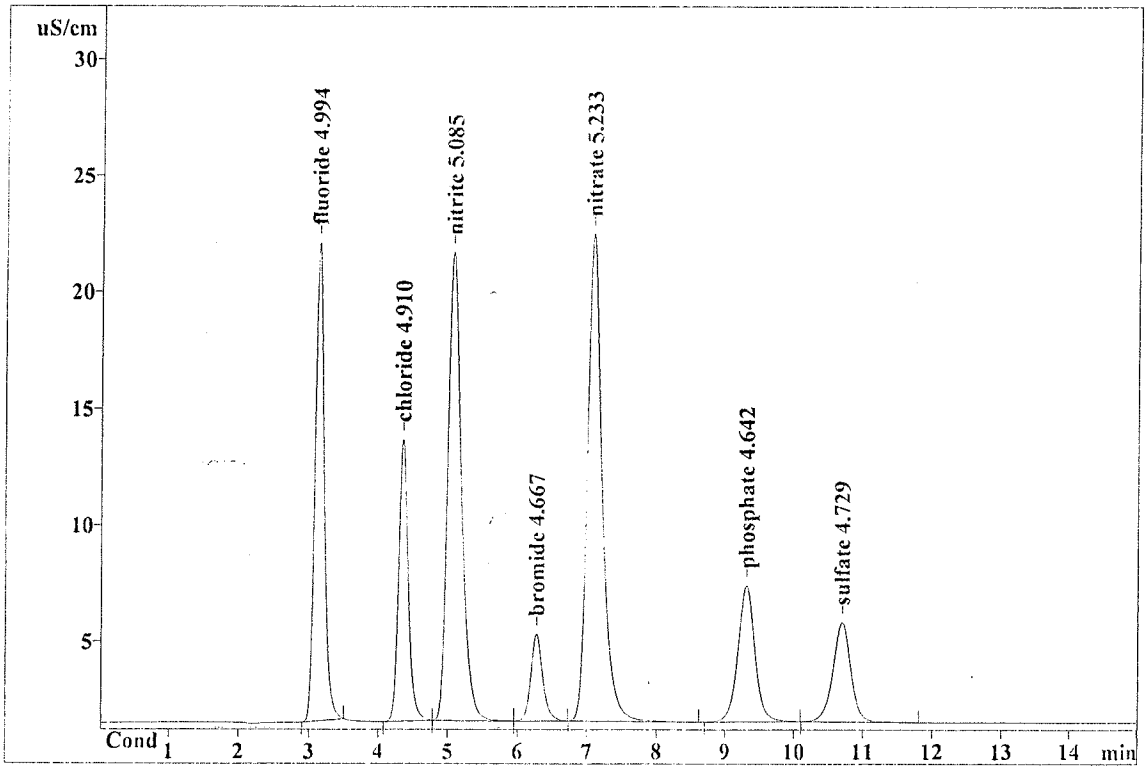


Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	8.75	76.594	2.023	fluoride
2	4.35	4.60	43.417	1.898	chloride
3	5.08	8.81	108.122	2.020	nitrite
4	6.29	1.34	16.556	1.862	bromide
5	7.12	8.24	116.314	2.015	nitrate
6	9.31	2.11	36.421	1.823	phosphate
7	10.70	1.57	29.166	1.849	sulfate
7	15.00	35.43	426.591	13.489	

This report has been created by IC Net
METROHM LTD

Report date:	11/15/2021 2:51:54 PM	
Printed by:	VDuran	
Ident:	AK17-09 S7	
Analysis from:	11/15/2021 12:27:10 PM	
File:	_2021-11-15_12-27.chw	Last save: 11/15/2021 2:48:11 PM
Method:	ICD0-K15.mtw	Last save: 11/15/2021 11:33:47 AM
Run operator:	VDuran	
Analysis number:	175728	
SAMPLE:	METHOD 300/9056/4110B	
:	5.0 PPM	
Vial number:	9	
Volume:	1.0 µL	
Dilution:	1.00	
Amount:	1.0000	



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.13	20.51	190.452	4.994	fluoride
2	4.35	12.11	115.774	4.910	chloride
3	5.06	20.08	274.245	5.085	nitrite
4	6.27	3.72	44.821	4.667	bromide
5	7.08	20.88	306.607	5.233	nitrate
6	9.30	5.82	100.191	4.642	phosphate
7	10.70	4.25	77.541	4.729	sulfate
7	15.00	87.37	1109.631	34.259	

This report has been created by IC Net
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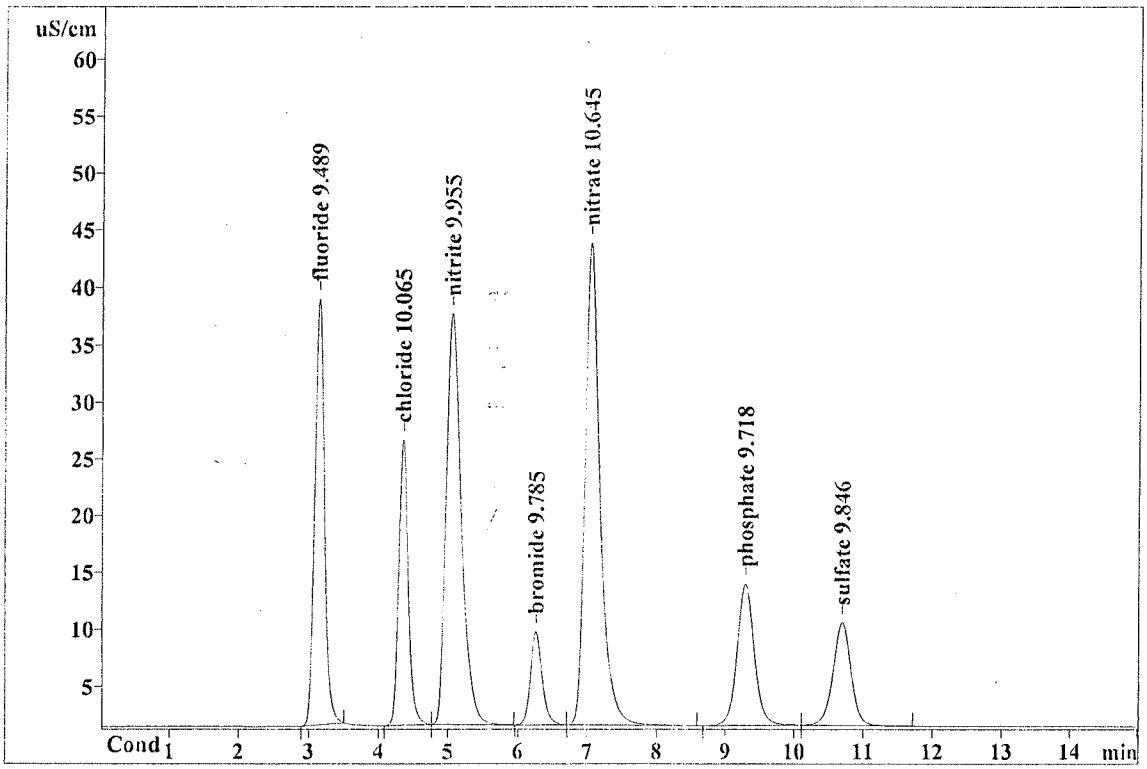
Report date: 11/15/2021 2:52:08 PM
Printed by: VDuran

Ident: AK17-10 S8
Analysis from: 11/15/2021 12:44:14 PM
File: _2021-11-15_12-44.chw Last save: 11/15/2021 2:48:11 PM

Method: ICD0-K15.mtw Last save: 11/15/2021 11:33:47 AM
Run operator: VDuran
Analysis number: 175729

SAMPLE: METHOD 300/9056/4110B
: 10.0 PPM
Vial number: 10
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.15	37.35	362.750	9.489	fluoride
2	4.34	25.06	239.623	10.065	chloride
3	5.05	36.03	538.278	9.955	nitrite
4	6.26	8.14	96.393	9.785	bromide
5	7.04	42.21	626.552	10.645	nitrate
6	9.29	12.36	215.019	9.718	phosphate
7	10.69	8.99	163.514	9.846	sulfate
7	15.00	170.14	2242.128	69.504	

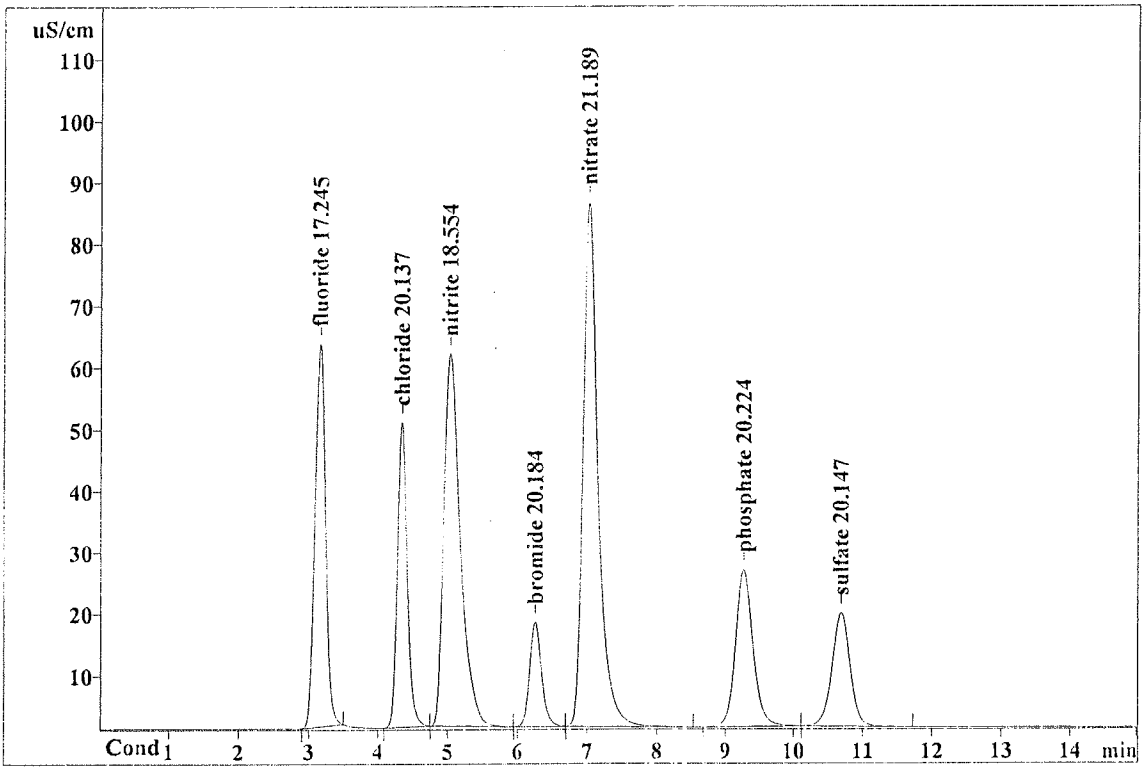
This report has been created by IC Net
METROHM LTD

Report date: 11/15/2021 2:52:23 PM
Printed by: VDuran

Ident: AK17-11 S9
Analysis from: 11/15/2021 1:01:19 PM
File: _2021-11-15_13-01.chw Last save: 11/15/2021 2:48:11 PM

Method: ICD0-K15.mtw Last save: 11/15/2021 11:33:47 AM
Run operator: VDuran
Analysis number: 175730

SAMPLE: METHOD 300/9056/4110B
: 20.0 PPM
Vial number: 11
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.17	62.06	660.004	17.245	fluoride
2	4.34	49.43	481.554	20.137	chloride
3	5.03	60.40	1004.415	18.554	nitrite
4	6.26	16.84	201.178	20.184	bromide
5	7.02	84.90	1249.971	21.189	nitrate
6	9.27	25.34	452.678	20.224	phosphate
7	10.69	18.33	336.578	20.147	sulfate
7	15.00	317.30	4386.379	137.681	

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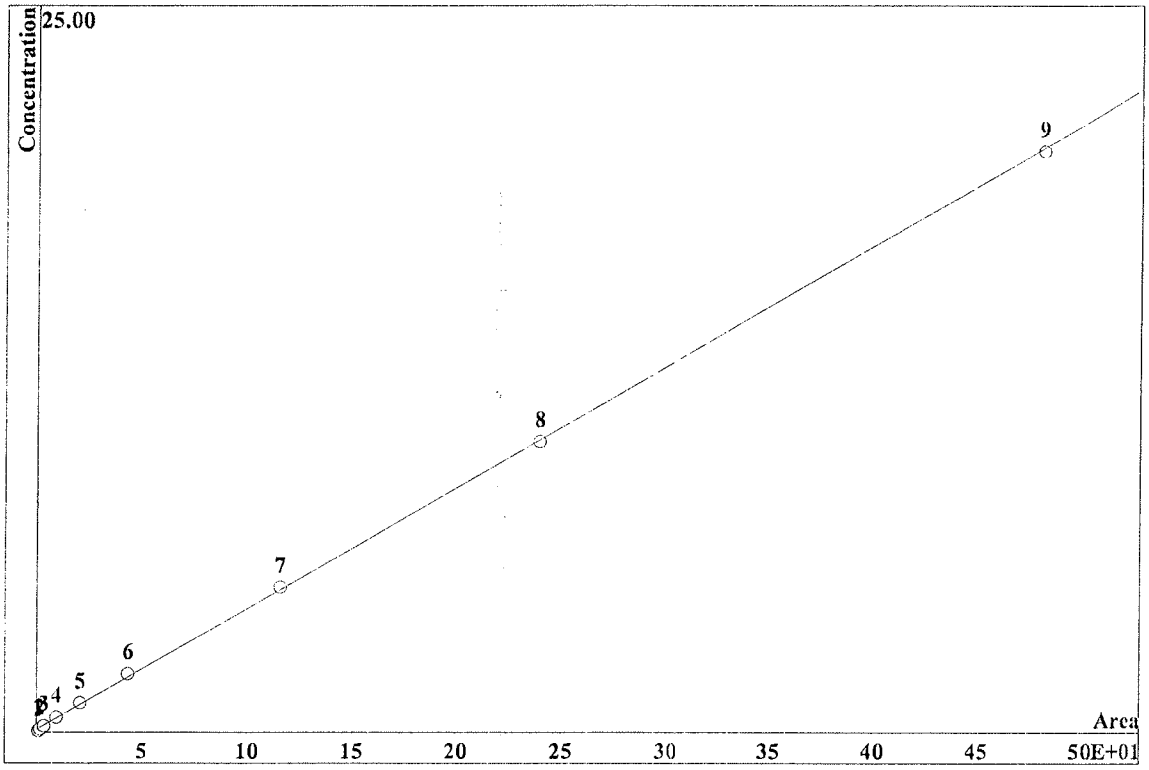
CALIBRATION OF COMPONENT chloride

Method: ICD0-K15.mtw
Equation: Q = 0.041629·A + 0.0901659
RSD: 3.390 %
Correlation coefficient: 0.999777

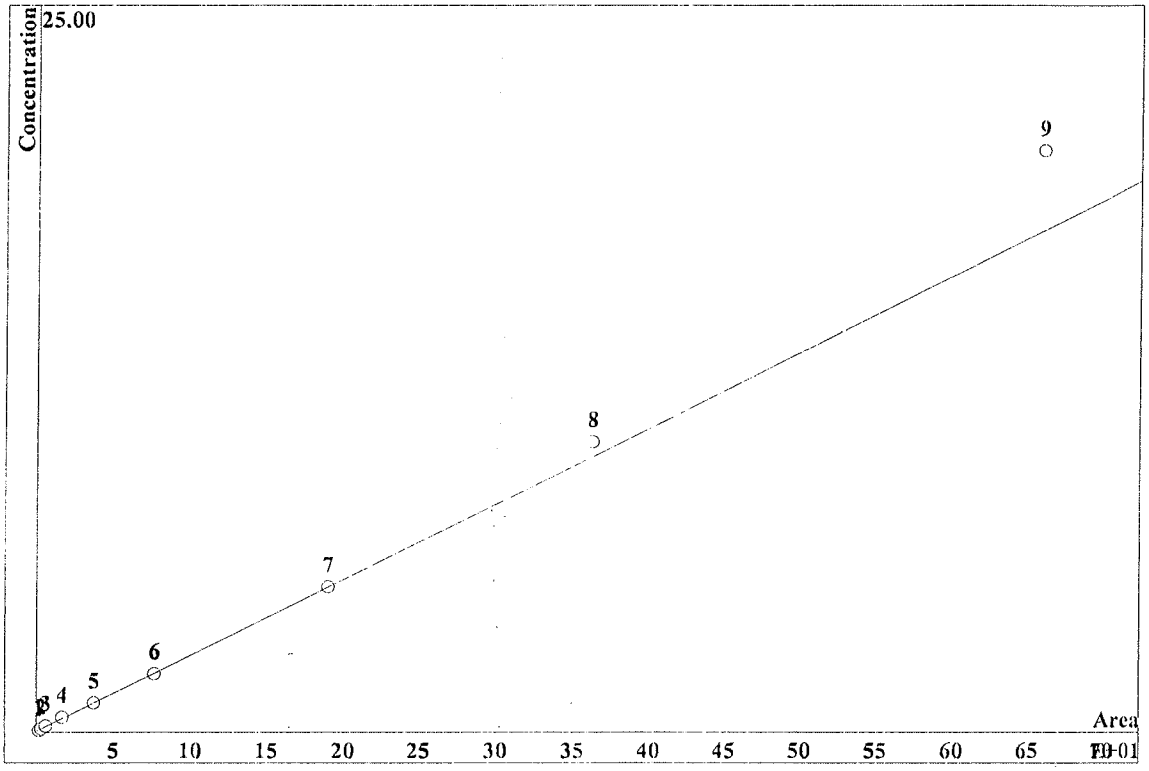


K3 = 0 K2 = 0 K1 = 0.041629 K0 = 0.0901659
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.09203	1.011	0.05	1	4.35	Yes	_2021-11-15_1
2	0.171	1.832	0.1	1	4.35	Yes	_2021-11-15_1
3	0.3434	3.626	0.2	1	4.35	Yes	_2021-11-15_1
4	0.9479	9.491	0.5	1	4.35	Yes	_2021-11-15_1
5	2.147	20.71	1	1	4.35	Yes	_2021-11-15_1
6	4.605	43.42	2	1	4.35	Yes	_2021-11-15_1
7	12.11	115.8	5	1	4.35	Yes	_2021-11-15_1
8	25.06	239.6	10	1	4.35	Yes	_2021-11-15_1
9	49.44	481.6	20	1	4.35	No	_2021-11-15_1

CALIBRATION OF COMPONENT fluoride

Method: ICD0-K15.mtw
Equation: Q = 0.0260925·A + 0.0243411
RSD: 1.836 %
Correlation coefficient: 0.999930

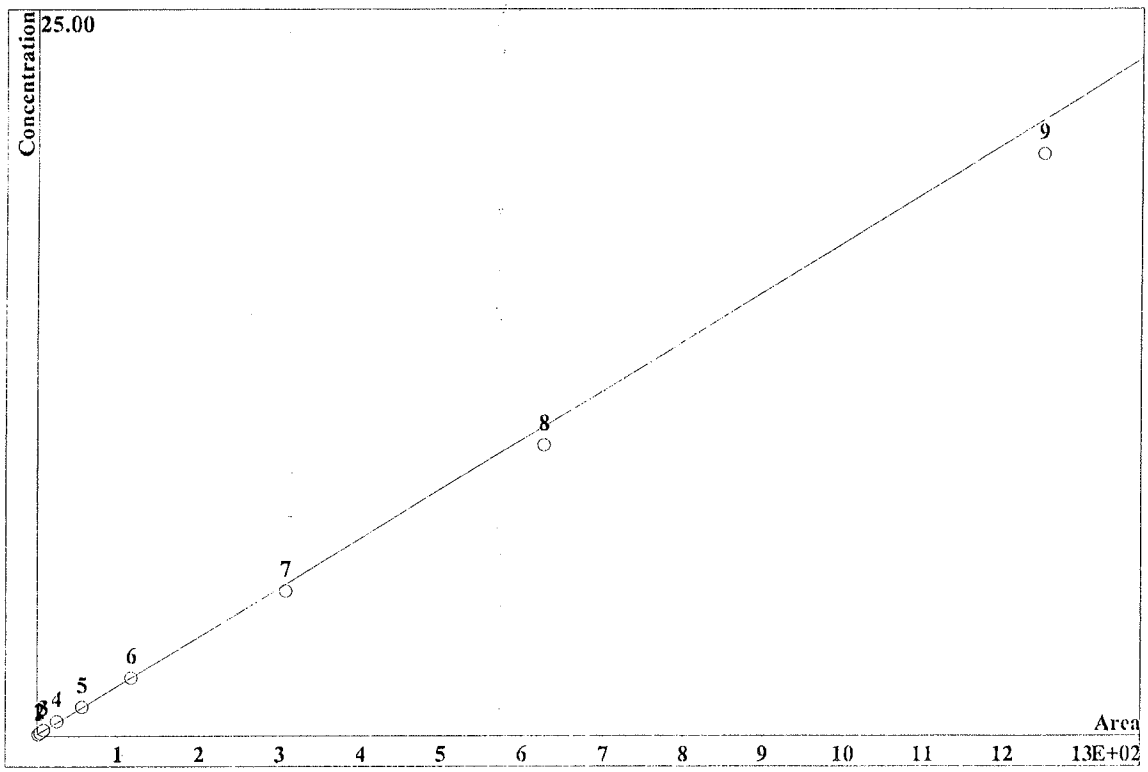


K3 = 0 K2 = 0 K1 = 0.0260925 K0 = 0.0243411
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.1731	1.889	0.05	1	3.13	Yes	_2021-11-15_1
2	0.3135	3.196	0.1	1	3.13	Yes	_2021-11-15_1
3	0.6435	6.212	0.2	1	3.13	Yes	_2021-11-15_1
4	1.885	16.84	0.5	1	3.13	Yes	_2021-11-15_1
5	4.295	37.47	1	1	3.13	Yes	_2021-11-15_1
6	8.747	76.59	2	1	3.13	Yes	_2021-11-15_1
7	20.51	190.5	5	1	3.13	Yes	_2021-11-15_1
8	37.35	362.8	10	1	3.13	No	_2021-11-15_1
9	62.06	660	20	1	3.13	No	_2021-11-15_1

CALIBRATION OF COMPONENT nitrate

Method: ICD0-K15.mtw
Equation: Q = 0.0169138·A + 0.0475082
RSD: 4.275 %
Correlation coefficient: 0.999468

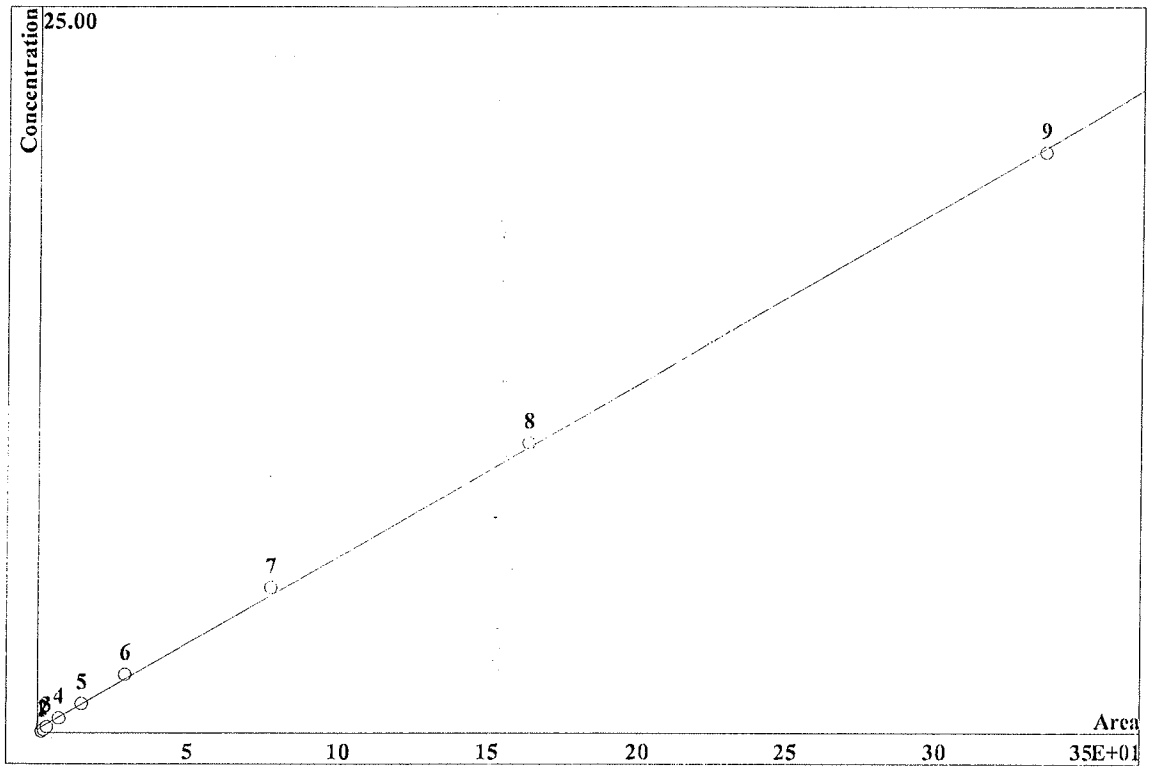


K3 = 0 K2 = 0 K1 = 0.0169138 K0 = 0.0475082
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.12	1.906	0.05	1	7.16	Yes	_2021-11-15_1
2	0.2527	4.028	0.1	1	7.16	Yes	_2021-11-15_1
3	0.5558	8.565	0.2	1	7.16	Yes	_2021-11-15_1
4	1.685	24.58	0.5	1	7.16	Yes	_2021-11-15_1
5	3.903	55.38	1	1	7.16	Yes	_2021-11-15_1
6	8.241	116.3	2	1	7.16	Yes	_2021-11-15_1
7	20.88	306.6	5	1	7.16	No	_2021-11-15_1
8	42.21	626.6	10	1	7.16	No	_2021-11-15_1
9	84.9	1250	20	1	7.16	No	_2021-11-15_1

CALIBRATION OF COMPONENT sulfate

Method: ICD0-K15.mtw
Equation: Q = 0.0595233·A + 0.113141
RSD: 3.887 %
Correlation coefficient: 0.999728



K3 = 0 K2 = 0 K1 = 0.0595233 K0 = 0.113141
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.07307	1.494	0.05	1	10.69	Yes	_2021-11-15_1
2	0.1022	2.044	0.1	1	10.69	Yes	_2021-11-15_1
3	0.1637	3.271	0.2	1	10.69	Yes	_2021-11-15_1
4	0.3713	7.279	0.5	1	10.69	Yes	_2021-11-15_1
5	0.7679	14.69	1	1	10.69	Yes	_2021-11-15_1
6	1.575	29.17	2	1	10.69	Yes	_2021-11-15_1
7	4.247	77.54	5	1	10.69	Yes	_2021-11-15_1
8	8.993	163.5	10	1	10.69	Yes	_2021-11-15_1
9	18.33	336.6	20	1	10.69	Yes	_2021-11-15_1

SECOND SOURCE VERIFICATION

IC Result Check FormVersion : K15/AK17(2021)

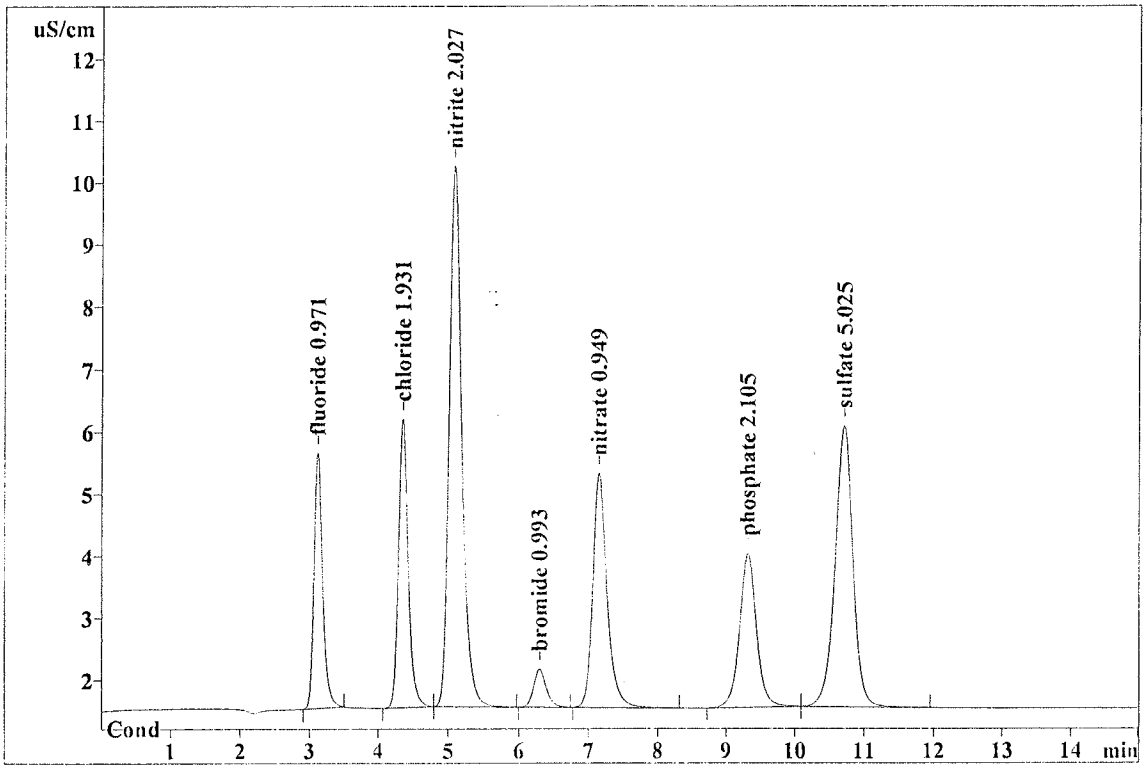
LFID	LSID	Selection	phosphate	nitrite	nitrate	iodide	fluoride	chloride	bromide	sulfate	RawNetID	DF
AK17-01	IB	PINOFCBS	0	0	0	0	0	0	0	0	_2021-11-15_10-10	1
AK17-12	ICV	PINOFCBS	105.2%	101.3%	94.9%	0%*	97.1%	96.5%	99.3%	100.5%	_2021-11-15_13-18	1
AK17-13	ICV1	PINOFCBS	106.4%	99%	96%	0%*	99.1%	96.2%	101%	99.2%	_2021-11-15_13-35	1
AK17-14	ICB	PINOFCBS	0	0	0	0	0	0	0	0	_2021-11-15_13-52	1

Report date: 11/15/2021 2:52:28 PM
Printed by: VDuran

Ident: AK17-12 ICV
Analysis from: 11/15/2021 1:18:24 PM
File: _2021-11-15_13-18.chw Last save: 11/15/2021 2:48:11 PM

Method: ICD0-K15.mtw Last save: 11/15/2021 11:33:47 AM
Run operator: VDuran
Analysis number: 175731

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 12
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	4.12	36.285	0.971	fluoride
2	4.35	4.65	44.214	1.931	chloride
3	5.08	8.70	108.490	2.027	nitrite
4	6.30	0.61	7.808	0.993	bromide
5	7.15	3.78	53.309	0.949	nitrate
6	9.32	2.48	42.797	2.105	phosphate
7	10.71	4.53	82.516	5.025	sulfate
7	15.00	28.88	375.419	14.001	

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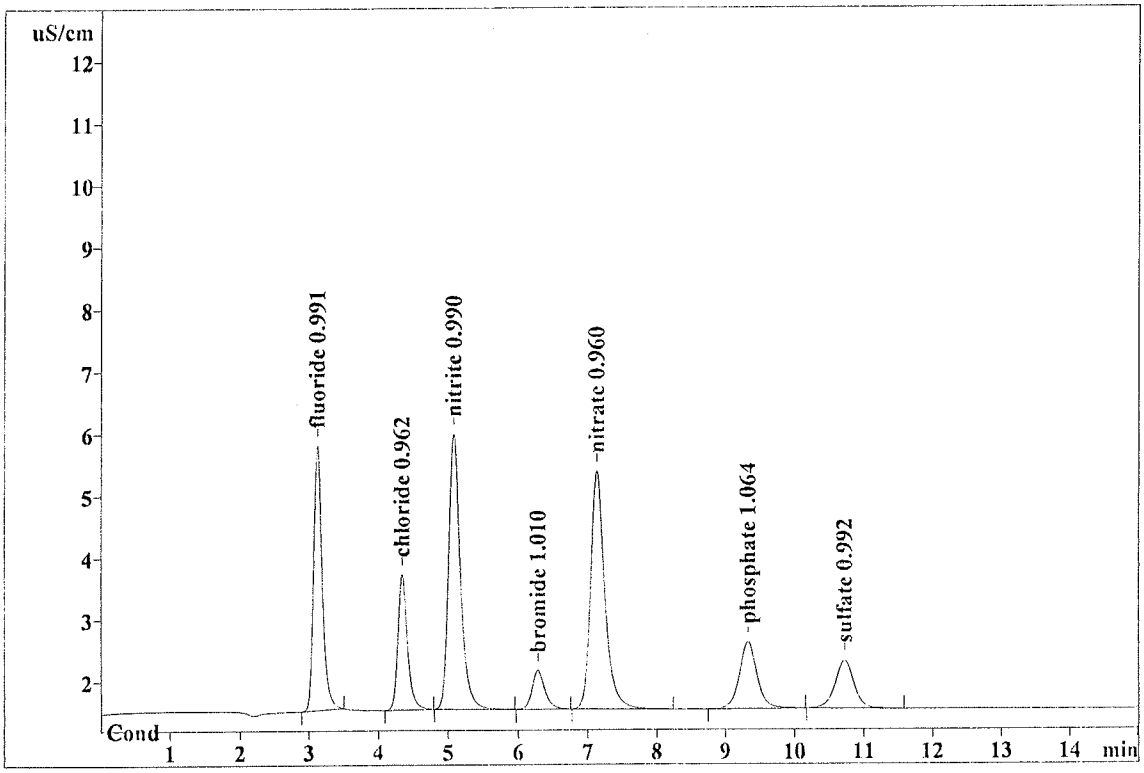
Report date: 11/15/2021 2:52:32 PM
Printed by: VDuran

Ident: AK17-13 ICV1
Analysis from: 11/15/2021 1:35:29 PM
File: _2021-11-15_13-35.chw Last save: 11/15/2021 2:48:11 PM

Method: ICD0-K15.mtw Last save: 11/15/2021 11:33:47 AM
Run operator: VDuran
Analysis number: 175732

SAMPLE: METHOD 300/9056/4110B
: 1.0 PPM
Vial number: 13
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	4.28	37.056	0.991	fluoride
2	4.35	2.19	20.945	0.962	chloride
3	5.08	4.44	52.258	0.990	nitrite
4	6.28	0.63	7.978	1.010	bromide
5	7.13	3.85	53.971	0.960	nitrate
6	9.33	1.08	19.262	1.064	phosphate
7	10.72	0.77	14.768	0.992	sulfate
7	15.00	17.24	206.237	6.970	

This report has been created by IC Net
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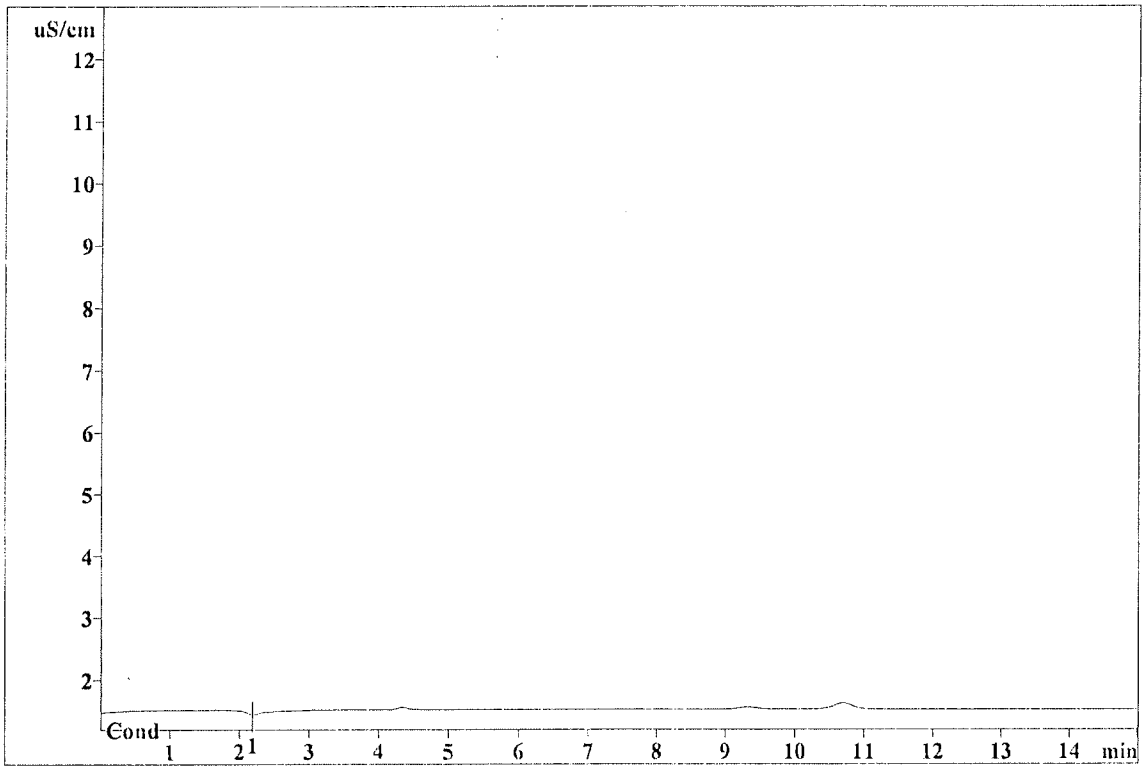
Report date: 11/15/2021 2:52:40 PM
Printed by: VDuran

Ident: AK17-14 ICB
Analysis from: 11/15/2021 1:52:34 PM
File: _2021-11-15_13-52.chw Last save: 11/15/2021 2:48:12 PM
Modified!
Method: ICD0-K15.mtw Last save: 11/15/2021 11:33:47 AM
Run operator: VDuran
Analysis number: 175733

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 14
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.18	-0.00	-0.000	0.000	

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DAILY CALIBRATION(S)

Continuing Calibration Summary Form

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG : 21K137
Method : E300.0
ICAL Ref. : 21AK17
InstrumentID: DO
Parameter : CHLORIDE

LFID	LSID	Recovery (%)	AnalysisDateTime
AK19-01	CCV1	94.4	11/16/2109:53
AK19-13	CCV3	101.1	11/16/2113:19
AK19-25	CCV5	99.6	11/16/2116:44

CCV Acceptance Criteria: 90-110%

Continuing Calibration Summary Form

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG : 21K137
Method : E300.0
ICAL Ref. : 21AK17
InstrumentID: D0
Parameter : FLUORIDE

LFID	LSID	Recovery (%)	AnalysisDateTime
AK19-01	CCV1	92.4	11/16/2109:53
AK19-13	CCV3	95.9	11/16/2113:19
AK19-25	CCV5	94.1	11/16/2116:44

CCV Acceptance Criteria: 90-110%

Continuing Calibration Summary Form

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG : 21K137
Method : E300.0
ICAL Ref. : 21AK17
InstrumentID: DO
Parameter : NITRATE

LFID	LSID	Recovery (%)	AnalysisDateTime
AK19-01	CCV1	94	11/16/2109:53
AK19-13	CCV3	95.7	11/16/2113:19
AK19-25	CCV5	93.9	11/16/2116:44

CCV Acceptance Criteria: 90-110%

Continuing Calibration Summary Form

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG : 21K137
Method : E300.0
ICAL Ref. : 21AK17
InstrumentID: DO
Parameter : SULFATE

LFID	LSID	Recovery (%)	AnalysisDateTime
AK19-01	CCV1	101.1	11/16/2109:53
AK19-13	CCV3	107.3	11/16/2113:19
AK19-25	CCV5	105.3	11/16/2116:44
AK19-37	CCV7	105.8	11/16/2120:09

CCV Acceptance Criteria: 90-110%

AK19-59	ICK019WL	BPNOFCIS	0.979518	1.66871	0.932535	0	0.950372	1.9011	1.9369	4.9704	_2021-11-17_02-25	1
AK19-60	ICK019WC	BPNOFCIS	0.965774	1.73135	0.924585	0	0.928	1.86805	1.92058	4.94703	_2021-11-17_02-42	1
AK19-61	J227-19K	BPNOF*IS	47.3827	0	0	0	0	12072.8E	0	1677.52	_2021-11-17_02-59	100
AK19-62	J227-19T	BPNOFCIS	0	0	0	0	0	12906.8	0	2984.16	_2021-11-17_03-16	2000
AK19-63	J227-20K	BPNOFCIS	0	0	61.7875	0	0	3712.6	0	1327.94	_2021-11-17_03-33	1000
AK19-64	K022-01K	BPNOF*IS	0	0	0	0	0	1013.92E	0	915.768	_2021-11-17_03-50	100
AK19-65	K022-01KD	BPNOFCIS	0	0	0	0	0	995.444	0	921.166	_2021-11-17_04-07	100
AK19-66	K022-01KM	BPNOF*IS	101.233	147.92	95.9443	0	96.5684	1186.94E	180.884	1424.1	_2021-11-17_04-24	100
AK19-67	K022-01KS	BPNOF*IS	100.55	162.725	95.6372	0	96.3156	1201.97E	178.732	1460.95	_2021-11-17_04-41	100
AK19-68	CCV13	BPNOFCIS	98.7%	90.9%	92.7%	0%*	94.2%	118.6%*	98.2%	122.6%*	_2021-11-17_04-59	1
AK19-69	CCB13	BPNOFCIS	0	0	0	0	0	0	0	0	_2021-11-17_05-16	1

IC Result Check FormVersion : K15/AK17(2021)

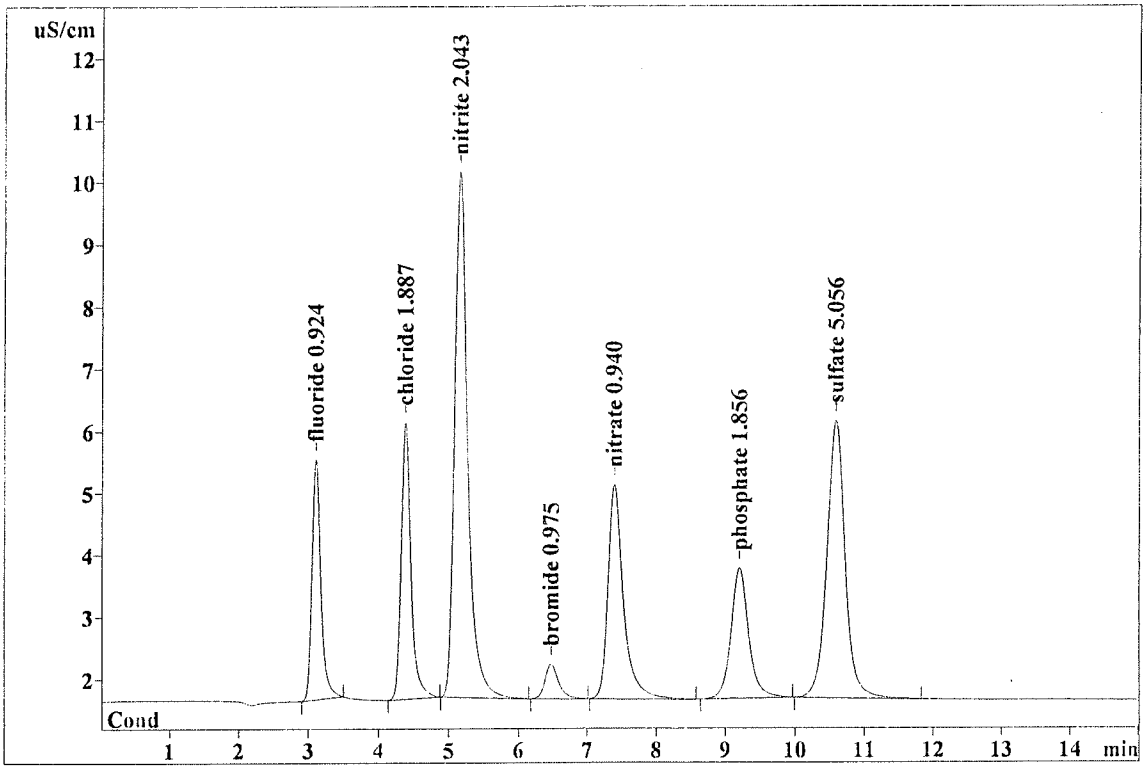
LFID	LSID	Selection	bromide	chloride	fluoride	iodide	sulfate	phosphate	nitrite	nitrate	RawNetID	DF
AK19-01	CCV1	BCFOSPIN	97.5%	94.4%	92.4%	0%*	101.1%	92.8%	102.1%	94%	_2021-11-16_09-53	1
AK19-02	CCB1	BCFOSPIN	0	0	0	0	0	0	0	0	_2021-11-16_10-11	1
AK19-13	CCV3	BCFOSPIN	99.8%	101.1%	95.9%	0%*	107.3%	93.4%	103%	95.7%	_2021-11-16_13-19	1
AK19-14	CCB3	BCFOSPIN	0	0	0	0	0	0	0	0	_2021-11-16_13-36	1
AK19-25	CCV5	BCFOSPIN	98.9%	99.6%	94.1%	0%*	105.3%	87.1%*	100.9%	93.9%	_2021-11-16_16-44	1
AK19-26	CCB5	BCFOSPIN	0	0	0	0	0	0	0	0	_2021-11-16_17-01	1
AK19-37	CCV7	BCFOSPIN	98.7%	99.3%	94.5%	0%*	105.8%	87.3%*	102.4%	96.3%	_2021-11-16_20-09	1
AK19-38	CCB7	BCFOSPIN	0	0	0	0	0	0	0	0	_2021-11-16_20-26	1
AK19-49	CCV9	BCFOSPIN	100%	97.4%	95.9%	0%*	103.4%	88.7%*	100.5%	95.2%	_2021-11-16_23-34	1
AK19-50	CCB9	BCFOSPIN	0	0	0	0	0	0	0	0	_2021-11-16_23-51	1
AK19-56	CCV11	BCFOSPIN	99.3%	96.5%	94.9%	0%*	101.1%	82.7%*	98.5%	94.3%	_2021-11-17_01-34	1
AK19-57	CCB11	BCFOSPIN	0	0	0	0	0	0	0	0	_2021-11-17_01-51	1
AK19-68	CCV13	BCFOSPIN	98.7%	118.6%*	94.2%	0%*	122.6%*	90.9%	98.2%	92.7%	_2021-11-17_04-59	1
AK19-69	CCB13	BCFOSPIN	0	0	0	0	0	0	0	0	_2021-11-17_05-16	1

Report date: 11/17/2021 9:37:11 AM
Printed by: VDuran

Ident: AK19-01 CCV1
Analysis from: 11/16/2021 9:53:53 AM
File: _2021-11-16_09-53.chw Last save: 11/16/2021 10:08:50 AM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175737

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 1
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.11	3.88	34.497	0.924	fluoride
2	4.38	4.46	43.171	1.887	chloride
3	5.15	8.46	109.337	2.043	nitrite
4	6.48	0.56	7.621	0.975	bromide
5	7.39	3.46	52.786	0.940	nitrate
6	9.20	2.09	37.161	1.856	phosphate
7	10.58	4.48	83.044	5.056	sulfate
7	15.00	27.38	367.616	13.681	

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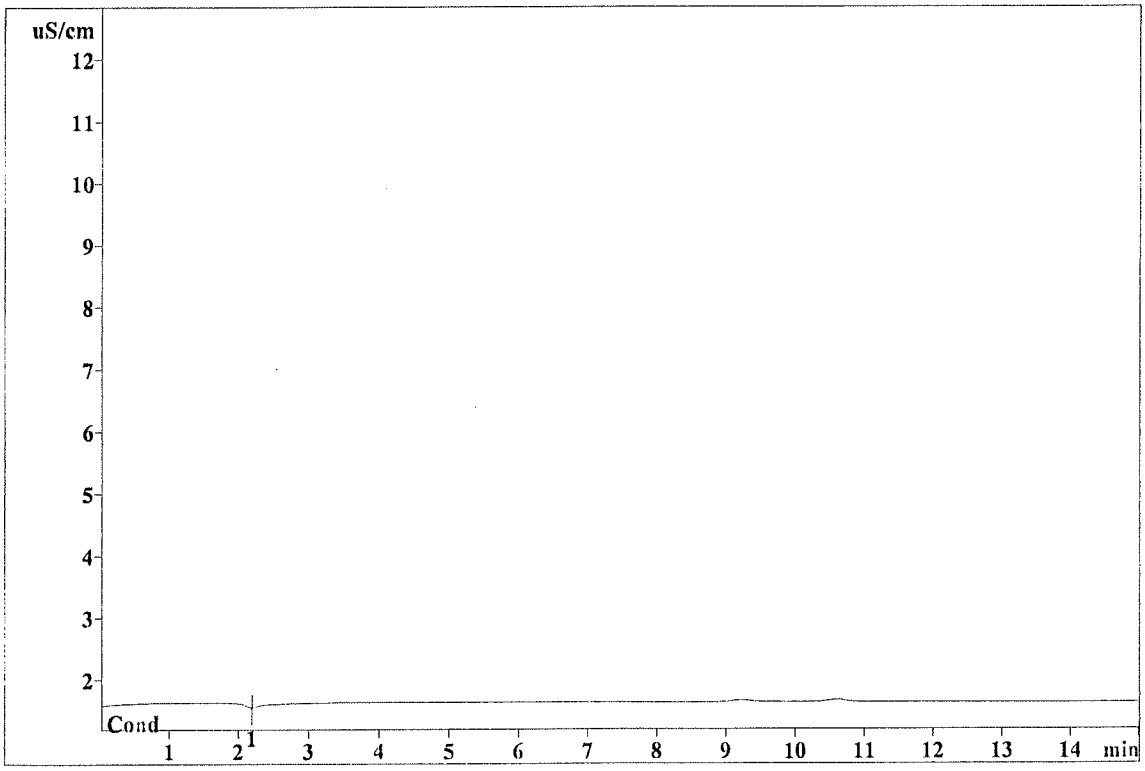
Report date: 11/17/2021 9:37:14 AM
Printed by: VDuran

Ident: AK19-02 CCB1
Analysis from: 11/16/2021 10:11:05 AM
File: _2021-11-16_10-11.chw Last save: 11/16/2021 11:11:07 AM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175738

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.19	-0.00	-0.000	0.000	

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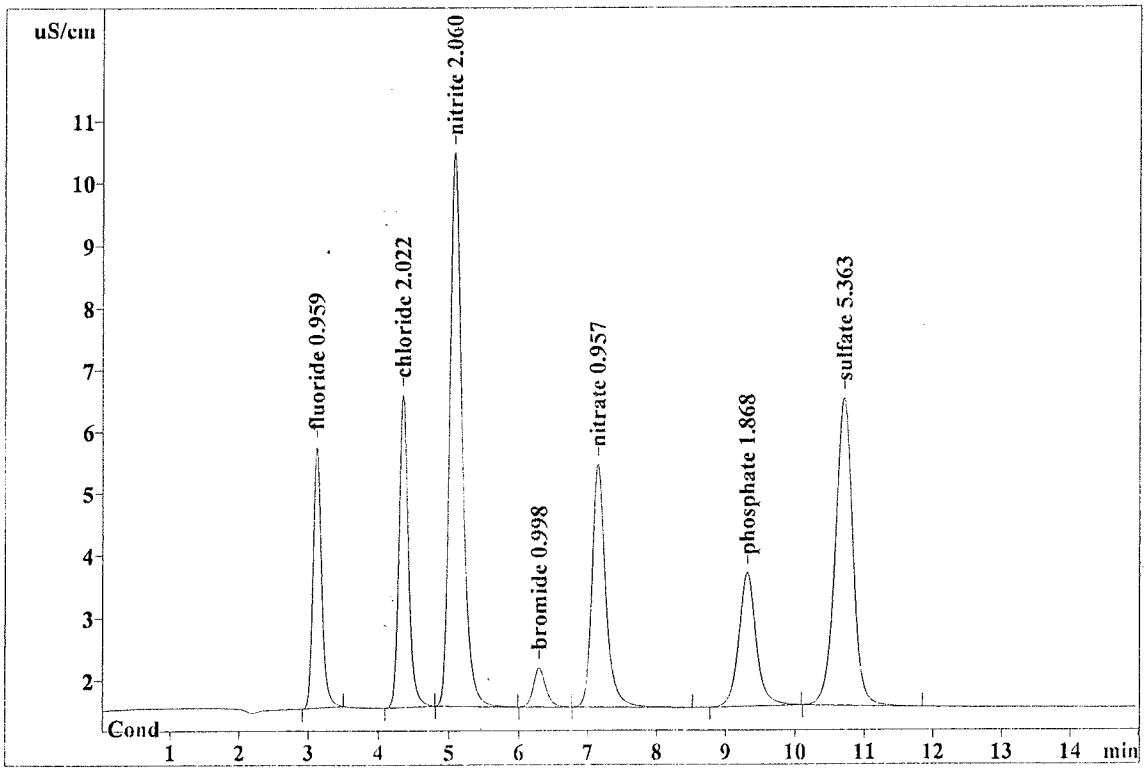
Report date: 11/17/2021 9:37:27 AM
Printed by: VDuran

Ident: AK19-13 CCV3
Analysis from: 11/16/2021 1:19:01 PM
File: _2021-11-16_13-19.chw Last save: 11/16/2021 1:33:58 PM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175749

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 13
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	4.19	35.821	0.959	fluoride
2	4.35	5.03	46.398	2.022	chloride
3	5.08	8.91	110.273	2.060	nitrite
4	6.29	0.63	7.850	0.998	bromide
5	7.15	3.90	53.744	0.957	nitrate
6	9.30	2.14	37.440	1.868	phosphate
7	10.70	4.95	88.196	5.363	sulfate
7	15.00	29.73	379.723	14.226	

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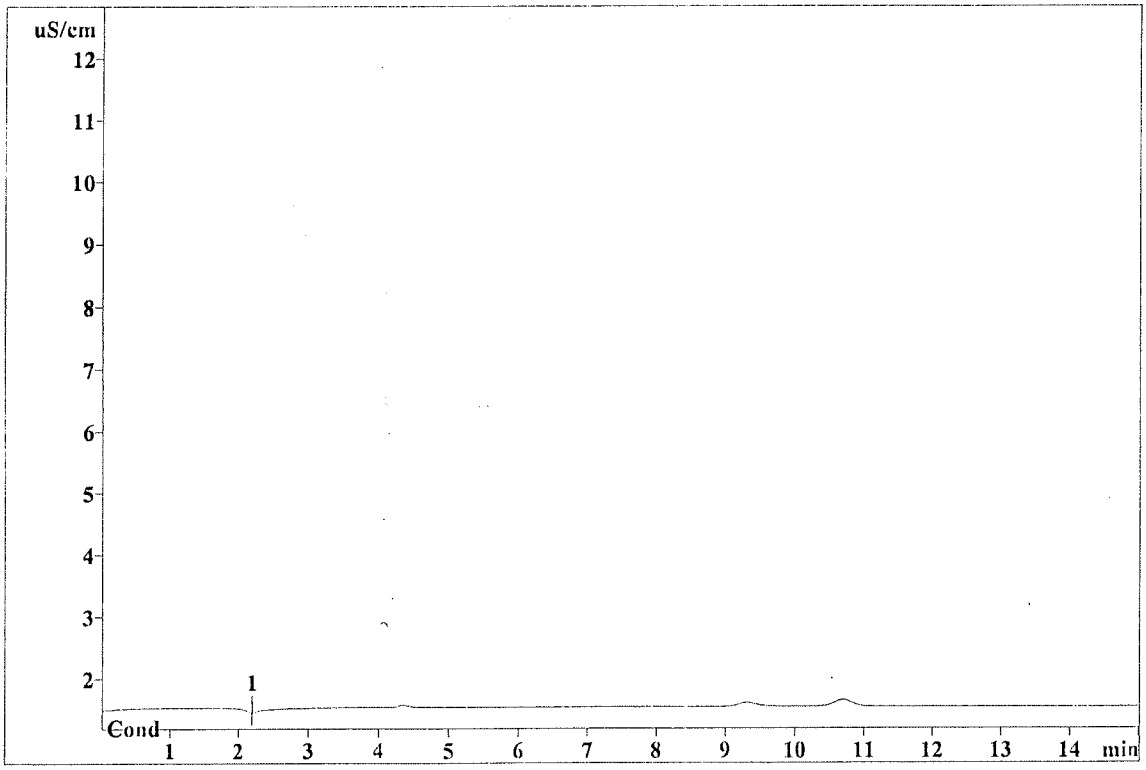
Report date: 11/17/2021 9:37:30 AM
Printed by: VDuran

Ident: AK19-14 CCB3
Analysis from: 11/16/2021 1:36:06 PM
File: _2021-11-16_13-36.chw Last save: 11/16/2021 2:13:25 PM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175750

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 14
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.19	-0.00	-0.000	0.000	

This report has been created by IC Net
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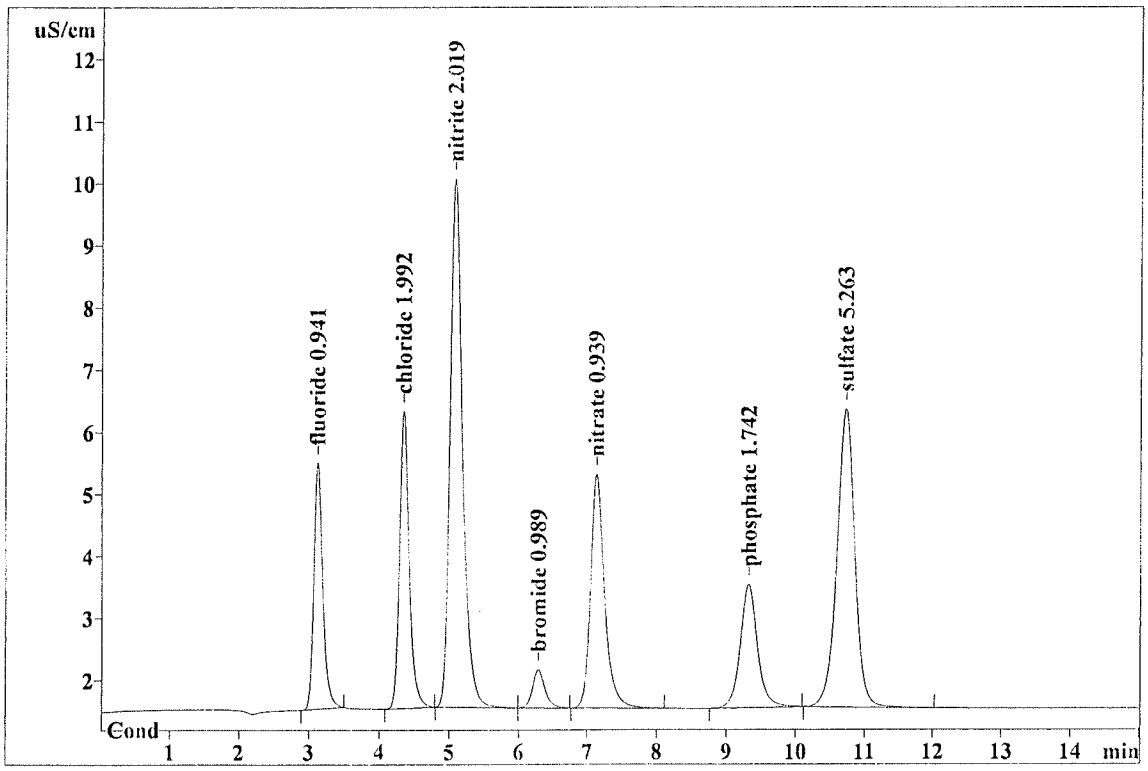
Report date: 11/17/2021 9:38:01 AM
Printed by: VDuran

Ident: AK19-25 CCV5
Analysis from: 11/16/2021 4:44:00 PM
File: _2021-11-16_16-44.chw Last save: 11/16/2021 4:58:57 PM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175761

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 25
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.13	3.97	35.135	0.941	fluoride
2	4.35	4.79	45.692	1.992	chloride
3	5.08	8.51	108.035	2.019	nitrite
4	6.29	0.61	7.758	0.989	bromide
5	7.13	3.77	52.723	0.939	nitrate
6	9.32	1.98	34.589	1.742	phosphate
7	10.72	4.80	86.523	5.263	sulfate
7	15.00	28.42	370.456	13.885	

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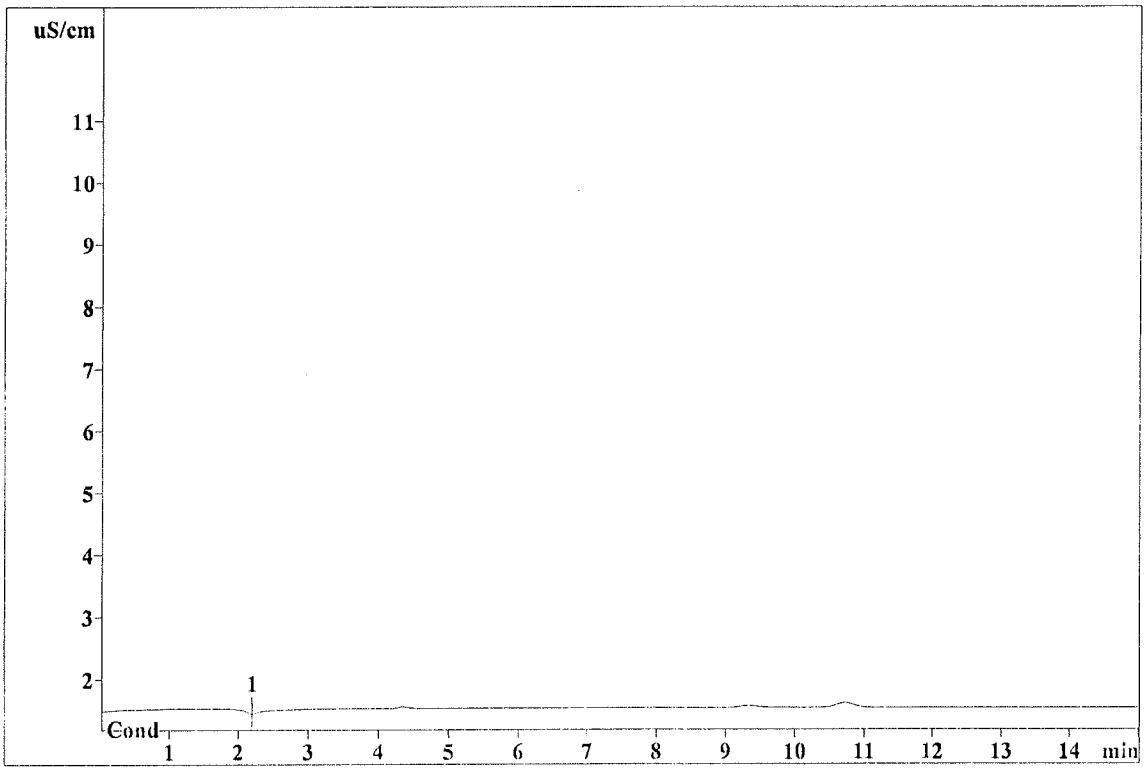
Report date: 11/17/2021 9:38:11 AM
Printed by: VDuran

Ident: AK19-26 CCB5
Analysis from: 11/16/2021 5:01:06 PM
File: _2021-11-16_17-01.chw Last save: 11/16/2021 5:16:03 PM
Modified!
Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175762

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 26
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.19	-0.00	-0.000	0.000	

This report has been created by IC Net
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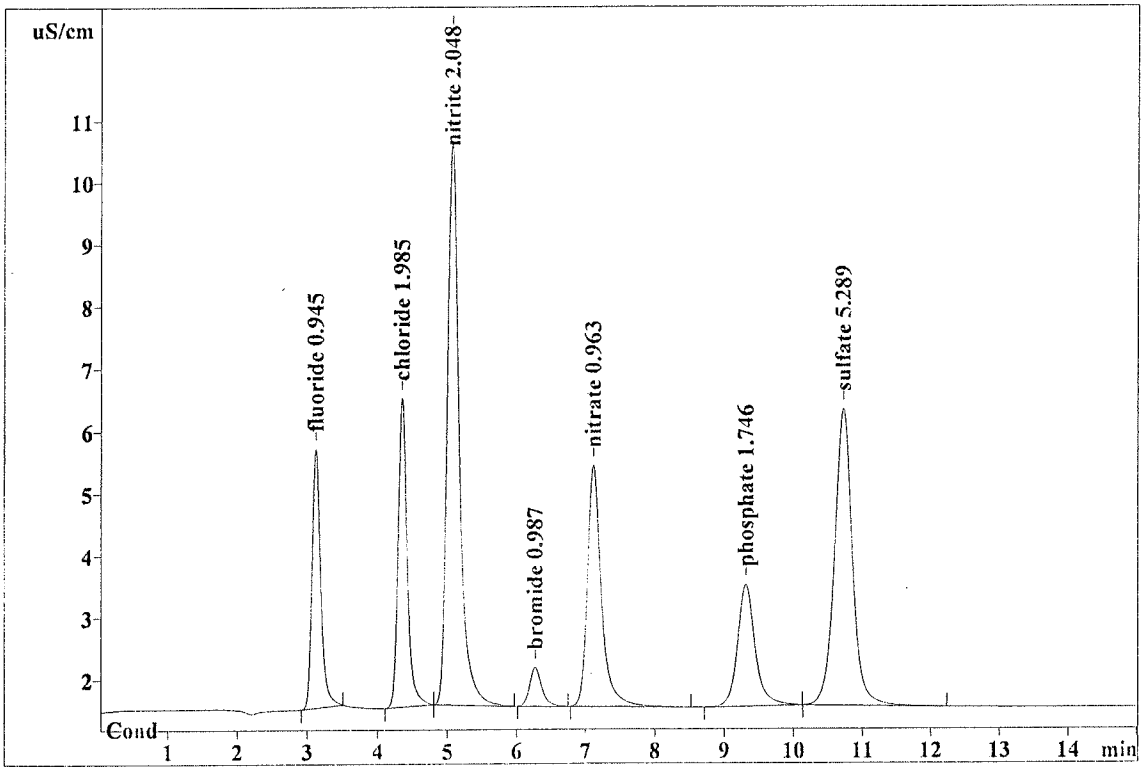
Report date: 11/17/2021 9:38:25 AM
Printed by: VDuran

Ident: AK19-37 CCV7
Analysis from: 11/16/2021 8:09:26 PM
File: _2021-11-16_20-09.chw Last save: 11/16/2021 8:24:23 PM

Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175773

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 37
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

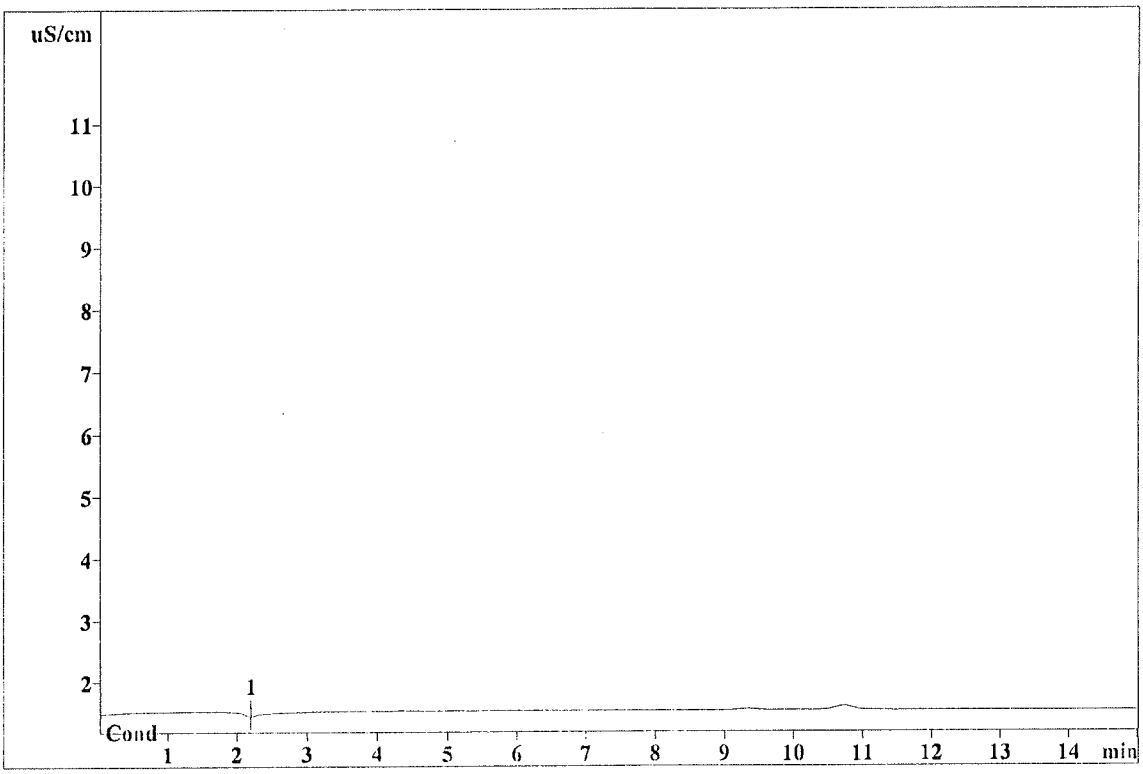
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	4.17	35.278	0.945	fluoride
2	4.34	4.97	45.529	1.985	chloride
3	5.06	9.04	109.613	2.048	nitrite
4	6.27	0.62	7.741	0.987	bromide
5	7.11	3.89	54.156	0.963	nitrate
6	9.31	1.96	34.672	1.746	phosphate
7	10.72	4.78	86.949	5.289	sulfate
7	15.00	29.43	373.937	13.963	

This report has been created by IC Net
METROHM LTD

Report date: 11/17/2021 9:38:50 AM
Printed by: VDuran

Ident: AK19-38 CCB7
Analysis from: 11/16/2021 8:26:31 PM
File: _2021-11-16_20-26.chw Last save: 11/16/2021 8:41:28 PM
Modified!
Method: ICD0-K15.mtw Last save: 11/16/2021 9:55:38 AM
Run operator: VDuran
Analysis number: 175774

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 38
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.20	-0.00	0.000	0.000	

This report has been created by IC Net
METROHM LTD

ANALYTICAL LOG(S)

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence. For dillution preparation (sample aliquot/final volume), refer to sample info

Comments:

	CONCENTRATIONS (PPM)
S_1	0.05
S_2	0.1
S_3	0.2
S_4	0.5
S_5	1.0
S_6	2.0
S_7	5.0
S_8	10.0
S_9	20.0

	LINEARITY (PPM)
F	5
Cl	10
NO_2	10
Br	20
NO_3	2
PO_4	20
SO_4	20

IC ELUENT PREPARATION Expiration Date: 12/10/21

Std ID	Aliquot	Final Vol*
SP2-04-01-03	20 mL	2 L

IC REGENERANT PREPARATION Expiration Date: 12/09/21

Std ID	Aliquot	Final Vol*
SP2-06-02-01	100 mL	1 L

* Reagent Water ID: SW1A-011-03-01

Book #: AD0-074
Instrument No.: D0
Pipette ID's: 039380124
SW3-02-02-02
439350100
Analytical Sequence: AK17
Method File: ICD0-K15.mtw
Analytical Batch: -

SOP #	Rev. #
☑ EMAX-300.0	13
☑ EMAX-4110B	6
☑ EMAX-9056	9
☑ EMAX-	
STANDARDS ID	
ICAL	SW3B-20-12-02
ICV	SW3B-20-11-03
~~CCV~~ ICV1 11/15/21	SW3B-20-12-03
LCS	-
MS	-

Filters Lot #:
0.45 µm: -
0.22 µm: -

Snap Seal Containers Lot #:
4 oz: 5420002
1.5 oz: -

Column: Metrosep A Supp 5-100
Flow Rate: 0.70 mL/min

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: VD
Date: 11/15/21

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
2021-11-15_10-10.chw	ICD0-K15.mtw	AK17-01 IB	1	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-15_10-27.chw	ICD0-K15.mtw	AK17-02 S0	2	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-15_10-44.chw	ICD0-K15.mtw	AK17-03 S1	3	1.0	1.0	1.0	100.0	1	METHOD 300/9056/4110B	0.05 PPM
2021-11-15_11-01.chw	ICD0-K15.mtw	AK17-04 S2	4	1.0	1.0	1.0	100.0	2	METHOD 300/9056/4110B	0.1 PPM
2021-11-15_11-18.chw	ICD0-K15.mtw	AK17-05 S3	5	1.0	1.0	1.0	100.0	3	METHOD 300/9056/4110B	0.2 PPM
2021-11-15_11-35.chw	ICD0-K15.mtw	AK17-06 S4	6	1.0	1.0	1.0	100.0	4	METHOD 300/9056/4110B	0.5 PPM
2021-11-15_11-53.chw	ICD0-K15.mtw	AK17-07 S5	7	1.0	1.0	1.0	100.0	5	METHOD 300/9056/4110B	1.0 PPM
2021-11-15_12-10.chw	ICD0-K15.mtw	AK17-08 S6	8	1.0	1.0	1.0	100.0	6	METHOD 300/9056/4110B	2.0 PPM
2021-11-15_12-27.chw	ICD0-K15.mtw	AK17-09 S7	9	1.0	1.0	1.0	100.0	7	METHOD 300/9056/4110B	5.0 PPM
2021-11-15_12-44.chw	ICD0-K15.mtw	AK17-10 S8	10	1.0	1.0	1.0	100.0	8	METHOD 300/9056/4110B	10.0 PPM
2021-11-15_13-01.chw	ICD0-K15.mtw	AK17-11 S9	11	1.0	1.0	1.0	100.0	9	METHOD 300/9056/4110B	20.0 PPM
2021-11-15_13-18.chw	ICD0-K15.mtw	AK17-12 ICV	12	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-15_13-35.chw	ICD0-K15.mtw	AK17-13 ICV1	13	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	1.0 PPM
2021-11-15_13-52.chw	ICD0-K15.mtw	AK17-14 ICB	14	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	

FINAL VD 11/15/21

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence. For dillution preparation (sample aliquot/final volume), refer to sample info

Comments:

Book #:	AD0-074
Instrument No.:	D0
Pipette ID's:	039380124
	SW3-02-02-02
	439350100
Analytical Sequence:	AK19
Method File:	ICD0-K15.mtw
Analytical Batch:	ICK017W / ICK019W

SOP #	Rev. #
☒ EMAX-300.0	13
☐ EMAX-4110B	6
☒ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	–
ICV	–
CCV	SW3B-20-13-01
LCS	SW3B-20-13-02
MS	SCP refer to LCS Parent ID

Filters Lot #: Snap Seal Containers Lot #:

0.45 µm: 210081103 4 oz:

0.22 µm: 210427103 1.5 oz: 13621005

Column: Metrosep A Supp 5-100

Flow Rate: 0.70 mL/min

IC ELUENT PREPARATION Expiration Date: 12/10/21

Std ID	Aliquot	Final Vol*
SP2-04-01-03	20 mL	2 L

IC REGENERANT PREPARATION Expiration Date: 12/09/21

Std ID	Aliquot	Final Vol*
SP2-06-02-01	100 mL	1 L

* Reagent Water ID: SW1A-011-03-01

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: VD

Date: 11/16/21

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
2021-11-16_09-53.chw	ICD0-K15.mtw	AK19-01 CCV1	1	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_10-11.chw	ICD0-K15.mtw	AK19-02 CCB1	2	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_10-28.chw	ICD0-K15.mtw	AK19-03 ICK017WB	3	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_10-45.chw	ICD0-K15.mtw	AK19-04 ICK017WL	4	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_11-02.chw	ICD0-K15.mtw	AK19-05 ICK017WC	5	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_11-19.chw	ICD0-K15.mtw	AK19-06 J146-11R	6	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_11-36.chw	ICD0-K15.mtw	AK19-07 J146-11RD	7	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_11-53.chw	ICD0-K15.mtw	AK19-08 J146-11RM	8	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_12-10.chw	ICD0-K15.mtw	AK19-09 J146-11RS	9	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_12-27.chw	ICD0-K15.mtw	AK19-10 J146-12R	10	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_12-44.chw	ICD0-K15.mtw	AK19-11 J146-13R	11	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_13-01.chw	ICD0-K15.mtw	AK19-12 J242-01	12	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_13-19.chw	ICD0-K15.mtw	AK19-13 CCV3	13	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_13-36.chw	ICD0-K15.mtw	AK19-14 CCB3	14	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_13-53.chw	ICD0-K15.mtw	AK19-15 K137-01	15	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_14-10.chw	ICD0-K15.mtw	AK19-16 K137-02	16	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_14-27.chw	ICD0-K15.mtw	AK19-17 J143-15K DF=100	17	1.0	100.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/20ml
2021-11-16_14-44.chw	ICD0-K15.mtw	AK19-18 J143-16K DF=100	18	1.0	100.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/20ml
2021-11-16_15-01.chw	ICD0-K15.mtw	AK19-19 J242-01I DF=10	19	1.0	10.0	1.0	100.0	0	METHOD 300/9056/4110B	2ml/20ml
2021-11-16_15-18.chw	ICD0-K15.mtw	AK19-20 K137-01I DF=2	20	1.0	2.0	1.0	100.0	0	METHOD 300/9056/4110B	10ml/20ml
2021-11-16_15-35.chw	ICD0-K15.mtw	AK19-21 K137-01J DF=10	21	1.0	10.0	1.0	100.0	0	METHOD 300/9056/4110B	2ml/20ml
2021-11-16_15-52.chw	ICD0-K15.mtw	AK19-22 K137-01K DF=200	22	1.0	200.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml
2021-11-16_16-09.chw	ICD0-K15.mtw	AK19-23 K137-02I DF=10	23	1.0	10.0	1.0	100.0	0	METHOD 300/9056/4110B	2ml/20ml
2021-11-16_16-26.chw	ICD0-K15.mtw	AK19-24 K137-02J DF=100	24	1.0	100.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/20ml
2021-11-16_16-44.chw	ICD0-K15.mtw	AK19-25 CCV5	25	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_17-01.chw	ICD0-K15.mtw	AK19-26 CCB5	26	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_17-18.chw	ICD0-K15.mtw	AK19-27 J242-01J DF=20	27	1.0	20.0	1.0	100.0	0	METHOD 300/9056/4110B	1ml/20ml
2021-11-16_17-35.chw	ICD0-K15.mtw	AK19-28 K137-01T DF=20	28	1.0	20.0	1.0	100.0	0	METHOD 300/9056/4110B	1ml/20ml
2021-11-16_17-52.chw	ICD0-K15.mtw	AK19-29 J227-02K DF=200	29	1.0	200.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml
2021-11-16_18-09.chw	ICD0-K15.mtw	AK19-30 J227-02T DF=2000	30	1.0	2000.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml INTERMEDIATE, 2ml/20ml DF=20
2021-11-16_18-26.chw	ICD0-K15.mtw	AK19-31 J227-03K DF=40	31	1.0	40.0	1.0	100.0	0	METHOD 300/9056/4110B	1ml/40ml
2021-11-16_18-44.chw	ICD0-K15.mtw	AK19-32 J227-03T DF=100	32	1.0	100.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/20ml
2021-11-16_19-01.chw	ICD0-K15.mtw	AK19-33 J227-05K DF=200	33	1.0	200.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml
2021-11-16_19-18.chw	ICD0-K15.mtw	AK19-34 J277-05T DF=2000	34	1.0	2000.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml INTERMEDIATE, 2ml/20ml DF=20
2021-11-16_19-35.chw	ICD0-K15.mtw	AK19-35 J277-06K DF=200	35	1.0	200.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml
2021-11-16_19-52.chw	ICD0-K15.mtw	AK19-36 J227-06T DF=2000	36	1.0	2000.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml INTERMEDIATE, 2ml/20ml DF=20
2021-11-16_20-09.chw	ICD0-K15.mtw	AK19-37 CCV7	37	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_20-26.chw	ICD0-K15.mtw	AK19-38 CCB7	38	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_20-43.chw	ICD0-K15.mtw	AK19-39 J227-07K DF=200	39	1.0	200.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml
2021-11-16_21-00.chw	ICD0-K15.mtw	AK19-40 J227-07T DF=2000	40	1.0	2000.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml INTERMEDIATE, 2ml/20ml DF=20
2021-11-16_21-17.chw	ICD0-K15.mtw	AK19-41 J227-08K DF=200	41	1.0	200.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml
2021-11-16_21-34.chw	ICD0-K15.mtw	AK19-42 J227-08T DF=2000	42	1.0	2000.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml INTERMEDIATE, 2ml/20ml DF=20
2021-11-16_21-51.chw	ICD0-K15.mtw	AK19-43 J227-09K DF=200	43	1.0	200.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml
2021-11-16_22-09.chw	ICD0-K15.mtw	AK19-44 J277-09T DF=2000	44	1.0	2000.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml INTERMEDIATE, 2ml/20ml DF=20
2021-11-16_22-26.chw	ICD0-K15.mtw	AK19-45 J227-10K DF=100	45	1.0	100.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/20ml
2021-11-16_22-43.chw	ICD0-K15.mtw	AK19-46 J227-11K DF=2000	46	1.0	2000.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml INTERMEDIATE, 2ml/20ml DF=20
2021-11-16_23-00.chw	ICD0-K15.mtw	AK19-47 J227-11KD DF=2000	47	1.0	2000.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/20ml INTERMEDIATE, 2ml/40ml DF=20
2021-11-16_23-17.chw	ICD0-K15.mtw	AK19-48 J227-11KM DF=2000	48	1.0	2000.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/20ml INTERMEDIATE, 2ml/40ml DF=20
2021-11-16_23-34.chw	ICD0-K15.mtw	AK19-49 CCV9	49	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-16_23-51.chw	ICD0-K15.mtw	AK19-50 CCB9	50	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-17_00-08.chw	ICD0-K15.mtw	AK19-51 J227-11KS DF=2000	51	1.0	2000.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml INTERMEDIATE, 2ml/20ml DF=20
2021-11-17_00-25.chw	ICD0-K15.mtw	AK19-52 J227-15K DF=100	52	1.0	100.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/20ml
2021-11-17_00-42.chw	ICD0-K15.mtw	AK19-53 J227-17K DF=200	53	1.0	200.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml
2021-11-17_00-59.chw	ICD0-K15.mtw	AK19-54 J227-17T DF=2000	54	1.0	2000.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/40ml INTERMEDIATE, 2ml/20ml DF=20
2021-11-17_01-16.chw	ICD0-K15.mtw	AK19-55 J227-18K DF=100	55	1.0	100.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/20ml
2021-11-17_01-34.chw	ICD0-K15.mtw	AK19-56 CCV11	56	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-17_01-51.chw	ICD0-K15.mtw	AK19-57 CCB11	57	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-17_02-08.chw	ICD0-K15.mtw	AK19-58 ICK019WB	58	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-17_02-25.chw	ICD0-K15.mtw	AK19-59 ICK019WL	59	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	

FINAL VD 11/17/21

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
2021-11-17_02-42.chw	ICD0-K15.mtw	AK19-60 ICK019WC	60	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-17_02-59.chw	ICD0-K15.mtw	AK19-61 J227-19K DF=100	61	1.0	100.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/20ml
2021-11-17_03-16.chw	ICD0-K15.mtw	AK19-62 J227-19T DF=2000	62	1.0	2000.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/20ml INTERMEDIATE, 1ml/20ml DF=20
2021-11-17_03-33.chw	ICD0-K15.mtw	AK19-63 J227-20K DF=1000	63	1.0	1000.0	1.0	100.0	0	METHOD 300/9056/4110B	0.2ml/20ml INTERMEDIATE, 2ml/20ml DF=10
2021-11-17_03-50.chw	ICD0-K15.mtw	AK19-64 K022-01K DF=100	64	1.0	100.0	1.0	100.0	0	METHOD 300/9056/4110B	0.4ml/40ml
2021-11-17_04-07.chw	ICD0-K15.mtw	AK19-65 K022-01KD DF=100	65	1.0	100.0	1.0	100.0	0	METHOD 300/9056/4110B	0.4ml/40ml
2021-11-17_04-24.chw	ICD0-K15.mtw	AK19-66 K022-01KM DF=100	66	1.0	100.0	1.0	100.0	0	METHOD 300/9056/4110B	0.4ml/40ml
2021-11-17_04-41.chw	ICD0-K15.mtw	AK19-67 K022-01KS DF=100	67	1.0	100.0	1.0	100.0	0	METHOD 300/9056/4110B	0.4ml/40ml
2021-11-17_04-59.chw	ICD0-K15.mtw	AK19-68 CCV13	68	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-11-17_05-16.chw	ICD0-K15.mtw	AK19-69 CCB13	69	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	

FINAL VD 11/17/21

RETENTION TIME WINDOW

TWENTY FOUR HOUR RETENTION TIME WINDOW
METHOD 300.0

Lab name:	**EMAX**	**Method:**	**EMAX-300.0**
Instrument ID:	D0 (761 IC)	**IC column:**	METROSEP A SUPP 5
		Column size:	100X4.0mm

Compound	ICAL Mean RT	from	to	RTW
FLUORIDE	**3.13**	2.99	3.27	**0.137**
CHLORIDE	**4.35**	4.17	4.53	**0.181**
NITRITE	**5.08**	4.89	5.28	**0.195**
BROMIDE	**6.30**	6.06	6.54	**0.238**
NITRATE	**7.16**	6.82	7.49	**0.335**
PHOSPHATE	**9.30**	9.04	9.55	**0.256**
SULFATE	**10.69**	10.37	11.01	**0.321**

ICD0-K15.mtw

RETENTION TIME WINDOW
METHOD 300.0

Lab name:	**EMAX**	**Method:**	**EMAX-300.0**
Instrument ID:	D0 (761 IC)	IC column: Column size:	METROSEP A SUPP 5 100X4.0mm

Compound		Retention time Window
FLUORIDE	**(+/-)**	**0.090**
CHLORIDE	**(+/-)**	**0.104**
NITRITE	**(+/-)**	**0.159**
BROMIDE	**(+/-)**	**0.329**
NITRATE	**(+/-)**	**0.420**
PHOSPHATE	**(+/-)**	**0.528**
SULFATE	**(+/-)**	**0.797**
IODIDE	**(+/-)**	**0.652**

AA
05/05/14

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21K137

METHOD SM2320B
TOTAL ALKALINITY

A total of two(2) water samples were received on 11/16/21 to be analyzed for Total Alkalinity in accordance with Method SM2320B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Alkalinity was not detected in ALK007WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ALK007WL/ALK007WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2320B
TOTAL ALKALINITY

Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 21K137

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALK007WB	ND	1	NA	5	5	11/19/2110:48	NA	21E5K0603	21E5K06	ALK007W	NA	NA
LCS1W	ALK007WL	81.7	1	NA	5	5	11/19/2110:55	NA	21E5K0604	21E5K06	ALK007W	NA	NA
LCD1W	ALK007WC	83.7	1	NA	5	5	11/19/2111:02	NA	21E5K0605	21E5K06	ALK007W	NA	NA
MTS-1-Q421	K137-01	40.7	1	NA	5	5	11/19/2111:17	NA	21E5K0607	21E5K06	ALK007W	11/15/2109:40	11/16/21
MTS-2-Q421	K137-02	69.8	1	NA	5	5	11/19/2111:25	NA	21E5K0608	21E5K06	ALK007W	11/15/2109:50	11/16/21

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21K137
METHOD : METHOD SM2320B

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	ALK007WB	ALK007WL	ALK007WC
LAB FILE ID	21E5K0603	21E5K0604	21E5K0605
DATE EXTRACTED	NA	NA	NA
DATE ANALYZED	11/19/2110:48	11/19/2110:55	11/19/2111:02
PREP BATCH	ALK007W	ALK007W	ALK007W
CALIBRATION REF:	21E5K06	21E5K06	21E5K06

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
ALKALINITY	ND	86.4	81.7	95	86.4	83.7	97	2	85-115	20

Note: For samples and relevent QCs/Standards analyzed, refer to attached analytical sequence.

☐ Titration end point: pH 4.5 ± 0.04

☑ Low alkalinity: pH 4.2 ± 0.04

Micropipette ID: 6427800021

MS/MSD amount of spike: N/A

Book#: AAL-046

Instrument No.: ☐ 53 ☑ E5

Analytical Batch: 21E5K06

Analytical Sequence: ALK007W

SOP #	Rev. #
☑ EMAX-2320B	6
☐ EMAX-	

Reagent Water: RW1.21-004

Comments: ALK007W: 21K137
21K151

LOQ @ 5mg/L: 2.31mL of 86.4mg/L (LCS), to 40 mL of reagent water.

STANDARDS ID		Conc. (mg/L)
0.02N HCL	SW21.04.02.08	0.02N
LCS	SW1A.03.01.01	86.4
MS/MSD	N/A	N/A
ICV	N/A	N/A

pH Buffer	ID
pH 4	SW1.02.08.04
pH 7	SW1A.03.01.08
pH 10	SW1.02.08.02
pH 8.0 (Check)	SW1A.03.01.02
pH Strip	HC160347

Analyzed By: LA

Date: 11/19/21

PC-TitratION PLUS

pH and Alkalinity In-Run Report

Run Number 1398 **Analytical Batch#** 21E5K06

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
1	ICV PH 8	21E5K06	11/19/21	10:34 AM	7.95	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	
2	INSTR. CHK.	21E5K06	11/19/21	10:41 AM	8.46	.01	.31	.33	.36	11.60	10.89	.71	.00	
3	ALK007WB	21E5K06	11/19/21	10:48 AM	6.32	.00	.07	.11	.00	1.20	1.20	.00	.00	
4	ALK007WL	21E5K06	11/19/21	10:55 AM	8.76	.89	2.04	-1.00	35.72	81.67	10.22	71.45	.00	
5	ALK007WC	21E5K06	11/19/21	11:02 AM	8.79	.98	2.09	-1.00	39.03	83.67	5.61	78.06	.00	
6	LOQ @ 5mg/L	21E5K06	11/19/21	11:10 AM	8.57	.04	.19	.23	1.67	6.22	2.88	3.34	.00	
7	K137-01	21E5K06	11/19/21	11:17 AM	7.59	.00	1.02	-1.00	.00	40.73	40.73	.00	.00	
8	K137-02	21E5K06	11/19/21	11:25 AM	7.69	.00	1.74	-1.00	.00	69.76	69.76	.00	.00	
9	K151-01	21E5K06	11/19/21	11:32 AM	8.67	.16	1.55	-1.00	6.21	61.98	49.56	12.43	.00	
10	K151-02	21E5K06	11/19/21	11:39 AM	7.78	.00	6.04	-1.00	.00	241.59	241.59	.00	.00	
11	K151-04	21E5K06	11/19/21	11:46 AM	6.73	.00	3.04	-1.00	.00	121.74	121.74	.00	.00	
12	K151-05	21E5K06	11/19/21	11:52 AM	6.73	.00	3.04	-1.00	.00	121.63	121.63	.00	.00	
13	K151-07	21E5K06	11/19/21	12:01 PM	7.72	.00	6.94	-1.00	.00	277.54	277.54	.00	.00	
14	K151-08	21E5K06	11/19/21	12:09 PM	7.71	.00	6.50	-1.00	.00	259.84	259.84	.00	.00	
15	K151-09	21E5K06	11/19/21	12:16 PM	7.72	.00	6.54	-1.00	.00	261.49	261.49	.00	.00	
16	K151-09D	21E5K06	11/19/21	12:24 PM	7.75	.00	6.57	-1.00	.00	262.62	262.62	.00	.00	
17	RINSE	21E5K06	11/19/21	12:31 PM	6.54	.00	.08	.12	.00	1.58	1.58	.00	.00	

Analyzed by: VA

Reviewed by: VA Date: 11/22/21

PC-TitratION PLUS by Man-Tech Associates, Inc.

pH AND ALKALINITY IN-RUN REPORT.SRW

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PC-Titrate For Windows

Running List Report

Order Number - 21E5K06

	Schedule	Sample Id	Vial	Weight	Volume
1	PH CAL	CAL	1	.00	25.00
2	PH ONLY	ICV PH 8	4	.00	25.00
3	PH-ALK	INSTR. CHK.	5	.00	25.00
4	PH-ALK	ALK007WB	6	.00	25.00
5	PH-ALK	ALK007WL	7	.00	25.00
6	PH-ALK	ALK007WC	8	.00	25.00
7	PH-ALK	LOQ @ 5mg/L	9	.00	25.00
8	PH-ALK	K137-01	10	.00	25.00
9	PH-ALK	K137-02	11	.00	25.00
10	PH-ALK	K151-01	12	.00	25.00
11	PH-ALK	K151-02	13	.00	25.00
12	PH-ALK	K151-04	14	.00	25.00
13	PH-ALK	K151-05	15	.00	25.00
14	PH-ALK	K151-07	16	.00	25.00
15	PH-ALK	K151-08	17	.00	25.00
16	PH-ALK	K151-09	18	.00	25.00
17	PH-ALK	K151-09D	19	.00	25.00
18	PH-ALK	RINSE	20	.00	25.00

PC-TitratION PLUS by Man-Tech Associates, Inc.

runninglist.SRW
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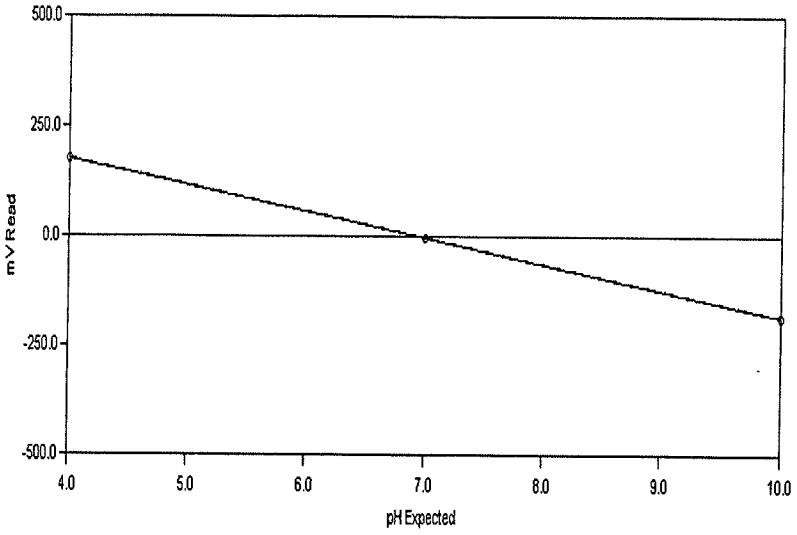
PC-TitratION PLUS
Calibration Report

Calibration Record # 1038



Calibration Settings

Calibration ID	PH CAL 4-7-10	Date	11/19/2021
Channel	1	Time	10:32 AM
Probe Type	pH	Temperature	296.74 K 23.59 C
Probe ID	PH ELECTRODE	Analysis Type	Single Line Fit

Calibration Results

Slope	-60.017	CorrCoeff	1.0000
Intercept	-4.840	Equation: Y = (-60.017) X + (-4.840)	

Calibration Validity **True** Operator

	Result	Minimum	Maximum
Slope	-60.017	-65.00	-53.00
Intercept	-4.840	-40.00	40.00
Correlation Coefficient	1.0000	0.99	1.00

Note: "True" means the calibration was within the specified ranges
"False" means the calibration was NOT within the specified ranges

Calibration Data	Standard	Reading
	4.00	174.19
	7.00	-2.80
	10.00	-185.91

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CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21K137

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

A total of two(2) water samples were received on 11/16/21 to be analyzed for Total Dissolved Solids in accordance with Method SM2540C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Balance calibration verifications were carried out on a frequency specified by the method. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Total Dissolved Solids was not detected in TDK004WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for Total Dissolved Solids was within LCS QC limits in TDK004WL. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 21K137

Matrix : WATER
InstrumentID : 402426

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	TDK004WB	ND	1	NA	10	10	11/19/2113:31	NA	21TDK00401	21TDK004	TDK004W	NA	NA
LCS1W	TDK004WL	1110	1	NA	10	10	11/19/2113:31	NA	21TDK00402	21TDK004	TDK004W	NA	NA
MTS-1-Q421	K137-01	2090	1	NA	10	10	11/19/2113:31	NA	21TDK00403	21TDK004	TDK004W	11/15/2109:40	11/16/21
MTS-2-Q421	K137-02	1350	1	NA	10	10	11/19/2113:31	NA	21TDK00404	21TDK004	TDK004W	11/15/2109:50	11/16/21

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21K137
METHOD : SM2540C

MATRIX : WATER

DILUTION FACTOR:	1	1
SAMPLE ID :	MBLK1W	LCS1W
LAB SAMPLE ID :	TDK004WB	TDK004WL
LAB FILE ID :	21TDK00401	21TDK00402
DATE PREPARED :	NA	NA
DATE ANALYZED :	11/19/2113:31	11/19/2113:31
PREP BATCH :	TDK004W	TDK004W
CALIBRATION REF:	21TDK004	21TDK004

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	QC LIMIT (%)
Total dissolved solids	ND	1000	1110	111	75-125

EMAX LABORATORIES, INC.

TOTAL DISSOLVED SOLIDS

21TDK004

DataFileID	Sample ID	Sample Amt(ml)	Dish #	Dish (g)	1stDry Wt+Dish(g)	DateTime	2ndDry Wt+Dish(g)	DateTime	FinalDry Wt+Dish(g)	DateTime	Rdgs(<0.5mg)	Solids (mg)	TDS (mg/L)	Result (mg/L)
21TDK00401	TDK004WB	100	B	90.3208	90.3207	11/22/21 9:43	90.3206	11/22/21 12:03			0.1	-0.2	-2	ND
21TDK00402	TDK004WL	20	L	21.23481	21.25735	11/22/21 9:44	21.25705	11/22/21 12:04			0.3	22.24	1112	1110
21TDK00403	K137-01	20	1	21.45659	21.49825	11/22/21 9:45	21.49834	11/22/21 12:05			0.09	41.75	2087.5	2090
21TDK00404	K137-02	20	2	21.1994	21.22622	11/22/21 9:46	21.22644	11/22/21 12:06			0.22	27.04	1352	1350
21TDK00405	K151-01	20	3	21.45559	21.47771	11/22/21 9:47	21.47798	11/22/21 12:07			0.27	22.39	1119.5	1120
21TDK00406	K151-02	20	4	21.17636	21.19964	11/22/21 9:50	21.19966	11/22/21 12:10			0.02	23.3	1165	1170
21TDK00407	K151-04	20	5	21.34027	21.39506	11/22/21 9:52	21.39542	11/22/21 12:10			0.36	55.15	2757.5	2760
21TDK00408	K151-05	20	6	21.28031	21.33528	11/22/21 9:53	21.33566	11/22/21 12:11			0.38	55.35	2767.5	2770
21TDK00409	K151-07	20	7	21.28675	21.308	11/22/21 9:54	21.30845	11/22/21 12:12			0.45	21.7	1085	1080
21TDK00410	K151-08	20	8	21.22669	21.24936	11/22/21 9:56	21.24957	11/22/21 12:13			0.21	22.88	1144	1140
21TDK00411	K151-09	20	9	21.38754	21.40876	11/22/21 9:57	21.40892	11/22/21 12:15			0.16	21.38	1069	1070
21TDK00412	K151-09D	20	10	21.30922	21.33173	11/22/21 9:58	21.33143	11/22/21 12:15			0.3	22.21	1110.5	1110
21TDK00413	K159-01	20	11	21.20393	21.22895	11/22/21 10:00	21.22904	11/22/21 12:17			0.09	25.11	1255.5	1260
21TDK00414	K159-01D	20	12	21.17964	21.20554	11/22/21 10:01	21.20527	11/22/21 12:18			0.27	25.63	1281.5	1280
21TDK00415	K159-02	20	13	21.20668	21.23231	11/22/21 10:02	21.23272	11/22/21 12:19			0.41	26.04	1302	1300
21TDK00416	K159-03	20	14	21.19622	21.21298	11/22/21 10:03	21.21294	11/22/21 12:20			0.04	16.72	836	836
21TDK00417	K159-04	20	15	21.34951	21.3675	11/22/21 10:04	21.36793	11/22/21 12:21			0.43	18.42	921	921
21TDK00418	K159-05	20	16	21.25513	21.27413	11/22/21 10:06	21.27451	11/22/21 12:22			0.38	19.38	969	969
21TDK00419	K159-06	50	17	89.3569	89.3856	11/22/21 10:07	89.3858	11/22/21 12:24			0.2	28.9	578	578
21TDK00420	K159-07	20	18	21.34304	21.35817	11/22/21 10:08	21.35845	11/22/21 12:26			0.28	15.41	770.5	771
21TDK00421	K159-08	20	19	21.45315	21.46845	11/22/21 10:09	21.46891	11/22/21 12:28			0.46	15.76	788	788
21TDK00422	K159-09	20	20	21.15629	21.17083	11/22/21 10:10	21.17115	11/22/21 12:29			0.32	14.86	743	743

AV 11/22/21

AV 11/22/21

Beginning Balance Check

Std. Wt. (g)	Balance Rdg (g)	Date	Comments
0.1	0.0998	11/19/21 13:31	PASSED
5	4.9996	11/19/21 13:31	PASSED
100	99.9967	11/19/21 13:31	PASSED

Ending Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.0999	11/19/21 13:48	PASSED
5	4.9995	11/19/21 13:48	PASSED
100	99.9969	11/19/21 13:49	PASSED

Beginning Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1000	11/22/21 9:41	PASSED
5	4.9996	11/22/21 9:42	PASSED
100	99.9952	11/22/21 9:42	PASSED

Ending Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.0998	11/22/21 12:30	PASSED
5	4.9994	11/22/21 12:31	PASSED
100	99.9951	11/22/21 12:31	PASSED

Balance ID: 402426 Weight ID: HN4977/62785

Acceptance Criteria: +/- 0.1% or +/- 0.5 mg whichever is greater

StandardID	Desc.	Conc. (mg/L)	ExpDate
RW1-21-004	MB	ND	N/A
SW2B-35-07-07	LCS	1000	06/01/22
HC155968	pH strip	0-14	11/08/31

QC Check

LabSampleID	Result	Expected Value	QC Result
TDK004WB	-2	ND	MB Passed
TDK004WL	1112	1000	%R=111
#N/A	#N/A	#N/A	#N/A
K151-09D	1110.5	1069	%D=4
K159-01D	1281.5	1255.5	%D=2

Oven Drying Thermometer ID: 4625

Evaporating			
☑ Start	11/19/2021 14:29	Temp	90 °C
☑ End	11/22/2021 7:25	Temp	90 °C
1st Drying			
☑ Start	11/22/21 7:45	Temp	180 °C
☑ End	11/22/21 8:45	Temp	180 °C
2nd Drying			
☑ Start	11/22/21 10:12	Temp	180 °C
☑ End	11/22/21 11:12	Temp	180 °C
Final Drying			
☐ Start		Temp	°C
☐ End		Temp	°C

Notes:

Samples were evaporated at 90°C (±5°C) and dried at 180°C (±2°C).

SOP

Analyzedby: AValle

Checked by: AV

☑ EMAX-2540C Rev. 0

Date: 11/22/21

LOQ: 10 mg/L

0.45 micron Filter Lot#: J213620-140929067-070

Micropipette ID: N/A

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21K137

METHOD SM4500-NH3F
AMMONIA AS N

A total of two(2) water samples were received on 11/16/21 to be analyzed for Ammonia as N in accordance with Method SM4500-NH3F and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Ammonia-N was not detected in NHK008WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. NHK008WL/NHK008WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Ammonia-N was within MS QC limits in K137-02M/K137-02S. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM4500-NH3F
AMMONIA AS N

Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 21K137

Matrix : WATER
InstrumentID : H9

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	NHK008WB	ND	1	NA	0.1	0.06	11/19/2110:28	11/18/2114:27	21NHK00811	21NHK008	NHK008W	NA	NA
LCS1W	NHK008WL	0.491	1	NA	0.1	0.06	11/19/2110:28	11/18/2114:27	21NHK00812	21NHK008	NHK008W	NA	NA
LCD1W	NHK008WC	0.435	1	NA	0.1	0.06	11/19/2110:28	11/18/2114:27	21NHK00813	21NHK008	NHK008W	NA	NA
MTS-1-Q421	K137-01	0.261	1	NA	0.1	0.06	11/19/2110:28	11/18/2114:27	21NHK00814	21NHK008	NHK008W	11/15/2109:40	11/16/21
MTS-2-Q421	K137-02	ND	1	NA	0.1	0.06	11/19/2110:28	11/18/2114:27	21NHK00815	21NHK008	NHK008W	11/15/2109:50	11/16/21
MTS-2-Q421DUP	K137-02D	ND	1	NA	0.1	0.06	11/19/2110:28	11/18/2114:27	21NHK00816	21NHK008	NHK008W	11/15/2109:50	11/16/21
MTS-2-Q421MS	K137-02M	0.483	1	NA	0.1	0.06	11/19/2110:28	11/18/2114:27	21NHK00817	21NHK008	NHK008W	11/15/2109:50	11/16/21
MTS-2-Q421MSD	K137-02S	0.446	1	NA	0.1	0.06	11/19/2110:29	11/18/2114:27	21NHK00818	21NHK008	NHK008W	11/15/2109:50	11/16/21

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21K137
METHOD : SM4500-NH3F

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: NHK008WB	NHK008WL	NHK008WC
LAB FILE ID	: 21NHK00811	21NHK00812	21NHK00813
DATE PREPARED	: 11/18/2114:27	11/18/2114:27	11/18/2114:27
DATE ANALYZED	: 11/19/2110:28	11/19/2110:28	11/19/2110:28
PREP BATCH	: NHK008W	NHK008W	NHK008W
CALIBRATION REF	: 21NHK008	21NHK008	21NHK008

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Ammonia-N	ND	0.500	0.491	98	0.500	0.435	87	12	80-120	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21K137
METHOD : SM4500-NH3F

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MTS-2-Q421	MTS-2-Q421MS	MTS-2-Q421MSD
LAB SAMPLE ID	: K137-02	K137-02M	K137-02S
LAB FILE ID	: 21NHK00815	21NHK00817	21NHK00818
DATE PREPARED	: 11/18/2114:27	11/18/2114:27	11/18/2114:27
DATE ANALYZED	: 11/19/2110:28	11/19/2110:28	11/19/2110:29
PREP BATCH	: NHK008W	NHK008W	NHK008W
CALIBRATION REF:	21NHK008	21NHK008	21NHK008

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Ammonia-N	ND	0.500	0.483	97	0.500	0.446	89	8	75-125	20

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21K137
METHOD : SM4500-NH3F

MATRIX	: WATER	
DILUTION FACTOR	: 1	1
SAMPLE ID	: MTS-2-Q421	MTS-2-Q421DUP
LAB SAMPLE ID	: K137-02	K137-02D
LAB FILE ID	: 21NHK00815	21NHK00816
DATE PREPARED	: 11/18/2114:27	11/18/2114:27
DATE ANALYZED	: 11/19/2110:28	11/19/2110:28
PREP BATCH	: NHK008W	NHK008W
CALIBRATION REF	: 21NHK008	21NHK008

ACCESSION:

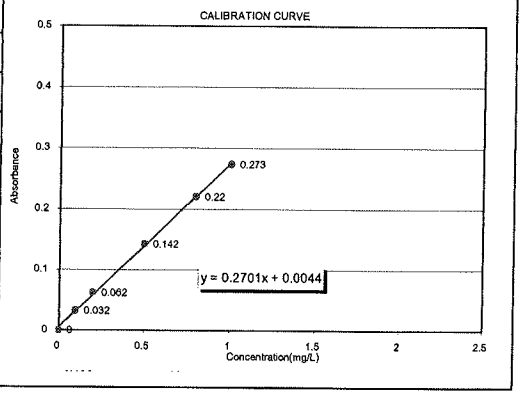
PARAMETER	PSResult (mg/L)	DUPResult (mg/L)	RPD (%)	QCLimit (%)
Ammonia-N	ND	ND	0	20

PS: Parent Sample DUP: Sample Duplicate

Data File Name	Calibration ID	Conc. mg/L	WL	Abs	CalDate	FC	%Rec
21NHK00801	S0	0	640NM	0	11/19/21 10:25	-0.016461842	ND
21NHK00802	S1	0.1	640NM	0.032	11/19/21 10:25	0.102002731	102
21NHK00803	S2	0.2	640NM	0.062	11/19/21 10:25	0.213083268	107
21NHK00804	S3	0.5	640NM	0.142	11/19/21 10:26	0.5092247	102
21NHK00805	S4	0.8	640NM	0.22	11/19/21 10:26	0.797982097	100
21NHK00806	S5	1	640NM	0.273	11/19/21 10:26	0.994189046	99
21NHK00807	ICV	0.5	640NM	0.149	11/19/21 10:27	0.535138826	107
21NHK00808	ICB	0	640NM	0.001	11/19/21 10:27	-0.012759624	ND
21NHK00809	STD.HIGH	0.8	640NM	0.216	11/19/21 10:27	0.783	98
21NHK00810	STD.LOW	0.2	640NM	0.081	11/19/21 10:27	0.208	105
21NHK00819	CCV1	0.5	640NM	0.144	11/19/21 10:29	0.516628736	103
21NHK00820	CCB1	0	640NM	0.002	11/19/21 10:29	-0.009057808	ND

$$FC = [(A * CF) - Y] * DF$$

InstrumentID: H9



CF= 3.702017903 Y= 0.01646 r= 0.999651

	DL Water(mg/L) 0.03		DL Soil(mg/Kg) 0.3
	LOD Water(mg/L) 0.06		LOD Soil(mg/Kg) 0.6
SOP	LOQ Water(mg/L) 0.1		LOQ Soil(mg/Kg) 1

☑ EMAX-4500-NH3F Rev. 5

Snapseal Lot [1.5oz [4oz [10oz]:	24821009	5420002	34820012

Balance ID: N/A

Micropipette ID: B42762460 942751514 442781364

Comment:

Standard / Reagent ID	Description	Conc.	Exp.Date
SW2B-40-08-06	Intermediate ICAL CCV High Low Std (mg/L)	10	04/05/22
SW2B-40-08-07	Intermediate ICV LCS MS Std (mg/L)	10	04/05/22
RW1-21-004	Reagent Water	N/A	N/A
N/A	Sand	N/A	N/A
SWP1-69-38-02	Phenol Solution	MIXED	11/22/21
SWP1-68-36-02	Sodium Nitroprusside (%)	0.05	12/05/21
SWP1-68-43-01	Oxidizing Agent	MIXED	11/19/21
SWP1-68-27-01	Borate Buffer	MIXED	04/20/21
SWP1-60-36-03	NaOH (N)	10	01/04/22
SWR1-03-04-06	Lead Acetate Paper	N/A	03/22/31
N/A	Dechlorinating Agent	1/70N	N/A
SWR1-03-04-05	KI Paper	N/A	03/15/31
N/A	HCl	6N	N/A
SWP1-68-31-02	H_2SO_4	0.04N	10/25/22
SP1A-07-03-04	Acetic Acid	N/A	06/06/29
SWP1-68-43-02	S0	0.04N	11/19/21
SWP1-60-37-01	NaOH (N)	1	01/04/22

Expected Sample Amount: 25

Standard Prep	Intermediate Std Aliquot (ml)	Final Vol (ml)	DateTime
S0	0	10	11/19/21 8:30
S1	0.1	10	11/19/21 8:30
S2	0.2	10	11/19/21 8:30
S3	0.5	10	11/19/21 8:30
S4	0.8	10	11/19/21 8:30
S5	1	10	11/19/21 8:30
S6			
ICV	0.5	10	11/19/21 8:30
CCV	0.5	10	11/19/21 8:30
Std. High	2	25	11/18/21 9:49
Std. Low	0.5	25	11/18/21 9:49
LCS EV	1.25	25	11/18/21 9:49

CALIBRATION CHECK pHMeterID: 53

Buffer ID	Buffer	Rdg	Date
SW1A-03-01-06	1	1.02	11/18/21 11:07
SW1A-03-01-08	7	7.01	11/18/21 11:08
SW1-02-08-02	10	10.02	11/18/21 11:09
SW1-02-08-27	Check Std (8)	7.96	11/18/21 11:10

☑ Distillation Date Time Start: 11/18/21 14:27 ☑ End: 11/18/21 15:19

☑ Coloring Agent Addn Start: 11/19/21 9:12 ☑ End: 11/19/21 9:17

Analyzed by: AValle

DataFileID	LabSampleID	Result	Flag	RUnit	SampleAmt	SUnit	PDateTime	FinalVol (ml)	WL	Abs	ADateTime	Sample Bkgnd	DF	%M	Conc.	DFxPrep Factor	Notes	Analyst	Sample pH	Sulfide Check	Chlorine Chk (+/-)	De-Cl Sol.(ml)	Sample pH Adj	Dist. #
21NHK00809	STD HIGH	0.783		mg/L	25	ml	11/18/21 14:27	25	640NM	0.216	A 11/19/21 10:27	0	1		0.783174	1		AValle	5.67				9.53	1
21NHK00810	STD LOW	0.209		mg/L	25	ml	11/18/21 14:27	25	640NM	0.061	A 11/19/21 10:27	0	1		0.209361	1		AValle	5.67				9.54	1
21NHK00811	NHK008WB	ND		mg/L	25	ml	11/18/21 14:27	25	640NM	0.004	A 11/19/21 10:28	0	1		-0.00165	1		AValle	5.66				9.53	1
21NHK00812	NHK008WL	0.491		mg/L	25	ml	11/18/21 14:27	25	640NM	0.137	A 11/19/21 10:28	0	1		0.490715	1		AValle	5.58				9.51	1
21NHK00813	NHK008WC	0.435		mg/L	25	ml	11/18/21 14:27	25	640NM	0.122	A 11/19/21 10:28	0	1		0.435184	1		AValle	5.6				9.52	1
21NHK00814	K137-01	0.261		mg/L	25	ml	11/18/21 14:27	25	640NM	0.075	A 11/19/21 10:28	0	1		0.26119	1		AValle	1.4	-	-	0	9.52	1
21NHK00815	K137-02	ND		mg/L	25	ml	11/18/21 14:27	25	640NM	0.011	A 11/19/21 10:28	0	1		0.02426	1		AValle	1.42	-	-	0	9.54	1
21NHK00816	K137-02D	ND		mg/L	25	ml	11/18/21 14:27	25	640NM	0.011	A 11/19/21 10:28	0	1		0.02426	1		AValle	1.42	-	-	0	9.51	1
21NHK00817	K137-02M	0.483		mg/L	25	ml	11/18/21 14:27	25	640NM	0.135	A 11/19/21 10:28	0	1		0.483311	1		AValle	1.41	-	-	0	9.52	1
21NHK00818	K137-02S	0.446		mg/L	25	ml	11/18/21 14:27	25	640NM	0.125	A 11/19/21 10:29	0	1		0.44629	1		AValle	1.44	-	-	0	9.52	1
21NHK00819	CCV1	0.517		mg/L	10	ml	11/18/21 14:27	10	640NM	0.144	A 11/19/21 10:29	0	1		0.516629	1		AValle						
21NHK00820	CCB1	ND		mg/L	10	ml	11/18/21 14:27	10	640NM	0.002	A 11/19/21 10:29	0	1		-0.00906	1		AValle						

Reviewed by: AV
Date: 11/19/21

LAB QC CHECK

DataFileID	LabSampleID	Result	Expected Value	QC Result
21NHK00811	NHK008WB	ND	ND	MB Passed
21NHK00812	NHK008WL	0.491	0.5	%R=98
21NHK00813	NHK008WC	0.435	0.5	%R=87

MS CHECK

DataFileID	LabSampleID	Result	Expected Value	QC Result
21NHK00815	K137-02	ND	0	RPD=8
21NHK00817	K137-02M	0.483	0.5	%R=97
21NHK00818	K137-02S	0.446	0.5	%R=89

DUP CHECK

DataFileID	LabSampleID	Result	Expected Value	RPD
21NHK00815	K137-02	ND		
21NHK00816	K137-02D	ND	ND	0.0

Reviewed by: AV
Date: 11/19/21

EMAX
LABORATORIES, INC.
3051 Fujita Street
Torrance, CA 90505
Tel: (310)-618-8889

Date: 01-05-2022
EMAX Batch No.: 21L159

Attn: Laura Madsen

ARCADIS
1410 Rocly Ridge Dr #330
Roseville CA 95661

Subject: Laboratory Report
Project: PG&E TOPOCK-GMP

Enclosed is the Laboratory report for samples received on 12/15/21.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW-55-045-Q421	L159-01	12/14/21	WATER	CHROMIUM HEXAVALENT BY IC
				DISSOLVED METALS BY ICP-MS
MW-55-045-EB-Q421	L159-02	12/14/21	WATER	CHROMIUM HEXAVALENT BY IC
MW-55-120-Q421	L159-03	12/14/21	WATER	CHROMIUM HEXAVALENT BY IC
				DISSOLVED METALS BY ICP-MS
MW-922-Q421	L159-04	12/14/21	WATER	CHROMIUM HEXAVALENT BY IC
				DISSOLVED METALS BY ICP-MS

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912021-19
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

EMAX LABORATORIES, INC.

Contact us:
3051 Fujita St, Torrance, CA 90505
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

CHAIN OF CUSTODY RECORD

21L159

Page 1 of 1

| | | |

Type of Delivery	Airbill / Tracking Number	ECN 21L159
☑ Fedex ☐ UPS ☐ GSO ☐ Others	775491613801, 775491614110	Recipient Jocelyne Solis-Ramos
☐ EMAX Courier ☐ Client Delivery		Date 12/15/21 Time 10:00

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☑ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☑ Other plastic bags		
Condition	☐ Custody Seal	☐ Intact	☐ Damaged		
Packaging	☐ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 4.7 °C	☑ Cooler 2 0.5 °C	☐ Cooler 3 _____ °C	☐ Cooler 4 _____ °C	☐ Cooler 5 _____ °C
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C
Thermometer:	*A - S/N* ~~210191066~~ @ 14/14	(B) *S/N* 210271396	*C - S/N* 210271399	*D - S/N* _____	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1-8,10-12,14-23,9,13,24		D12	received 125mL poly for E218.6	ok
JSR 12/15 6~~8~~-8,10-12,14,16,18,20-23	11,14,17,21,24,27,31,35,	D17	containers for Nitrate/Nitrite are	R2
	39,43,46,49,52-54	D10	unpreserved - stated on label as pH<2 w/ H_2SO_4 on COC.	R2
9	20	D1		R1

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. JSR 12/15

NOTES/OBSERVATIONS: samples 9,13,15, and 24 containers for E218.6 are not stated as ~~fett~~ field-filtered on label, but stated on COC.

LEGEND:

☐ Continue to next page.

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
(D1)	Analysis is not indicated in label	D13	Out of Holding Time	R1	Proceed as indicated in ☑ COC ☐ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in _____	D16	Preservation not indicated in _____	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	(D17)	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	Date/Time is not indicated in _____	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
D7	Date/Time mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	_____
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	_____
(D10)	No initial/date on corrections in COC/label	D22	_____	R10	_____
D11	Container count mismatch COC vs received	D23	_____	R11	_____
(D12)	Container size mismatch COC vs received	D24	_____	R12	_____

REVIEWS:

Sample Labeling Jocelyne Solis-Ramos — Date 12/15/21 12/15/21

SRF _____ Date 12/15/21

PM AM Date 12/15/21

Andy Mai

From: Andy Mai
Sent: Wednesday, December 15, 2021 10:47 AM
To: 'Madsen, Laura'
Cc: Cecilia Chavez; Raman Singh; Tyler Kosaka
Subject: RE: FedEx Shipment 775491613801: Some of your packages are scheduled for delivery tomorrow

Hi Laura,

The bottles received are unpreserved. We will run the samples for Nitrate by 300.

Thanks,
New Address Below

Andy Mai, PMP
EMAX Laboratories, Inc.
3051 Fujita St
Torrance, CA 90505
Tel: 310-618-8889 ext. 117
AMai@emaxlabs.com

EMAX is interested in your feedback; please provide your comments to: customerservice@emaxlabs.com

Note:
EMAX will be closed for the following holidays. Please contact me in advance if you will have short hold samples including BOD.

Christmas:
12/23 to 12/27

New Year:
12/31 to 01/02

From: Madsen, Laura [mailto:Laura.Madsen@arcadis.com]
Sent: Wednesday, December 15, 2021 7:24 AM
To: Andy Mai
Cc: Cecilia Chavez; Raman Singh; Tyler Kosaka
Subject: RE: FedEx Shipment 775491613801: Some of your packages are scheduled for delivery tomorrow

What bottles did they send you? We have some other wells onsite that require nitrate/nitrite. Nitrate by 300 is preferred. Do you have unpreserved sampled to report nitrate by 300?

From: Andy Mai <AMai@emaxlabs.com>
Sent: Tuesday, December 14, 2021 7:21 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: Cecilia Chavez <CChavez@emaxlabs.com>; Raman Singh <RSingh@emaxlabs.com>; Tyler Kosaka <TKosaka@emaxlabs.com>
Subject: RE: FedEx Shipment 775491613801: Some of your packages are scheduled for delivery tomorrow

Hi Laura,

Can you please confirm if Nitrate/Nitrite is needed? I don't recall providing H2SO4 bottles for the analysis.

	x	x	x	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4	125 mL poly

Also, do you know if any Nitrate samples by 300 are expected?

Thanks,
New Address Below

Andy Mai, PMP
EMAX Laboratories, Inc.
3051 Fujita St
Torrance, CA 90505
Tel: 310-618-8889 ext. 117
AMai@emaxlabs.com

EMAX is interested in your feedback; please provide your comments to: customerservice@emaxlabs.com

Note:
EMAX will be closed for the following holidays. Please contact me in advance if you will have short hold samples including BOD.

Christmas:
12/23 to 12/27

New Year:
12/31 to 01/02

From: Madsen, Laura [mailto:Laura.Madsen@arcadis.com]
Sent: Tuesday, December 14, 2021 3:53 PM
To: Andy Mai
Cc: Cecilia Chavez; Raman Singh; Tyler Kosaka
Subject: RE: FedEx Shipment 775491613801: Some of your packages are scheduled for delivery tomorrow

I don't have signed copies yet, but here are the templates. Samples for wells MW-55 and MW-56 need to be logged in as separate SDGs so we don't have to split up reports later for reporting to the private owners.

Thanks!

From: Andy Mai <AMai@emaxlabs.com>
Sent: Tuesday, December 14, 2021 5:22 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: Cecilia Chavez <CChavez@emaxlabs.com>; Raman Singh <RSingh@emaxlabs.com>; Tyler Kosaka <TKosaka@emaxlabs.com>
Subject: RE: FedEx Shipment 775491613801: Some of your packages are scheduled for delivery tomorrow

Thanks Laura! Do you have a copy of the COCs by any chance?

New Address Below

Andy Mai, PMP
EMAX Laboratories, Inc.
3051 Fujita St
Torrance, CA 90505
Tel: 310-618-8889 ext. 117

AMai@emaxlabs.com

EMAX is interested in your feedback; please provide your comments to: customerservice@emaxlabs.com

Note:
EMAX will be closed for the following holidays. Please contact me in advance if you will have short hold samples including BOD.

Christmas:
12/23 to 12/27

New Year:
12/31 to 01/02

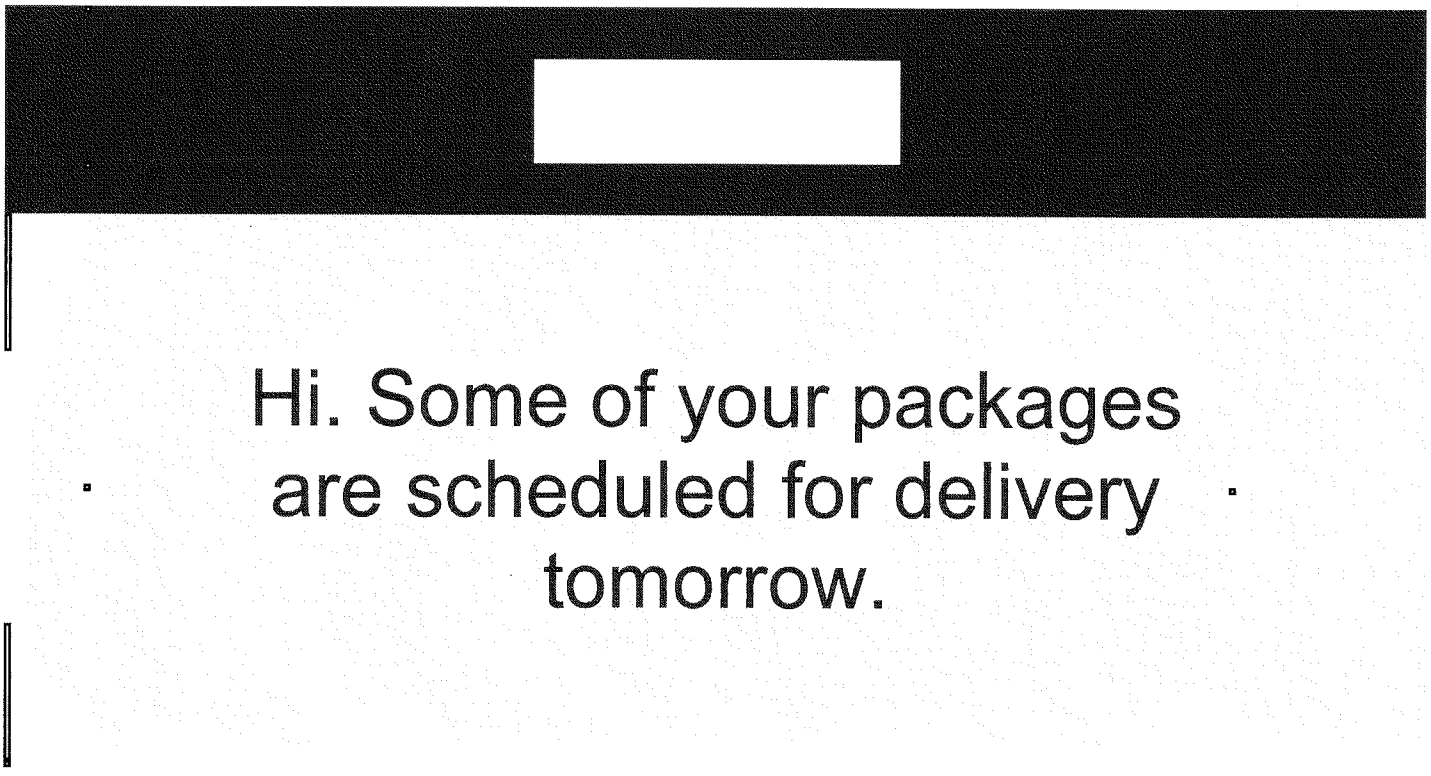
From: Madsen, Laura [mailto:Laura.Madsen@arcadis.com]
Sent: Tuesday, December 14, 2021 3:21 PM
To: Andy Mai
Subject: Fwd: FedEx Shipment 775491613801: Some of your packages are scheduled for delivery tomorrow

Hi Andy
Here is the tracking for the sample tomorrow.

Thanks
Laura

Get Outlook for iOS

From: TrackingUpdates@fedex.com <TrackingUpdates@fedex.com>
Sent: Tuesday, December 14, 2021 4:34:13 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Subject: FedEx Shipment 775491613801: Some of your packages are scheduled for delivery tomorrow



SCHEDULED DELIVERY

Wed, 12/15/2021
before 11:30am

Associated Shipments

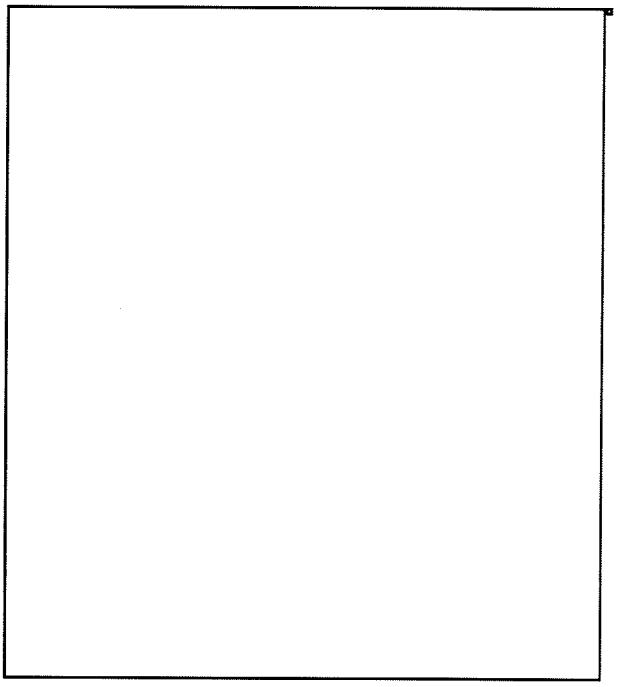
SCHEDULED DELIVERY

Wed, 12/15/2021
before 11:30am

TRACKING ID	STATUS
775491614110	☐ Picked up LAKE HAVASU CITY, AZ
775491613801	☐ Picked up LAKE HAVASU CITY, AZ

MASTER TRACKING NUMBER	775491613801
FROM	ARCADIS U.S., Inc. 8725 Rosehill Road Suite 350 Lenexa, KS, US, 66215
TO	EMAX Labs Receiving 3051 Fujita St TORRANCE, CA, US, 90505
REFERENCE	30110373.4Q21GW
SHIPPER REFERENCE	30110373.4Q21GW
SHIP DATE	Tue 12/14/2021 02:29 PM
PACKAGING TYPE	Your Packaging
ORIGIN	Lenexa, KS, US, 66215

DESTINATION	TORRANCE, CA, US, 90505
STANDARD TRANSIT	Wed, 12/15/2021 by 11:30am
NUMBER OF PIECES	2
TOTAL SHIPMENT WEIGHT	90.00 LB
SERVICE TYPE	FedEx Priority Overnight



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ARCADIS KANSAS CITY
ARCADIS U.S., INC.
8725 ROSEHILL ROAD
SUITE 350
LENEXA, KS 66215
UNITED STATES US

SHIP DATE: 14DEC21
ACTWGT: 45.00 LB
CAD: 4502286/INET4400
DIMS: 34x22x22 IN

BILL SENDER

TO **RECEIVING**
EMAX LABS
3051 FUJITA ST
TORRANCE CA 90505
(310) 618-8889

INV:
PO:
DEPT:

REF: 301103734021GW

56DJ3/E934/FE4A

J212221101801uv

FedEx Express

1 of 2

TRK# 0201 **7754 9161 3801**

MASTER

XW HHRA

CA-US **LAX**

90505

WED - 15 DEC 11:30A

PRIORITY OVERNIGHT

D 47
B

After printing this label:
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2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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ARCADIS KANSAS CITY
ARCADIS U.S., INC.
8725 ROSEHILL ROAD
SUITE 350
LENEXA, KS 66215
UNITED STATES US

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REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

ARCADIS

PG&E TOPOCK-GMP

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

SDG#: 21L159

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21L159

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

A total of three(3) water samples were received on 12/15/21 to be analyzed for Dissolved Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were satisfied.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. IML016WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. IML016WL/IML016WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

L159-03 and L159-04 were reported from dilution due to suspected matrix exhibited by high Sodium concentration.

LAB CHRONICLE
DISSOLVED METALS BY ICP-MS

Client : ARCADIS
Project : PG&E TOPOCK-GMP

SDG NO. : 21L159
Instrument ID : H6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IML016WB	1	NA	12/20/2112:06	12/15/2114:33	H6L18058	H6L18056	IML016W	Method Blank
LCS1W	IML016WL	1	NA	12/20/2112:08	12/15/2114:33	H6L18059	H6L18056	IML016W	Lab Control Sample (LCS)
LCD1W	IML016WC	1	NA	12/20/2112:11	12/15/2114:33	H6L18060	H6L18056	IML016W	LCS Duplicate
MW-55-120-Q421	L159-03I	10	NA	12/20/2112:16	12/15/2114:33	H6L18062	H6L18056	IML016W	Diluted Sample
MW-922-Q421	L159-04I	10	NA	12/20/2112:19	12/15/2114:33	H6L18063	H6L18056	IML016W	Diluted Sample
MW-55-045-Q421	L159-01	1	NA	12/20/2113:24	12/15/2114:33	H6L18088	H6L18086	IML016W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	12/14/21 07:56
Project	: PG&E TOPOCK-GMP	Date Received:	12/15/21
SDG NO.	: 21L159	Date Extracted:	12/15/21 14:33
Sample ID:	MW-55-045-Q421	Date Analyzed:	12/20/21 13:24
Lab Samp ID:	L159-01	Dilution Factor:	1
Lab File ID:	H6L18088	Matrix:	WATER
Ext Btch ID:	IML016W	% Moisture:	NA
Calib. Ref.:	H6L18086	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	6.35	1.00	0.250
Chromium	ND	1.00	0.250
Manganese	625	10.0	0.500

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	12/14/21 07:20
Project	: PG&E TOPOCK-GMP	Date Received:	12/15/21
SDG NO.	: 21L159	Date Extracted:	12/15/21 14:33
Sample ID:	MW-55-120-Q421	Date Analyzed:	12/20/21 12:16
Lab Samp ID:	L159-03I	Dilution Factor:	10
Lab File ID:	H6L18062	Matrix:	WATER
Ext Btch ID:	IML016W	% Moisture:	NA
Calib. Ref.:	H6L18056	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	10.0	2.50
Chromium	ND	10.0	2.50
Manganese	ND	100	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	12/14/21 07:30
Project	: PG&E TOPOCK-GMP	Date Received:	12/15/21
SDG NO.	: 21L159	Date Extracted:	12/15/21 14:33
Sample ID:	MW-922-Q421	Date Analyzed:	12/20/21 12:19
Lab Samp ID:	L159-04I	Dilution Factor:	10
Lab File ID:	H6L18063	Matrix:	WATER
Ext Btch ID:	IML016W	% Moisture:	NA
Calib. Ref.:	H6L18056	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	10.0	2.50
Chromium	ND	10.0	2.50
Manganese	ND	100	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	NA
Project	: PG&E TOPOCK-GMP	Date Received:	NA
SDG NO.	: 21L159	Date Extracted:	12/15/21 14:33
Sample ID:	MBLK1W	Date Analyzed:	12/20/21 12:06
Lab Samp ID:	IML016WB	Dilution Factor:	1
Lab File ID:	H6L18058	Matrix:	WATER
Ext Btch ID:	IML016W	% Moisture:	NA
Calib. Ref.:	H6L18056	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	1.00	0.250
Chromium	ND	1.00	0.250
Manganese	ND	10.0	0.500

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21L159
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IML016WB	IML016WL	IML016WC
LAB FILE ID	: H6L18058	H6L18059	H6L18060
DATE PREPARED	: 12/15/21 14:33	12/15/21 14:33	12/15/21 14:33
DATE ANALYZED	: 12/20/21 12:06	12/20/21 12:08	12/20/21 12:11
PREP BATCH	: IML016W	IML016W	IML016W
CALIBRATION REF	: H6L18056	H6L18056	H6L18056

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Arsenic	ND	30	30.2	101	30	29.9	100	1	85-115	20
Chromium	ND	30	31.3	104	30	31.3	104	0	85-115	20
Manganese	ND	30	29.5	98	30	30.4	101	3	85-115	20

ICP-MS QC CHECK TABLE

QC	HIGH STD	ICV	CCV	ICSAB	ICSA
Limit%		90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	3000	25000	100000	100000
Sb	100	60	50	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	300	25	20	0
B	100	300	50	20	0
Cd	500	300	250	20	0
Ca	50000	3000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	300	25000	100000	100000
Pb	500	300	250	20	0
Mg	50000	3000	25000	100000	100000
Mn	3000	300	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
K	50000	3000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	2000	0
Ag	50	30	25	20	0
Na	50000	3000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0
Li	50	30	25	20	0

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 12|20|21 09:31

End Date: 12|20|21 13:55

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

L174
10X: 0.5mL → 5mL

L179
10X: 0.5mL → 5mL
50X: 0.1mL → 5mL

L159
10X: 0.5mL → 5mL

Book #: AH6-010
Instrument No.: H6
Analytical Batch: 1H6L18
Analytical Sequence: H6L18
Method File: EM6020
Micropipette ID: ☐ 142781004
Micropipette ID: ☑ ICP-06
Micropipette ID: ☑ 339362028
Micropipette ID: ☑ GFAA-07
Micropipette ID: ☐ 339342032
Micropipette ID: ☑ A42780077
Micropipette ID: ☐ 542761827
Micropipette ID: ☐

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B-24-13-02	MRL1 (1)	SM6B-24-10-01
S1	14-01	MRL2 (0.4)	12-02
S2	14-02	MRL3 (LLR)	13-01
S3	15-01	MRL4	NA
S4	15-02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SM6B-24-16-02
S7	↓	Post-Spike 1	SM6A-007-07-22
ICV	SM6B-24-01-01	Post-Spike 2	07-23
CCV	16-01	Post-Spike 3	NA
ICSA	11-02	Post-Spike 4	↓
ICSAB	12-01		
6020 TUNE SOLN.	SM6B-22-66-02		
200.8 TUNE SOLN.	66-02		

Analyzed By: LY

Date: 12|20|21

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 21L159
Method : METHOD SW6020A
Sequence : IH6L18
InstrumentID: H6

Lab Samp ID :	ICV	ICSA	ICSAB
QC Limit :	%R:90-110/RSD:<5	%R:80-120/<LOD	%R:80-120
Lab File ID :	H6L18008	H6L18012	H6L18013
DateAnalyed :	12/20/2109:45	12/20/2109:58	12/20/2110:01

Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		30.60	30	1.4	102	0.33456	0	>0	20.604	20	103
Beryllium		30.72	30	2.5	102	0.0050442	0	<0.1	20.971	20	105
Boron		30.12	30	2.5	100	0.69408	0	<5.0	19.638	20	98
Sodium		32420	30000	1.2	108	107280	100000	107	107540	100000	108
Magnesium		31870	30000	1.6	106	102140	100000	102	102850	100000	103
Aluminum		31690	30000	1.0	106	102120	100000	102	103280	100000	103
Silicon		3351	3000	1.3	112*	2.9928	0	<20	218.40	200	109
Phosphorus		302.0	300	1.9	101	100450	100000	100	101980	100000	102
Potassium		32740	30000	0.6	109	106720	100000	107	109060	100000	109
Calcium		32230	30000	2.2	107	106320	100000	106	106450	100000	106
Titanium		297.0	300	0.8	99	2096.8	2000	105	2132.4	2000	107
Vanadium		309.1	300	0.3	103	0.17099	0	<0.5	20.697	20	103
Chromium	T	315.6	300	0.3	105	2.1560	0	>0.25	23.247	20	116
Manganese	T	2043	2000	2.6	102	0.28328	0	<0.5	20.432	20	102
Iron		32370	30000	0.4	108	106470	100000	106	107540	100000	108
Cobalt		309.0	300	2.1	103	0.15085	0	<0.2	20.597	20	103
Nickel		313.4	300	0.9	104	0.11989	0	<0.2	20.991	20	105
Copper		318.3	300	0.6	106	0.17108	0	<0.5	21.301	20	107
Zinc		326.3	300	2.5	109	1.8382	0	<10	22.385	20	112
Arsenic	T	305.8	300	1.1	102	0.0062643	0	<0.25	20.857	20	104
Selenium		313.1	300	0.4	104	0.28117	0	<0.3	21.634	20	108
Strontium		309.2	300	2.0	103	1.1272	0	>1.0	21.593	20	108
Zirconium		32.77	30	2.2	109	0.23691	0	<2.0	11.193	20	56*
Molybdenum		303.8	300	0.6	101	2128.6	2000	106	2152.8	2000	108
Silver		31.01	30	1.4	103	0.29977	0	>0.2	20.157	20	101
Cadmium		326.7	300	1.4	109	0.092196	0	<0.2	20.029	20	100
Tin		307.6	300	0.9	103	0.052752	0	<0.2	20.279	20	101
Antimony		59.86	60	1.0	100	0.055374	0	<0.5	20.002	20	100
Barium		308.5	300	0.9	103	0.34083	0	<0.5	20.949	20	105
Tungsten		31.99	30	1.8	107	0.18315	0	<1.0	20.439	20	102
Mercury		2.805	3	2.1	93	0.0033905	0	<0.1	2.1151	2	106
Thallium		307.3	300	3.4	102	0.035500	0	<0.2	19.855	20	99
Lead		310.4	300	1.7	103	0.071796	0	<0.1	20.247	20	101
Uranium		302.9	300	3.2	101	0.018744	0	<0.1	20.115	20	101

Unit: ug/L
T: Target analyte
EV: Expected Value
Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 21L159
Method : METHOD SW6020A
Sequence : IH6L18
Instrument ID: H6

		CCV SampleID	CCV5			CCV6			CCV8			CCV9		
		CCV DataFileID	H6L18056			H6L18068			H6L18086			H6L18095		
		CCV DateTime	12/20/21 12:01			12/20/21 12:32			12/20/21 13:18			12/20/21 13:42		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	23.8	95	3.3	23.2	93	1.8	23.0	92	2.4	23.6	94	1.7
Beryllium		25	25.0	100	2.3	24.1	96	0.5	22.9	92	1.8	23.4	94	2.7
Boron		50	47.3	95	3.7	50.4	101	1.4	49.2	98	2.0	50.7	101	2.0
Sodium		25000	24600	98	0.8	25000	100	0.3	25600	102	1.2	25500	102	1.2
Magnesium		25000	23900	95	2.0	25100	100	0.5	25800	103	1.2	25300	101	1.0
Aluminum		25000	23500	94	2.2	24700	99	1.3	24900	100	2.5	24700	99	2.9
Silicon		2500	2380	95	1.1	2450	98	0.6	2530	101	0.5	2470	99	2.5
Phosphorus		250	237	95	1.5	249	100	0.3	252	101	1.3	251	100	1.0
Potassium		25000	24900	99	2.6	25100	100	0.8	25200	101	1.4	25200	101	0.7
Calcium		25000	23900	96	0.8	24400	97	0.5	24800	99	0.6	24500	98	0.9
Titanium		250	235	94	1.2	239	96	1.1	238	95	2.0	236	94	1.0
Vanadium		250	251	101	2.7	251	100	0.9	252	101	1.2	249	100	0.8
Chromium	T	250	254	102	3.7	252	101	0.2	255	102	2.0	250	100	1.3
Manganese	T	1500	1450	97	1.4	1490	99	1.4	1460	97	2.3	1460	97	2.1
Iron		25000	24400	98	1.0	24600	98	0.8	25100	100	0.9	24800	99	1.9
Cobalt		250	243	97	1.3	247	99	1.3	244	98	1.4	243	97	2.1
Nickel		250	254	102	3.8	250	100	1.0	252	101	2.1	249	100	1.2
Copper		250	259	104	3.1	254	102	0.5	257	103	1.8	253	101	0.8
Zinc		250	236	95	2.0	242	97	0.8	239	96	2.0	238	95	0.9
Arsenic	T	250	247	99	1.4	246	98	0.7	247	99	0.5	245	98	0.2
Selenium		250	249	100	1.3	247	99	1.0	250	100	0.7	250	100	0.3
Strontium		250	242	97	2.0	246	98	0.6	244	98	2.6	243	97	2.0
Zirconium		25	23.6	95	1.2	23.8	95	1.5	23.8	95	2.9	23.4	94	2.8
Molybdenum		250	239	95	1.9	241	96	0.3	242	97	1.6	239	96	1.1
Silver		25	23.8	95	0.9	24.1	96	0.8	23.9	96	0.5	23.8	95	1.0
Cadmium		250	237	95	0.7	239	95	0.2	237	95	0.7	237	95	0.6
Tin		250	239	96	0.4	244	98	0.7	244	97	1.2	244	98	0.2
Antimony		50	46.7	93	2.4	47.5	95	0.7	47.0	94	0.9	47.6	95	1.0
Barium		500	480	96	1.7	484	97	0.7	491	98	0.8	489	98	1.6
Tungsten		25	23.1	92	0.7	23.6	95	0.8	23.2	93	0.4	24.3	97	1.1
Mercury		2.5	2.28	91	0.2	2.36	94	2.4	2.32	93	0.9	2.34	94	1.9
Thallium		250	240	96	1.6	247	99	1.2	244	98	1.0	245	98	0.8
Lead		250	241	96	1.7	249	99	1.9	244	98	0.6	247	99	1.4
Uranium		250	235	94	0.7	241	97	2.3	237	95	0.8	242	97	0.4

Unit: ug/L
T: Target analyte
%Rec QC Limit: 90-110
RSD QC Limit: <5
CCV EV: CCV Expected Value ug/L
Comment:

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 21L159
Method : SW6020A
Sequence : IH6L18
Instrument ID: H6

CB SampleID			: ICB		CCB5		CCB6		CCB8		CCB9	
CB DataFileID			: H6L18009		H6L18057		H6L18069		H6L18087		H6L18096	
CB DateTime			: 12/20/2109:48		12/20/2112:03		12/20/2112:34		12/20/2113:21		12/20/2113:44	
PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.1	>0	0.1	>0	0.3	>0	0.08	>0	0.2	>0
Beryllium		0.1	0.010	<0.1	0.006	<0.1	0.02	<0.1	0.02	<0.1	0.02	<0.1
Boron		5.0	0.4	<5.0	0.2	<5.0	2	<5.0	3	<5.0	4	<5.0
Sodium		50	1	<50	5	<50	20	<50	200	>50	200	>50
Magnesium		10	5	<10	1	<10	1	<10	3	<10	2	<10
Aluminum		20	5	<20	2	<20	1	<20	3	<20	3	<20
Silicon		20	2	<20	0.2	<20	0.2	<20	0.4	<20	2	<20
Phosphorus		25	1	<25	3	<25	5	<25	6	<25	6	<25
Potassium		20	6	<20	3	<20	6	<20	10	<20	10	<20
Calcium		25	1	<25	4	<25	4	<25	2	<25	1	<25
Titanium		0.5	0.06	<0.5	0.03	<0.5	0.006	<0.5	0.04	<0.5	0.03	<0.5
Vanadium		0.5	0.06	<0.5	0.03	<0.5	0.05	<0.5	0.1	<0.5	0.04	<0.5
Chromium	T	0.25	0.01	<0.25	0.06	<0.25	0.06	<0.25	0.05	<0.25	0.04	<0.25
Manganese	T	0.5	0.3	<0.5	0.1	<0.5	0.04	<0.5	0.2	<0.5	0.2	<0.5
Iron		10	2	<10	1.0	<10	1	<10	0.6	<10	1	<10
Cobalt		0.2	0.05	<0.2	0.02	<0.2	0.009	<0.2	0.03	<0.2	0.03	<0.2
Nickel		0.2	0.005	<0.2	0.03	<0.2	0.05	<0.2	0.03	<0.2	0.03	<0.2
Copper		0.5	0.06	<0.5	0.1	<0.5	0.1	<0.5	0.06	<0.5	0.07	<0.5
Zinc		10	0.08	<10	0.05	<10	0.006	<10	0.04	<10	0.03	<10
Arsenic	T	0.25	0.03	<0.25	0.02	<0.25	0.01	<0.25	0.02	<0.25	0.02	<0.25
Selenium		0.3	0.07	<0.3	0.02	<0.3	0.02	<0.3	0.02	<0.3	0.03	<0.3
Strontium		1.0	0.04	<1.0	0.008	<1.0	0.04	<1.0	0.006	<1.0	0.003	<1.0
Zirconium		2.0	0.002	<2.0	0.0001	<2.0	0.005	<2.0	0.001	<2.0	0.001	<2.0
Molybdenum		0.5	0.06	<0.5	0.03	<0.5	0.00007	<0.5	0.04	<0.5	0.03	<0.5
Silver		0.2	0.004	<0.2	0.003	<0.2	0.002	<0.2	0.008	<0.2	0.007	<0.2
Cadmium		0.2	0.1	<0.2	0.06	<0.2	0.03	<0.2	0.04	<0.2	0.03	<0.2
Tin		0.2	0.1	<0.2	0.02	<0.2	0.004	<0.2	0.04	<0.2	0.02	<0.2
Antimony		0.5	0.01	<0.5	0.008	<0.5	0.0009	<0.5	0.009	<0.5	0.006	<0.5
Barium		0.5	0.03	<0.5	0.02	<0.5	0.04	<0.5	0.04	<0.5	0.04	<0.5
Tungsten		1.0	0.03	<1.0	0.02	<1.0	0.008	<1.0	0.01	<1.0	0.09	<1.0
Mercury		0.1	0.02	<0.1	0.01	<0.1	0.007	<0.1	0.01	<0.1	0.01	<0.1
Thallium		0.2	0.2	<0.2	0.04	<0.2	0.00001	<0.2	0.03	<0.2	0.02	<0.2
Lead		0.1	0.08	<0.1	0.01	<0.1	0.03	<0.1	0.05	<0.1	0.04	<0.1
Uranium		0.1	0.05	<0.1	0.02	<0.1	0.004	<0.1	0.03	<0.1	0.03	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

Sample List

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b

Block List

Acquisition Order

Sequence Order	Block Name
1	Calibration Standards
2	Unknown Samples

Blocks

Calibration Standards

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		CalBlk	BLANK		1101	H6L18001.d		1	
2		CalBlk	BLANK		1101	H6L18002.d		1	
3		CalBlk	S0		1102	H6L18003.d		1	
4		CalStd	S1		1104	H6L18004.d		2	
5		CalStd	S2		1105	H6L18005.d		3	
6		CalStd	S3		1106	H6L18006.d		4	
7		CalStd	S4		1107	H6L18007.d		5	
8		ICV	ICV		1204	H6L18008.d			1
9		ICB	ICB		1102	H6L18009.d			1
10		LLCCV	MRLL2001 ✓	1/100/10 ppb	1306	H6L18010.d			1
11		LLCCV2	MRLL2002	0.4/40/4 ppb	1307	H6L18011.d			1
12		ICS-A	ICSA		1304	H6L18012.d			1
13		ICSB	ICSAB		1305	H6L18013.d			1
14		Sample	MRLL2003	500 ppb CAT	1207	H6L18014.d			1
15		CCV	CCV1		1206	H6L18015.d			1
16		CCB	CCB1		1102	H6L18016.d			1

Unknown Samples

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		Blank	L216-01		2101	H6L18017.d			1
2		Blank	IML022WB		2102	H6L18018.d			1
3		LCSW	IML022WL		2103	H6L18019.d			1
4		LCSW	IML022WC		2104	H6L18020.d			1
5		Sample	L174-05		2105	H6L18021.d			1
6		Sample	L174-15		2106	H6L18022.d			1
7		Sample	L179-10		2107	H6L18023.d			1
8		Blank	HNO3		3101	H6L18024.d			1
9		Blank	HCl		3102	H6L18025.d			1
10		CCV	CCV2		1206	H6L18026.d			1
11		CCB	CCB2		1102	H6L18027.d			1
12		Sample	L174-02	Ng Cg ↑	2108	H6L18028.d			1
13		Sample	L174-03	↓	2109	H6L18029.d			1
14		Sample	L174-11		2110	H6L18030.d			1
15		Sample	L174-02I		2111	H6L18031.d			10
16		Sample	L174-03I		2112	H6L18032.d			10
17		Sample	L174-11I		2201	H6L18033.d			10
18		CCV	CCV3		1206	H6L18034.d			1
19		CCB	CCB3		1102	H6L18035.d			1
20		Sample	L179-01I		2202	H6L18036.d			10

Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
21		Sample	L179-02I		2203	H6L18037.d			10
22		Sample	L179-03M	mn 2n f	2204	H6L18038.d			10
23		Sample	L179-03S		2205	H6L18039.d			10
24		Sample	L179-03A		2206	H6L18040.d			10
25		Sample	L179-03I		2207	H6L18041.d			10
26		Sample	L179-03J		2208	H6L18042.d			50
27		Sample	L179-04I		2209	H6L18043.d			10
28		Sample	L179-05I		2210	H6L18044.d			10
29		Sample	L179-06I		2211	H6L18045.d			10
30		CCV	CCV4		1206	H6L18046.d			1
31		CCB	CCB4		1102	H6L18047.d			1
32		Sample	L179-07I		2212	H6L18048.d			10
33		Sample	L179-08I		2301	H6L18049.d			10
34		Sample	L179-09I		2302	H6L18050.d			10
35		Sample	L179-03M		2303	H6L18051.d			50
36		Sample	L179-03S		2304	H6L18052.d			50
37		Sample	L179-03A		2305	H6L18053.d			50
38		Sample	L179-03K		2306	H6L18054.d			50
39		Sample	L179-03J		2307	H6L18055.d			250
40		CCV	CCV5		1206	H6L18056.d			1
41		CCB	CCB5		1102	H6L18057.d			1
42		Blank	IML016WB		2308	H6L18058.d			1
43		LCSW	IML016WL		2309	H6L18059.d			1
44		LCSW	IML016WC		2310	H6L18060.d			1
45		Sample	L159-01I	ok@1x	2311	H6L18061.d			10
46		Sample	L159-03I		2312	H6L18062.d			10
47		Sample	L159-04I		2401	H6L18063.d			10
48		Sample	L159-05I	ok@1x	2402	H6L18064.d			10
49		Sample	L159-06I		2403	H6L18065.d			10
50		Sample	L159-07I		2404	H6L18066.d			10
51		Sample	L159-08I		2405	H6L18067.d			10
52		CCV	CCV6		1206	H6L18068.d			1
53		CCB	CCB6		1102	H6L18069.d			1
54		Sample	L159-10I		2406	H6L18070.d			10
55		Sample	L159-11I		2407	H6L18071.d			10
56		Sample	L159-12I		2408	H6L18072.d			10
57		Sample	L159-14I		2409	H6L18073.d			10
58		Sample	L159-16I		2410	H6L18074.d			10
59		Sample	L159-18I		2411	H6L18075.d			10
60		Sample	L159-20I	ok@1x	2412	H6L18076.d			10
61		Sample	L159-21I		2501	H6L18077.d			10
62		Sample	L159-22I		2502	H6L18078.d			10
63		CCV	CCV7		1206	H6L18079.d			1
64		CCB	CCB7		1102	H6L18080.d			1
65		Sample	L159-23M		2503	H6L18081.d			10
66		Sample	L159-23S		2504	H6L18082.d			10
67		Sample	L159-23A		2505	H6L18083.d			10
68		Sample	L159-23I		2506	H6L18084.d			10
69		Sample	L159-23J		2507	H6L18085.d			50
70		CCV	CCV8		1206	H6L18086.d			1
71		CCB	CCB8		1102	H6L18087.d			1
72		Sample	L159-01		2508	H6L18088.d			1

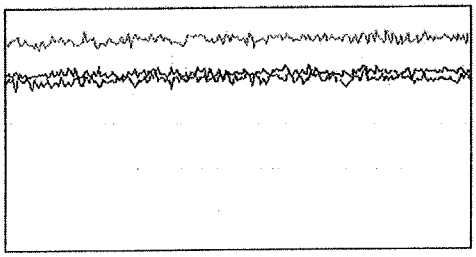
Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
73		Sample	L159-05		2509	H6L18089.d			1
74		Sample	L159-06		2510	H6L18090.d			1
75		Sample	L159-07		2511	H6L18091.d			1
76		Sample	L159-20		2512	H6L18092.d			1
77		Sample	L174-05	UNDIG	3101	H6L18093.d			1
78		Sample	L174-15	UNDIG	3102	H6L18094.d			1
79		CCV	CCV9		1206	H6L18095.d			1
80		CCB	CCB9		1102	H6L18096.d			1
81		LLCCV	MRLL2004 ✓	1/100/10 ppb	1306	H6L18097.d			1
82		LLCCV2	MRLL2005	0.4/40/4 ppb	1307	H6L18098.d			1
83		ICS-A	ICSA2		1304	H6L18099.d			1
84		ICSB	ICSAB2		1305	H6L18100.d			1

Performance Report

Operator Name	LYaman
Acq. Date-Time	2021-12-20 08:47:57
Instrument Name	G8421A SG19253823
Sample Introduction	ISIS
Nebulizer Type	MicroMist
Ion Lens Model	x-Lens
Tune Parameters	Standard Tune

Sensitivity



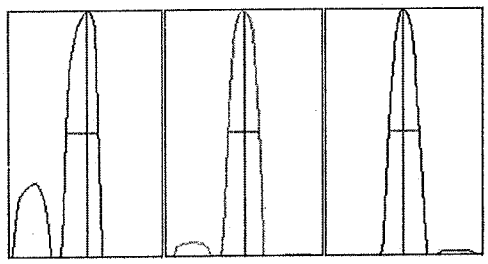
Mass	Range	Count	RSD%	Background
7	5000	3523	2.150	0.150
89	20000	17432	1.642	0.300
205	20000	14647	1.629	1.300

Sampling Period [sec]	0.311
Integration Time [sec]	0.1

Oxide/Doubly Charged Ratio

Oxide	156 / 140 1.131 %
Doubly Charged	70 / 140 1.310 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
7	3496.45	7.05	0.64	0.76
89	17444.73	89.05	0.60	0.74
205	14471.17	205.00	0.60	0.79

Integration Time [sec]	0.1
Acquisition Time [sec]	22.74

Tune Parameters

Plasma Parameters

RF Power	1550 W	Option Gas	---	Makeup Gas	0.00 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Auxiliary Gas	0.90 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C	Plasma Gas	15.0 L/min
Nebulizer Gas	1.07 L/min				

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.0 V	Deflect	12.4 V
Extract 2	-150.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-70 V	Cell Exit	-50 V		

Performance Report

Cell Parameters					
Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		
QP Parameters					
QP Bias	-3.0 V				
Hardware Settings					
Torch					
Torch H	0.5 mm	Torch H (Hot)	---	Torch H (Cool)	---
Torch V	-0.2 mm	Torch V (Hot)	---	Torch V (Cool)	---
Plasma Correction					
Nebulizer Gas Offset	0.02 L/min	Makeup Gas (Hot)	---	Makeup Gas (Cool)	---
		Sample Depth (Hot)	---		
Resolution/Axis					
Mass Gain	122	Axis Gain	0.9991		
Mass Offset	126	Axis Offset	0.04		
EM					
Discriminator	3.6 mV	Analog HV	2119 V	Pulse HV	969 V

Performance Report

Meter

Name	Value	Unit
Nebulizer Gas	1.07	L/min
MU./Dil. Gas	0.00	L/min
Plasma Gas	15.00	L/min
Aux Gas	0.90	L/min
Ar Gas Tank Press	7.46E+2	kPa
+5V (Press Gage)	5.0	V
Ar AMFC Temp	25.0	°C
Nebulizer Gas(DP)	5.93E+0	kPa
MU./Dil. Gas(DP)	-1.54E-1	kPa
Aux Gas(DP)	1.23E+1	kPa
Plasma Gas(DP)	1.10E+1	kPa
Nebulizer Gas(BP)	3.65E+2	kPa
MU./Dil. Gas(BP)	-3.70E+0	kPa
Aux Gas(BP)	5.68E+1	kPa
Plasma Gas(BP)	3.94E+1	kPa
S/C Temp (H)	16.0	°C
S/C Temp (L)	2.0	°C
Peltier Voltage	2.5	V
IF/BK Press	2.39E+2	Pa
Analyzer Press	7.26E-5	Pa
IG HV	178	V
IG Emission	4.96	µA
TMP Revolution	100.0	%
TMP Rev (RAW)	100.0	%
TMP Current	2.55	A
PWR AMP Drain I	0.2	A
PWR AMP Bias	4.18	V
OctP RF (Avg)	204.0	V
OctP RF Set	4.0	V
OctP FET Bias Set	3.97	V
OctP RF(+)	176.2	V
OctP RF(-)	231.1	V
OctP Bias	-8.0	V
Cell Temp.	65.0	°C
Cell Heater Volt.	4.7	V
+U Voltage	174.3	V

Name	Value	Unit
-U Voltage	-180.9	V
V Voltage	766.4	V
QPRF Fader	0.5	V
Pickup Temp	55.0	°C
PWR Amp Temp	0.1	V
+600V	609.9	V
-120V	-132.7	V
-720V	-738.8	V
Prefilter Bias	-5.12	V
Pickup Heater I	0.10	A
QP PS +48V	47.6	V
QP PS +48V I	0.00	A
Analog HV	-2123	V
Pulse HV	978	V
EM Gate	-46.8	V
Pulse Gate	217.0	V
EM Entrance	0.2	V
EM HV Gain	-753.3	V
Inner Pole	-300.3	V
Outer Pole	20.0	V
Analog -5V	-5.1	V
Analog +15V	14.5	V
Analog -15V	-14.4	V
Analog +5V	5.2	V
Shunt C Pos	1.2	V
Drain Volt.(max)	62.8	V
RF PS +48V	47.7	V
Forward Power	1549	W
Reflected Power	6	W
Plasma Freq.	26.64	MHz
Drain I 1	11.22	A
Drain I 2	10.77	A
Drain I 3	10.64	A
Drain I 4	9.99	A
Temp Sensor	2.8	V
Driver I	5.57	A

Name	Value	Unit
Igniter	0.0	V
Driver Voltage Set	6.5	V
Unbalance Current	0.43	A
PWM Threshold Set	0.2	V
Driver Voltage	5.1	V
PWM Threshold	0.2	V
Phase Detector	0.0	mV
H2 Gas	0.00	mL/min
He Gas	0.00	mL/min
H2 Gas Press	1.70E+2	kPa
He Gas Press	1.34E+0	kPa
ORS AMFC Temp	25.2	°C
Atmospheric Press	1.02E+2	kPa
Extract 1	-0.1	V
Extract 2	-150.2	V
Omega Bias	-70.1	V
Omega Lens	9.0	V
Cell Entrance	-30.0	V
Cell Exit	-50.2	V
Deflect	12.4	V
Plate Bias	-35.0	V
HV+530V	524	V
HV+240V	237	V
HV-360V	-357	V
Inlet Temp	24.8	°C
Internal Temp	31.0	°C
+24V	23.6	V
Water Temp	17.7	°C
Water RF/WC/IF	1.42	L/min
ISIS 3 Pump Speed	0.0	%
Valve Position		
Tune/ISTD Valve		

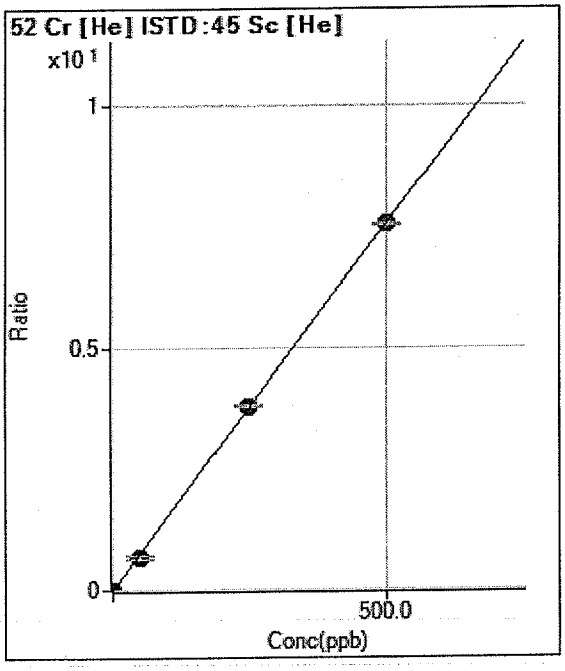
Performance Report History

Sensitivity

Calibration for H6L18003.d

Batch Folder: D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b\
Analysis File: IH6L18.batch.bin
DA Date-Time: 2021-12-20 09:45:04
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

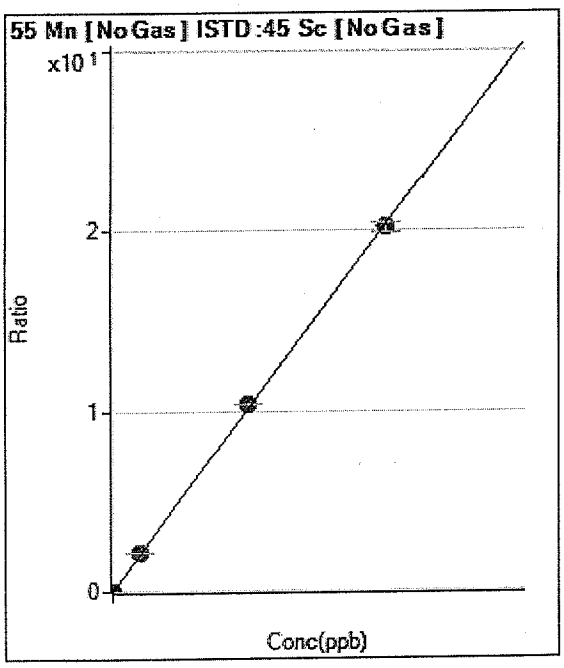
Level	Standard Data File	Sample Name	Acq. Date-Time
1	H6L18003.d	S0	2021-12-20 09:31:27
2	H6L18004.d	S1	2021-12-20 09:34:19
3	H6L18005.d	S2	2021-12-20 09:37:10
4	H6L18006.d	S3	2021-12-20 09:40:22
5	H6L18007.d	S4	2021-12-20 09:43:12



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1998.82	0.0038	P	3.5
2	☐	0.500	0.561	6466.20	0.0123	P	1.8
3	☐	50.000	44.020	349519.73	0.6690	P	10.8
4	☐	250.000	252.524	1945931.13	3.8195	A	0.6
5	☐	500.000	499.336	3815051.00	7.5489	A	0.7

y = 0.0151 * x + 0.0038
R = 0.9999
DL = 0.02674
BEC = 0.2534

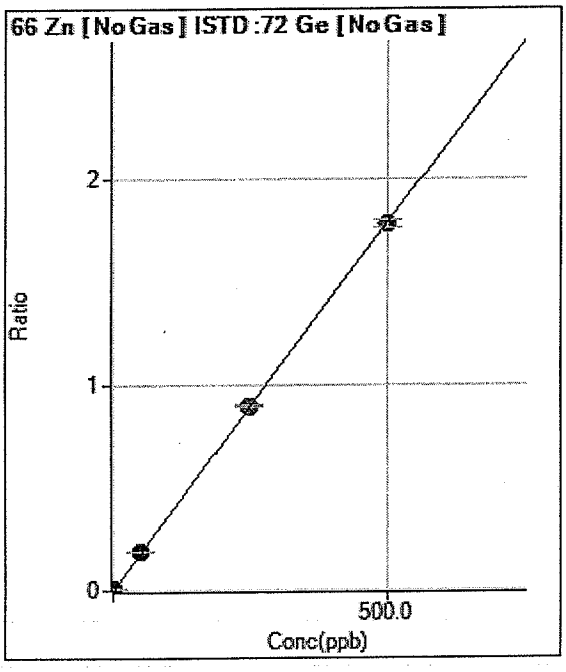
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13642.13	0.0030	P	0.8
2	☐	0.500	0.435	27508.95	0.0059	P	1.1
3	☐	300.000	314.448	9822338.00	2.1349	A	1.5
4	☐	1500.000	1531.868	47122873.33	10.3890	A	0.8
5	☐	3000.000	2982.621	91385648.00	20.2250	A	2.9

y = 0.0068 * x + 0.0030
R = 0.9999
DL = 0.01101
BEC = 0.4358

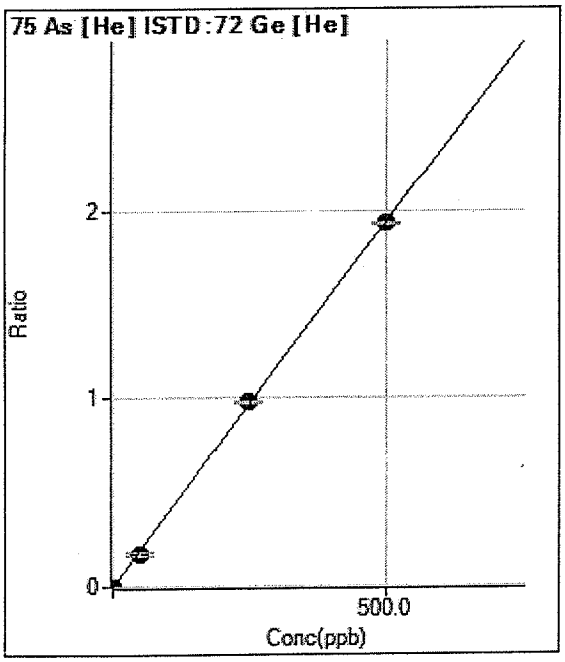
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1404.74	0.0012	P	2.6
2	☐	1.000	1.270	6942.44	0.0057	P	4.2
3	☐	50.000	51.885	225455.75	0.1862	P	1.2
4	☐	250.000	252.063	1064321.54	0.9001	M	1.5
5	☐	500.000	498.779	2079903.21	1.7800	A	2.3

y = 0.0036 * x + 0.0012
R = 1.0000
DL = 0.02597
BEC = 0.3303

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	325.00	0.0009	P	2.3
2	☐	0.500	0.540	1054.04	0.0030	P	2.9
3	☐	50.000	45.204	60525.31	0.1758	P	9.5
4	☐	250.000	252.777	329262.09	0.9785	P	1.4
5	☐	500.000	499.091	647342.75	1.9311	P	0.7

y = 0.0039 * x + 9.4351E-004
R = 0.9999
DL = 0.01714
BEC = 0.244

Weight: <None>
Min Conc: 0

US EPA Tune Check Report

Operator Name	LYaman
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq. Date-Time	2021-12-20 09:03:02
Report Comment	---
Instrument Name	G8421A SG19253823

[No Gas]

Sensitivity

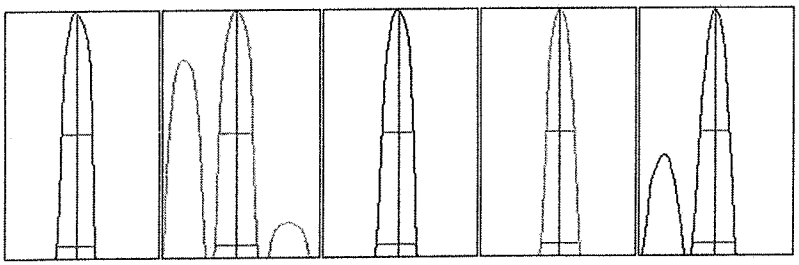
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	22850	228502.18			2.415	5.000
24	10.00	106787	1067869.31			1.118	5.000
59	10.00	230703	2307033.48			1.419	5.000
115	10.00	337398	3373982.77			0.390	5.000
208	10.00	184153	1841531.32			2.115	5.000

Mass	RSD% (Flag)
9	
24	
59	
115	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	22927	23365	21909	23005	23045
24	107524	106817	105018	106415	108160
59	232747	229770	225366	233271	232364
115	336499	338622	336094	338994	336782
208	184256	184840	177569	186883	187219

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	39134.21	8.95	8.90 - 9.10	
24	174412.91	23.95	23.90 - 24.10	
59	387572.59	59.00	58.90 - 59.10	
115	635012.80	115.05	114.90 - 115.10	
208	328679.48	208.00	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.61	0.735	0.900	
24	0.64	0.785	0.900	
59	0.62	0.778	0.900	
115	0.56	0.735	0.900	
208	0.59	0.820	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	153.699999999999
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	HMI	Nebulizer Gas	0.61 L/min	Dilution Gas	0.36 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.10 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.4 V	Deflect	13.6 V
Extract 2	-195.0 V	Cell Entrance	-36 V	Plate Bias	-50 V
Omega Bias	-100 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	122	Axis Gain	0.9991	QP Bias	-3.0 V
Mass Offset	126	Axis Offset	0.04		

Hardware Settings

Torch

Torch H	0.5 mm	Torch V	-0.2 mm

EM

Discriminator	3.6 mV	Analog HV	2119 V	Pulse HV	969 V

Calibration Blank Report

Sample Name	BLANK
File Name	H6L18002.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 09:27:40
Sample Type	CalBlk
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	101758.91	1.5
Be	9	6	No Gas	121.11	20.3
B	11	6	No Gas	5186.52	4.1
Na	23	45	H2	563658.77	0.4
Mg	24	45	No Gas	78697.54	18.5
Al	27	45	No Gas	75009.96	23.8
Si	28	45	H2	20759.59	2.8
P	31	45	No Gas	23475.14	0.6
K	39	45	He	109025.18	1.5
Ca	40	45	H2	158074.05	0.4
Ti	47	45	No Gas	274.67	10.6
V	51	45	He	4878.20	3.4
Cr	52	45	He	1995.48	0.2
Mn	55	45	No Gas	18772.36	13.3
Fe	56	45	H2	57612.43	2.8
Co	59	45	No Gas	1305.40	25.6
Ni	60	45	He	386.01	7.8
Cu	63	45	He	2606.92	2.4
Zn	66	72	No Gas	2672.26	4.5
As	75	72	He	319.67	3.1
Se	78	72	H2	51.00	18.7
Sr	88	72	No Gas	4320.70	7.7
Zr	90	72	No Gas	363.34	26.7
Mo	95	115	No Gas	792.25	15.6
Mo	98	115	No Gas	1373.40	9.5
[Cd]	106	115	No Gas	41.00	21.3
Ag	107	115	No Gas	215.56	11.8
[Cd]	108	115	No Gas	26.67	27.6
Cd	111	115	No Gas	390.72	22.5
Sn	118	115	No Gas	2223.52	3.2
Sn	118	115	H2	1966.82	2.6
Sb	123	115	No Gas	310.00	6.5
Ba	137	115	No Gas	824.47	22.5
W	182	159	No Gas	880.04	3.4
Hg	201	159	No Gas	63.17	9.2

Calibration Blank Report

Name	Mass	ISTD	Tune	CPS	RSD
Hg	201	159	He	35.83	16.1
Tl	205	159	No Gas	5649.08	12.8
Pb	206	159	No Gas	1906.82	8.1
Pb	207	159	No Gas	1650.12	18.5
Pb	208	159	No Gas	7360.86	11.4
Th	232	159	No Gas	55.56	9.2
U	238	159	No Gas	2983.70	10.3

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD
Li	6	No Gas	1738581.79	0.8
Sc	45	No Gas	4636170.50	0.4
Sc	45	H2	2981901.92	0.3
Sc	45	He	523296.98	1.0
Ge	72	No Gas	1200611.92	0.9
Ge	72	H2	919312.46	1.2
Ge	72	He	347706.79	1.0
In	115	No Gas	7571626.34	0.6
Tb	159	No Gas	10033512.66	0.3
Tb	159	He	6768676.33	0.3

Calibration Blank Report

Sample Name	S0
File Name	H6L18003.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 09:31:27
Sample Type	CalBlk
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	98939.96	1.3
Be	9	6	No Gas	96.67	24.9
B	11	6	No Gas	3734.94	0.1
Na	23	45	H2	566965.23	0.3
Mg	24	45	No Gas	61568.07	0.9
Al	27	45	No Gas	44317.13	0.6
Si	28	45	H2	12972.72	1.1
P	31	45	No Gas	22607.70	0.3
K	39	45	He	110700.46	1.9
Ca	40	45	H2	141134.47	0.6
Ti	47	45	No Gas	196.00	8.0
V	51	45	He	5503.10	0.7
Cr	52	45	He	1998.82	3.3
Mn	55	45	No Gas	13642.13	1.3
Fe	56	45	H2	56354.46	0.5
Co	59	45	No Gas	790.02	5.1
Ni	60	45	He	376.01	6.6
Cu	63	45	He	2534.91	3.7
Zn	66	72	No Gas	1404.74	2.1
As	75	72	He	325.00	2.2
Se	78	72	H2	45.33	7.7
Sr	88	72	No Gas	4404.06	4.7
Zr	90	72	No Gas	243.33	15.6
Mo	95	115	No Gas	230.00	10.4
Mo	98	115	No Gas	328.89	5.6
[Cd]	106	115	No Gas	16.00	22.5
Ag	107	115	No Gas	142.22	8.2
[Cd]	108	115	No Gas	16.67	3.5
Cd	111	115	No Gas	137.34	3.1
Sn	118	115	No Gas	1508.98	1.7
Sn	118	115	H2	1381.18	5.4
Sb	123	115	No Gas	218.89	3.2
Ba	137	115	No Gas	475.56	8.2
W	182	159	No Gas	526.68	12.6
Hg	201	159	No Gas	30.33	23.6

Calibration Blank Report

Name	Mass	ISTD	Tune	CPS	RSD
Hg	201	159	He	23.50	9.3
Tl	205	159	No Gas	2107.96	2.0
Pb	206	159	No Gas	1206.73	8.9
Pb	207	159	No Gas	1170.06	12.9
Pb	208	159	No Gas	4882.60	3.1
Th	232	159	No Gas	36.67	24.0
U	238	159	No Gas	1057.82	4.4

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD
Li	6	No Gas	1681799.59	0.8
Sc	45	No Gas	4617155.50	0.6
Sc	45	H2	2972542.08	1.0
Sc	45	He	522068.73	0.6
Ge	72	No Gas	1192516.67	0.5
Ge	72	H2	914687.13	0.4
Ge	72	He	344471.49	0.6
In	115	No Gas	7470718.61	1.2
Tb	159	No Gas	10030832.66	0.8
Tb	159	He	6703669.67	0.1

Calibration Standard Report

Sample Name	S1
File Name	H6L18004.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 09:34:19
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	104316.18	1.0
Be	9	6	No Gas	1501.19	3.8
B	11	6	No Gas	5545.55	1.4
Na	23	45	H2	778355.67	0.6
Mg	24	45	No Gas	641342.33	0.6
Al	27	45	No Gas	796257.96	0.6
Si	28	45	H2	158564.99	0.8
P	31	45	No Gas	43841.68	0.3
K	39	45	He	151214.69	2.4
Ca	40	45	H2	665444.29	1.0
Ti	47	45	No Gas	1182.05	3.4
V	51	45	He	9620.71	0.7
Cr	52	45	He	6466.20	1.6
Mn	55	45	No Gas	27508.95	0.7
Fe	56	45	H2	927687.56	0.3
Co	59	45	No Gas	14975.54	1.2
Ni	60	45	He	1999.48	1.8
Cu	63	45	He	7107.86	1.5
Zn	66	72	No Gas	6942.44	4.1
As	75	72	He	1054.04	2.7
Se	78	72	H2	277.33	2.9
Sr	88	72	No Gas	21725.41	1.0
Zr	90	72	No Gas	86881.40	2.3
Mo	95	115	No Gas	3734.97	1.4
Ag	107	115	No Gas	11174.73	1.8
Cd	111	115	No Gas	2115.17	1.7
Sn	118	115	No Gas	7329.82	1.9
Sb	123	115	No Gas	7056.35	0.2
Ba	137	115	No Gas	3082.59	4.4
W	182	159	No Gas	3773.91	4.1
Hg	201	159	He	104.17	5.6
Tl	205	159	No Gas	17472.22	0.6
Pb	208	159	No Gas	26319.94	1.4
U	238	159	No Gas	22623.09	1.1

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1679740.17	0.5	1681799.59	99.88	60	120	
Sc	45	No Gas	4657751.50	0.7	4617155.5	100.88	60	120	
Sc	45	H2	2989746.33	0.6	2972542.08	100.58	60	120	
Sc	45	He	525749.11	0.8	522068.73	100.7	60	120	
Ge	72	No Gas	1216162.42	0.5	1192516.67	101.98	60	120	
Ge	72	H2	922635.98	0.7	914687.13	100.87	60	120	
Ge	72	He	347631.94	0.4	344471.49	100.92	60	120	
In	115	No Gas	7544400.20	1.7	7470718.61	100.99	60	120	
Tb	159	No Gas	10007535.43	0.4	10030832.66	99.77	60	120	
Tb	159	He	6743614.67	0.7	6703669.67	100.6	60	120	

Calibration Standard Report

Sample Name	S2
File Name	H6L18005.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 09:37:10
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	144724.57	0.5
Be	9	6	No Gas	14695.45	1.9
B	11	6	No Gas	23612.06	0.4
Na	23	45	H2	25520269.33	0.3
Mg	24	45	No Gas	60488078.67	0.1
Al	27	45	No Gas	77292122.18	0.9
Si	28	45	H2	750169.42	1.1
P	31	45	No Gas	65500.63	0.5
K	39	45	He	3795074.00	5.4
Ca	40	45	H2	52255470.67	0.6
Ti	47	45	No Gas	95026.89	0.7
V	51	45	He	303321.25	10.2
Cr	52	45	He	349519.73	11.0
Mn	55	45	No Gas	9822338.00	0.8
Fe	56	45	H2	86013061.33	0.6
Co	59	45	No Gas	1394270.42	1.6
Ni	60	45	He	137084.43	9.8
Cu	63	45	He	372519.17	9.2
Zn	66	72	No Gas	225455.75	0.6
As	75	72	He	60525.31	9.2
Se	78	72	H2	24859.54	0.5
Sr	88	72	No Gas	1816154.44	1.6
Zr	90	72	No Gas	225548.63	1.3
Mo	95	115	No Gas	358043.90	1.2
Ag	107	115	No Gas	96519.16	0.9
Cd	111	115	No Gas	194706.62	0.8
Sn	118	115	No Gas	568236.56	0.9
Sb	123	115	No Gas	133798.51	0.8
Ba	137	115	No Gas	560117.63	0.9
W	182	159	No Gas	71947.35	1.1
Hg	201	159	He	833.03	9.5
Tl	205	159	No Gas	1624055.18	0.9
Pb	208	159	No Gas	2252373.06	0.8
U	238	159	No Gas	2214088.80	0.1

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1664426.57	1.8	1681799.59	98.97	60	120	
Sc	45	No Gas	4601236.83	1.0	4617155.5	99.66	60	120	
Sc	45	H2	2991077.58	1.0	2972542.08	100.62	60	120	
Sc	45	He	522379.78	0.5	522068.73	100.06	60	120	
Ge	72	No Gas	1210803.62	0.9	1192516.67	101.53	60	120	
Ge	72	H2	914621.44	0.5	914687.13	99.99	60	120	
Ge	72	He	344433.99	0.4	344471.49	99.99	60	120	
In	115	No Gas	7478194.31	0.6	7470718.61	100.1	60	120	
Tb	159	No Gas	9945204.05	0.8	10030832.66	99.15	60	120	
Tb	159	He	6725855.00	1.3	6703669.67	100.33	60	120	

Calibration Standard Report

Sample Name	S3
File Name	H6L18006.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 09:40:22
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	326344.31	0.1
Be	9	6	No Gas	70524.93	1.0
B	11	6	No Gas	95993.03	1.5
Na	23	45	H2	123035170.67	1.0
Mg	24	45	No Gas	291556522.67	0.9
Al	27	45	No Gas	373379834.44	0.8
Si	28	45	H2	3621294.42	0.3
P	31	45	No Gas	229397.46	1.1
K	39	45	He	19411746.67	0.7
Ca	40	45	H2	255630970.67	1.2
Tl	47	45	No Gas	459864.71	1.2
V	51	45	He	1690209.13	0.4
Cr	52	45	He	1945931.13	0.8
Mn	55	45	No Gas	47122873.33	0.2
Fe	56	45	H2	415448864.00	0.4
Co	59	45	No Gas	6584687.50	0.8
Ni	60	45	He	748352.56	0.4
Cu	63	45	He	1977090.62	0.2
Zn	66	72	No Gas	1064321.54	1.1
As	75	72	He	329262.09	0.9
Se	78	72	H2	120540.78	0.6
Sr	88	72	No Gas	8789459.37	1.6
Zr	90	72	No Gas	552354.52	1.9
Mo	95	115	No Gas	1762797.29	0.7
Ag	107	115	No Gas	452154.36	0.8
Cd	111	115	No Gas	934988.36	0.7
Sn	118	115	No Gas	2745558.78	0.9
Sb	123	115	No Gas	643787.44	1.0
Ba	137	115	No Gas	2721794.34	1.0
W	182	159	No Gas	347694.07	1.4
Hg	201	159	He	4316.24	0.9
Tl	205	159	No Gas	7915878.02	1.7
Pb	208	159	No Gas	10895716.33	1.7
U	238	159	No Gas	10918644.29	0.5

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1641726.41	0.8	1681799.59	97.62	60	120	
Sc	45	No Gas	4536029.83	0.8	4617155.5	98.24	60	120	
Sc	45	H2	2927173.00	0.7	2972542.08	98.47	60	120	
Sc	45	He	509471.38	0.4	522068.73	97.59	60	120	
Ge	72	No Gas	1182488.00	0.5	1192516.67	99.16	60	120	
Ge	72	H2	900860.34	0.5	914687.13	98.49	60	120	
Ge	72	He	336511.44	0.6	344471.49	97.69	60	120	
In	115	No Gas	7240632.16	0.2	7470718.61	96.92	60	120	
Tb	159	No Gas	9854102.66	0.8	10030832.66	98.24	60	120	
Tb	159	He	6686996.67	0.4	6703669.67	99.75	60	120	

Calibration Standard Report

Sample Name	S4
File Name	H6L18007.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 09:43:12
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	545962.98	0.7
Be	9	6	No Gas	136248.55	0.6
B	11	6	No Gas	187752.70	2.2
Na	23	45	H2	240634330.67	0.7
Mg	24	45	No Gas	575142528.00	1.0
Al	27	45	No Gas	743650735.58	0.4
Si	28	45	H2	7131920.50	1.0
P	31	45	No Gas	430219.14	1.1
K	39	45	He	37365458.67	0.0
Ca	40	45	H2	510337728.00	0.6
Ti	47	45	No Gas	904086.65	1.5
V	51	45	He	3321727.25	0.4
Cr	52	45	He	3815051.00	0.8
Mn	55	45	No Gas	91385648.00	0.4
Fe	56	45	H2	820021525.33	1.5
Co	59	45	No Gas	12866352.67	0.3
Ni	60	45	He	1443844.12	0.7
Cu	63	45	He	3819041.08	0.7
Zn	66	72	No Gas	2079903.21	0.4
As	75	72	He	647342.75	1.1
Se	78	72	H2	232809.80	0.5
Sr	88	72	No Gas	17246535.98	0.8
Zr	90	72	No Gas	1116750.97	0.3
Mo	95	115	No Gas	3434479.52	0.6
Ag	107	115	No Gas	885497.46	1.1
Cd	111	115	No Gas	1838145.10	1.2
Sn	118	115	No Gas	5383608.67	1.0
Sb	123	115	No Gas	1294402.62	0.8
Ba	137	115	No Gas	5303564.23	0.9
W	182	159	No Gas	687264.00	1.5
Hg	201	159	He	8334.61	0.6
Tl	205	159	No Gas	15381341.61	0.7
Pb	208	159	No Gas	21054625.52	0.9
U	238	159	No Gas	21428186.93	1.9

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1661591.82	0.6	1681799.59	98.8	60	120	
Sc	45	No Gas	4520766.50	2.7	4617155.5	97.91	60	120	
Sc	45	H2	2961326.00	1.1	2972542.08	99.62	60	120	
Sc	45	He	505384.25	0.6	522068.73	96.8	60	120	
Ge	72	No Gas	1168851.12	2.0	1192516.67	98.02	60	120	
Ge	72	H2	888716.37	0.9	914687.13	97.16	60	120	
Ge	72	He	335219.72	0.3	344471.49	97.31	60	120	
In	115	No Gas	7031530.03	2.9	7470718.61	94.12	60	120	
Tb	159	No Gas	9813047.39	1.7	10030832.66	97.83	60	120	
Tb	159	He	6667528.17	0.8	6703669.67	99.46	60	120	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	H6L18008.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 09:45:57
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	30.599	ppb	1.4	377068.12	30	102	90	110	
Be	9	6	No Gas	30.719	ppb	2.5	85231.86	30	102.4	90	110	
B	11	6	No Gas	30.123	ppb	2.5	59799.31	30	100.41	90	110	
Na	23	45	H2	32417.818	ppb	1.2	155666250.67	30000	108.06	90	110	
Mg	24	45	No Gas	31875.001	ppb	1.6	367174410.67	30000	106.25	90	110	
Al	27	45	No Gas	31693.386	ppb	1.0	470946819.65	30000	105.64	90	110	
Si	28	45	H2	3351.392	ppb	1.3	4761265.33	3000	111.71	90	110	> +/- 10%
P	31	45	No Gas	302.035	ppb	1.9	268945.23	300	100.68	90	110	
K	39	45	He	32741.873	ppb	0.6	24237109.33	30000	109.14	90	110	
Ca	40	45	H2	32224.878	ppb	2.2	326504000.00	30000	107.42	90	110	
Ti	47	45	No Gas	296.978	ppb	0.8	538069.23	300	98.99	90	110	
V	51	45	He	309.060	ppb	0.3	2023362.92	300	103.02	90	110	
Cr	52	45	He	315.568	ppb	0.3	2373052.08	300	105.19	90	110	
Mn	55	45	No Gas	2042.900	ppb	2.6	62530294.67	2000	102.14	90	110	
Fe	56	45	H2	32370.900	ppb	0.4	528336693.33	30000	107.9	90	110	
Co	59	45	No Gas	308.982	ppb	2.1	7977774.17	300	102.99	90	110	
Ni	60	45	He	313.360	ppb	0.9	894827.48	300	104.45	90	110	
Cu	63	45	He	318.305	ppb	0.6	2404540.92	300	106.1	90	110	
Zn	66	72	No Gas	326.346	ppb	2.5	1359874.83	300	108.78	90	110	
As	75	72	He	305.826	ppb	1.1	393936.81	300	101.94	90	110	
Se	78	72	H2	313.113	ppb	0.4	144259.95	300	104.37	90	110	
Sr	88	72	No Gas	309.216	ppb	2.0	10670763.47	300	103.07	90	110	
Zr	90	72	No Gas	32.765	ppb	2.2	725838.06	30	109.22	90	110	
Mo	95	115	No Gas	303.854	ppb	0.6	2116723.67	300	101.28	90	110	
Ag	107	115	No Gas	31.014	ppb	1.4	556568.54	30	103.38	90	110	
Cd	111	115	No Gas	326.723	ppb	1.4	1216441.94	300	108.91	90	110	
Sn	118	115	No Gas	307.633	ppb	0.9	3355558.06	300	102.54	90	110	
Sb	123	115	No Gas	59.863	ppb	1.0	781082.83	60	99.77	90	110	
Ba	137	115	No Gas	308.505	ppb	0.9	1659856.56	300	102.84	90	110	
W	182	159	No Gas	31.994	ppb	1.8	441031.54	30	106.65	90	110	
Hg	201	159	He	2.879	ppb	0.7	4829.26	3	95.97	90	110	
Tl	205	159	No Gas	307.303	ppb	3.4	9512200.45	300	102.43	90	110	
Pb	208	159	No Gas	310.420	ppb	1.7	13168156.47	300	103.47	90	110	
U	238	159	No Gas	302.936	ppb	3.2	13117526.98	300	100.98	90	110	

Initial Calibration Verification (ICV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1674235.26	0.7	1681799.59	99.55	60	120	
Sc	45	No Gas	4514002.33	2.5	4617155.5	97.77	60	120	
Sc	45	H2	2931455.58	1.1	2972542.08	98.62	60	120	
Sc	45	He	497270.40	0.8	522068.73	95.25	60	120	
Ge	72	No Gas	1167121.38	0.7	1192516.67	97.87	60	120	
Ge	72	H2	875296.58	0.2	914687.13	95.69	60	120	
Ge	72	He	332851.39	1.6	344471.49	96.63	60	120	
In	115	No Gas	7132202.32	2.5	7470718.61	95.47	60	120	
Tb	159	No Gas	9818962.11	0.8	10030832.66	97.89	60	120	
Tb	159	He	6658266.33	0.7	6703669.67	99.32	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	ICB
File Name	H6L18009.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 09:48:34
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	100473.98	0.4	
Be	9	6	No Gas	0.010	ppb	80.5	127.78	0.08	
B	11	6	No Gas	0.383	ppb	38.4	4580.75	4	
Na	23	45	H2	1.419	ppb	60.4	561881.69	40	
Mg	24	45	No Gas	4.876	ppb	51.5	116352.27	10	
Al	27	45	No Gas	4.624	ppb	54.4	111956.64	15	
Si	28	45	H2	2.063	ppb	9.6	15604.08	8	
P	31	45	No Gas	1.167	ppb	40.2	23099.18	10	
K	39	45	He	6.469	ppb	49.1	111758.47	20	
Ca	40	45	H2	1.347	ppb	9.3	151739.23	25	
Ti	47	45	No Gas	0.060	ppb	31.1	301.33	0.5	
V	51	45	He	<0.000	ppb	N/A	4939.56	0.5	
Cr	52	45	He	0.014	ppb	66.9	2033.49	0.2	
Mn	55	45	No Gas	0.331	ppb	52.7	23463.61	0.2	>LOD
Fe	56	45	H2	2.141	ppb	7.8	89860.86	10	
Co	59	45	No Gas	0.047	ppb	56.0	1980.16	0.15	
Ni	60	45	He	0.005	ppb	120.1	378.01	0.2	
Cu	63	45	He	0.061	ppb	24.7	2916.31	0.4	
Zn	66	72	No Gas	0.077	ppb	27.7	1707.44	2	
As	75	72	He	0.029	ppb	31.5	353.34	0.2	
Se	78	72	H2	0.067	ppb	14.8	75.67	0.2	
Sr	88	72	No Gas	0.041	ppb	49.0	5765.71	0.2	
Zr	90	72	No Gas	0.002	ppb	134.3	293.34	2	
Mo	95	115	No Gas	0.062	ppb	36.9	680.02	0.2	
Ag	107	115	No Gas	0.004	ppb	35.4	217.78	0.08	
Cd	111	115	No Gas	0.118	ppb	32.7	596.78	0.2	
Sn	118	115	No Gas	0.142	ppb	24.5	3129.27	0.2	
Sb	123	115	No Gas	0.014	ppb	45.9	414.45	0.4	
Ba	137	115	No Gas	0.033	ppb	59.2	661.13	0.2	
W	182	159	No Gas	0.026	ppb	53.4	896.70	0.3	
Hg	201	159	He	0.009	ppb	50.3	39.33	0.1	
Tl	205	159	No Gas	0.166	ppb	34.5	7321.13	0.1	>LOD
Pb	208	159	No Gas	0.085	ppb	31.2	8542.30	0.1	
U	238	159	No Gas	0.048	ppb	31.1	3183.76	0.05	

12/21/21

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1731267.50	1.1	1681799.59	102.94	60	120	
Sc	45	No Gas	4522834.00	1.2	4617155.5	97.96	60	120	
Sc	45	H2	2910461.67	0.4	2972542.08	97.91	60	120	
Sc	45	He	504197.13	0.9	522068.73	96.58	60	120	
Ge	72	No Gas	1174925.38	0.5	1192516.67	98.52	60	120	
Ge	72	H2	892443.85	0.6	914687.13	97.57	60	120	
Ge	72	He	334653.97	0.8	344471.49	97.15	60	120	
In	115	No Gas	7465011.02	1.3	7470718.61	99.92	60	120	
Tb	159	No Gas	10025575.71	1.5	10030832.66	99.95	60	120	
Tb	159	He	6714826.50	0.2	6703669.67	100.17	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA
File Name	H6L18012.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 09:58:42
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.335	ppb	55.6	98501.40	2	-50	50	
Be	9	6	No Gas	<0.000	ppb	N/A	80.00	0.4	-50	50	
B	11	6	No Gas	0.694	ppb	18.4	4858.62	10	-50	50	
Na	23	45	H2	107281.187	ppb	1.0	514477418.67	100000	80	120	
Mg	24	45	No Gas	102135.518	ppb	2.7	1175944234.67	100000	80	120	
Al	27	45	No Gas	102116.818	ppb	3.5	1516954857.40	100000	80	120	
Si	28	45	H2	2.993	ppb	3.9	17053.11	50	-50	50	
P	31	45	No Gas	100453.631	ppb	3.9	82105213.33	100000	80	120	
K	39	45	He	106717.275	ppb	1.7	80293162.67	100000	80	120	
Ca	40	45	H2	106315.779	ppb	0.9	1078242944.00	100000	80	120	
Ti	47	45	No Gas	2096.825	ppb	2.4	3796868.42	2000	80	120	
V	51	45	He	<0.000	ppb	N/A	4205.98	1	-50	50	
Cr	52	45	He	2.156	ppb	1.8	18457.75	1	-50	50	> +/- 20%
Mn	55	45	No Gas	0.283	ppb	1.6	21992.99	1	-50	50	
Fe	56	45	H2	106468.997	ppb	0.4	1739605973.33	100000	80	120	
Co	59	45	No Gas	0.151	ppb	3.6	4664.80	0.75	-50	50	
Ni	60	45	He	0.120	ppb	1.8	714.02	1	-50	50	
Cu	63	45	He	0.171	ppb	3.1	3777.86	2	-50	50	
Zn	66	72	No Gas	1.838	ppb	1.9	8944.96	20	-50	50	
As	75	72	He	<0.000	ppb	N/A	308.67	1	-50	50	
Se	78	72	H2	0.281	ppb	14.1	172.67	1	-50	50	
Sr	88	72	No Gas	1.127	ppb	3.1	42811.73	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.237	ppb	6.0	5437.80	10	-50	50	
Mo	95	115	No Gas	2128.611	ppb	1.3	14359760.82	2000	80	120	
Ag	107	115	No Gas	0.300	ppb	2.9	5342.19	0.4	-50	50	> +/- 20%
Cd	111	115	No Gas	0.092	ppb	16.3	459.72	1	-50	50	
Sn	118	115	No Gas	0.053	ppb	24.2	1953.48	1	-50	50	
Ba	137	115	No Gas	0.341	ppb	8.4	2215.75	1	-50	50	
W	182	159	No Gas	0.183	ppb	13.5	3037.05	1	-50	50	
Hg	201	159	He	0.002	ppb	110.9	26.17	0.5	-50	50	
Tl	205	159	No Gas	<0.000	ppb	N/A	965.60	0.5	-50	50	
Pb	208	159	No Gas	0.072	ppb	24.1	7828.74	0.5	-50	50	
U	238	159	No Gas	<0.000	ppb	N/A	224.45	0.25	-50	50	

12/20/21

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1624519.80	2.7	1681799.59	96.59	60	120	
Sc	45	No Gas	4511505.17	2.0	4617155.5	97.71	60	120	
Sc	45	H2	2934778.83	0.3	2972542.08	98.73	60	120	
Sc	45	He	507006.08	0.9	522068.73	97.11	60	120	
Ge	72	No Gas	1156562.21	1.8	1192516.67	96.98	60	120	
Ge	72	H2	874673.81	0.8	914687.13	95.63	60	120	
Ge	72	He	335900.38	1.2	344471.49	97.51	60	120	
In	115	No Gas	6906591.94	1.9	7470718.61	92.45	60	120	
Tb	159	No Gas	9822091.56	0.6	10030832.66	97.92	60	120	
Tb	159	He	6649310.67	0.5	6703669.67	99.19	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB
File Name	H6L18013.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 10:01:19
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	20.604	ppb	1.5	282553.37	20	80	120	
Be	9	6	No Gas	20.971	ppb	2.2	57512.88	20	80	120	
B	11	6	No Gas	19.638	ppb	1.5	39788.52	20	80	120	
Na	23	45	H2	107537.866	ppb	1.6	526256192.00	100000	80	120	
Mg	24	45	No Gas	102852.696	ppb	1.6	1209457408.00	100000	80	120	
Al	27	45	No Gas	103278.247	ppb	2.5	1567203549.98	100000	80	120	
Si	28	45	H2	218.402	ppb	1.7	329197.08	200	80	120	
P	31	45	No Gas	101977.949	ppb	1.2	85112674.67	100000	80	120	
K	39	45	He	109061.423	ppb	1.4	81642549.33	100000	80	120	
Ca	40	45	H2	106449.369	ppb	0.7	1101765205.33	100000	80	120	
Ti	47	45	No Gas	2132.446	ppb	2.0	3943908.25	2000	80	120	
V	51	45	He	20.697	ppb	1.0	142402.06	20	80	120	
Cr	52	45	He	23.247	ppb	0.6	179114.79	20	80	120	
Mn	55	45	No Gas	20.432	ppb	0.7	651947.27	20	80	120	
Fe	56	45	H2	107535.882	ppb	1.7	1792898517.33	100000	80	120	
Co	59	45	No Gas	20.597	ppb	1.0	543556.44	20	80	120	
Ni	60	45	He	20.991	ppb	0.7	61141.32	20	80	120	
Cu	63	45	He	21.301	ppb	1.0	165507.11	20	80	120	
Zn	66	72	No Gas	22.385	ppb	1.0	96156.04	20	80	120	
As	75	72	He	20.857	ppb	0.3	27130.19	20	80	120	
Se	78	72	H2	21.634	ppb	0.5	10110.12	20	80	120	
Sr	88	72	No Gas	21.593	ppb	1.8	761892.70	20	80	120	
Zr	90	72	No Gas	11.193	ppb	1.7	252294.65	20	80	120	> +/- 20%
Mo	95	115	No Gas	2152.766	ppb	1.7	14979561.07	2000	80	120	
Ag	107	115	No Gas	20.157	ppb	1.7	361472.37	20	80	120	
Cd	111	115	No Gas	20.029	ppb	0.9	74593.17	20	80	120	
Sn	118	115	No Gas	20.279	ppb	0.3	222296.83	20	80	120	
Sb	123	115	No Gas	20.002	ppb	0.8	260764.53	20	80	120	
Ba	137	115	No Gas	20.949	ppb	0.9	112985.26	20	80	120	
W	182	159	No Gas	20.439	ppb	1.1	284491.45	20	80	120	
Hg	201	159	He	2.145	ppb	1.1	3626.19	2	80	120	
Tl	205	159	No Gas	19.855	ppb	0.7	622122.58	20	80	120	
Pb	208	159	No Gas	20.247	ppb	1.6	871272.74	20	80	120	
U	238	159	No Gas	20.115	ppb	2.2	879870.83	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1653842.16	2.2	1681799.59	98.34	60	120	
Sc	45	No Gas	4607611.83	2.6	4617155.5	99.79	60	120	
Sc	45	H2	2995072.67	1.3	2972542.08	100.76	60	120	
Sc	45	He	504413.44	0.5	522068.73	96.62	60	120	
Ge	72	No Gas	1186960.04	1.5	1192516.67	99.53	60	120	
Ge	72	H2	884262.75	0.5	914687.13	96.67	60	120	
Ge	72	He	332459.95	0.5	344471.49	96.51	60	120	
In	115	No Gas	7124132.97	1.6	7470718.61	95.36	60	120	
Tb	159	No Gas	9909383.22	1.0	10030832.66	98.79	60	120	
Tb	159	He	6697999.83	0.3	6703669.67	99.92	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV1
File Name	H6L18015.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 10:06:32
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.634	ppb	0.8	310861.22	25	94.54	90	110	
Be	9	6	No Gas	23.931	ppb	1.6	65829.28	25	95.72	90	110	
B	11	6	No Gas	46.474	ppb	2.5	89448.72	50	92.95	90	110	
Na	23	45	H2	25022.353	ppb	0.8	121140920.00	25000	100.09	90	110	
Mg	24	45	No Gas	24469.398	ppb	2.4	285391936.00	25000	97.88	90	110	
Al	27	45	No Gas	24294.411	ppb	3.2	365569447.89	25000	97.18	90	110	
Si	28	45	H2	2481.660	ppb	0.3	3554166.83	2500	99.27	90	110	
P	31	45	No Gas	242.028	ppb	1.1	222648.94	250	96.81	90	110	
K	39	45	He	24997.219	ppb	0.4	18786315.33	25000	99.99	90	110	
Ca	40	45	H2	24516.077	ppb	0.5	250230224.00	25000	98.06	90	110	
Ti	47	45	No Gas	238.124	ppb	1.9	436885.68	250	95.25	90	110	
V	51	45	He	248.383	ppb	0.5	1649765.33	250	99.35	90	110	
Cr	52	45	He	250.354	ppb	0.4	1909142.46	250	100.14	90	110	
Mn	55	45	No Gas	1480.214	ppb	1.2	45878165.33	1500	98.68	90	110	
Fe	56	45	H2	24734.592	ppb	0.6	406601450.67	25000	98.94	90	110	
Co	59	45	No Gas	247.670	ppb	1.2	6474350.17	250	99.07	90	110	
Ni	60	45	He	248.788	ppb	0.6	720380.63	250	99.52	90	110	
Cu	63	45	He	255.491	ppb	0.4	1957235.33	250	102.2	90	110	
Zn	66	72	No Gas	239.775	ppb	1.4	1023139.42	250	95.91	90	110	
As	75	72	He	247.442	ppb	0.6	322603.06	250	98.98	90	110	
Se	78	72	H2	249.113	ppb	0.8	117039.44	250	99.65	90	110	
Sr	88	72	No Gas	244.014	ppb	0.7	8621589.94	250	97.61	90	110	
Zr	90	72	No Gas	24.046	ppb	0.3	545396.82	25	96.18	90	110	
Mo	95	115	No Gas	239.600	ppb	2.9	1720796.25	250	95.84	90	110	
Ag	107	115	No Gas	23.515	ppb	1.9	435162.00	25	94.06	90	110	
Cd	111	115	No Gas	236.849	ppb	1.6	908919.24	250	94.74	90	110	
Sn	118	115	No Gas	240.147	ppb	1.6	2700927.25	250	96.06	90	110	
Sb	123	115	No Gas	46.354	ppb	1.1	623465.01	50	92.71	90	110	
Ba	137	115	No Gas	479.838	ppb	2.3	2661085.31	500	95.97	90	110	
W	182	159	No Gas	23.664	ppb	0.9	334102.48	25	94.66	90	110	
Hg	201	159	He	2.460	ppb	1.4	4183.87	2.5	98.4	90	110	
Tl	205	159	No Gas	244.187	ppb	2.6	7738295.53	250	97.67	90	110	
Pb	208	159	No Gas	245.397	ppb	1.1	10658730.14	250	98.16	90	110	
U	238	159	No Gas	237.646	ppb	2.1	10535033.47	250	95.06	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1659269.00	1.9	1681799.59	98.66	60	120	
Sc	45	No Gas	4569922.33	1.1	4617155.5	98.98	60	120	
Sc	45	H2	2952344.00	1.1	2972542.08	99.32	60	120	
Sc	45	He	504175.81	0.6	522068.73	96.57	60	120	
Ge	72	No Gas	1194886.84	1.8	1192516.67	100.2	60	120	
Ge	72	H2	892579.79	1.5	914687.13	97.58	60	120	
Ge	72	He	336801.37	0.7	344471.49	97.77	60	120	
In	115	No Gas	7352597.37	0.7	7470718.61	98.42	60	120	
Tb	159	No Gas	10053323.21	0.6	10030832.66	100.22	60	120	
Tb	159	He	6746505.83	0.5	6703669.67	100.64	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB1
File Name	H6L18016.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 10:09:09
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	97446.48	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	76.67	0.08	
B	11	6	No Gas	0.084	ppb	139.8	3891.65	4	
Na	23	45	H2	<0.000	ppb	N/A	532809.85	40	
Mg	24	45	No Gas	<0.000	ppb	N/A	43863.16	10	
Al	27	45	No Gas	<0.000	ppb	N/A	28146.31	15	
Si	28	45	H2	1.031	ppb	18.3	14316.70	8	
P	31	45	No Gas	<0.000	ppb	N/A	22052.82	10	
K	39	45	He	6.671	ppb	54.9	111972.01	20	
Ca	40	45	H2	<0.000	ppb	N/A	95124.73	25	
Ti	47	45	No Gas	<0.000	ppb	N/A	174.67	0.5	
V	51	45	He	0.061	ppb	8.4	5723.19	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1726.11	0.2	
Mn	55	45	No Gas	<0.000	ppb	N/A	12547.21	0.2	
Fe	56	45	H2	<0.000	ppb	N/A	32942.27	10	
Co	59	45	No Gas	<0.000	ppb	N/A	505.35	0.15	
Ni	60	45	He	<0.000	ppb	N/A	275.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	2027.49	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	1296.73	2	
As	75	72	He	0.005	ppb	174.6	324.33	0.2	
Se	78	72	H2	<0.000	ppb	N/A	43.00	0.2	
Sr	88	72	No Gas	<0.000	ppb	N/A	3088.14	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	193.33	2	
Mo	95	115	No Gas	0.006	ppb	134.1	272.23	0.2	
Ag	107	115	No Gas	<0.000	ppb	N/A	123.33	0.08	
Cd	111	115	No Gas	0.024	ppb	73.3	233.99	0.2	
Sn	118	115	No Gas	0.017	ppb	51.3	1714.56	0.2	
Sb	123	115	No Gas	<0.000	ppb	N/A	216.67	0.4	
Ba	137	115	No Gas	<0.000	ppb	N/A	267.78	0.2	
W	182	159	No Gas	0.001	ppb	1825.9	536.68	0.3	
Hg	201	159	He	0.006	ppb	23.4	33.67	0.1	
Tl	205	159	No Gas	0.023	ppb	94.6	2844.79	0.1	
Pb	208	159	No Gas	0.005	ppb	233.8	5090.43	0.1	
U	238	159	No Gas	<0.000	ppb	N/A	826.70	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1682475.00	1.1	1681799.59	100.04	60	120	
Sc	45	No Gas	4556689.83	1.7	4617155.5	98.69	60	120	
Sc	45	H2	2944126.58	0.7	2972542.08	99.04	60	120	
Sc	45	He	504609.00	0.9	522068.73	96.66	60	120	
Ge	72	No Gas	1180088.54	1.1	1192516.67	98.96	60	120	
Ge	72	H2	894029.77	1.0	914687.13	97.74	60	120	
Ge	72	He	336614.81	1.1	344471.49	97.72	60	120	
In	115	No Gas	7507755.60	0.5	7470718.61	100.5	60	120	
Tb	159	No Gas	10045834.60	1.9	10030832.66	100.15	60	120	
Tb	159	He	6772768.50	0.7	6703669.67	101.03	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV5
File Name	H6L18056.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 12:01:04
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.795	ppb	3.3	309853.63	25	95.18	90	110	
Be	9	6	No Gas	25.019	ppb	2.3	68265.29	25	100.08	90	110	
B	11	6	No Gas	47.272	ppb	3.7	90181.89	50	94.54	90	110	
Na	23	45	H2	24612.496	ppb	0.8	119379120.00	25000	98.45	90	110	
Mg	24	45	No Gas	23867.286	ppb	2.0	279810154.67	25000	95.47	90	110	
Al	27	45	No Gas	23496.373	ppb	2.2	355394981.37	25000	93.99	90	110	
Si	28	45	H2	2382.778	ppb	1.1	3419016.83	2500	95.31	90	110	
P	31	45	No Gas	237.273	ppb	1.5	219853.36	250	94.91	90	110	
K	39	45	He	24863.852	ppb	2.6	18237988.00	25000	99.46	90	110	
Ca	40	45	H2	23945.521	ppb	0.8	244842416.00	25000	95.78	90	110	
Ti	47	45	No Gas	235.048	ppb	1.2	433457.47	250	94.02	90	110	
V	51	45	He	251.371	ppb	2.7	1629408.45	250	100.55	90	110	
Cr	52	45	He	254.390	ppb	3.7	1892997.83	250	101.76	90	110	
Mn	55	45	No Gas	1452.868	ppb	1.4	45265617.33	1500	96.86	90	110	
Fe	56	45	H2	24404.035	ppb	1.0	401867488.00	25000	97.62	90	110	
Co	59	45	No Gas	242.572	ppb	1.3	6374158.83	250	97.03	90	110	
Ni	60	45	He	254.311	ppb	3.8	718560.29	250	101.72	90	110	
Cu	63	45	He	259.084	ppb	3.1	1937030.04	250	103.63	90	110	
Zn	66	72	No Gas	236.357	ppb	2.0	1012655.96	250	94.54	90	110	
As	75	72	He	246.990	ppb	1.4	314171.51	250	98.8	90	110	
Se	78	72	H2	249.253	ppb	1.3	116882.54	250	99.7	90	110	
Sr	88	72	No Gas	242.095	ppb	2.0	8588082.99	250	96.84	90	110	
Zr	90	72	No Gas	23.640	ppb	1.2	538329.17	25	94.56	90	110	
Mo	95	115	No Gas	238.670	ppb	1.9	1704811.80	250	95.47	90	110	
Ag	107	115	No Gas	23.771	ppb	0.9	437520.94	25	95.08	90	110	
Cd	111	115	No Gas	237.129	ppb	0.7	905029.11	250	94.85	90	110	
Sn	118	115	No Gas	238.839	ppb	0.4	2671507.81	250	95.54	90	110	
Sb	123	115	No Gas	46.736	ppb	2.4	625200.15	50	93.47	90	110	
Ba	137	115	No Gas	480.020	ppb	1.7	2647594.55	500	96	90	110	
W	182	159	No Gas	23.082	ppb	0.7	330322.22	25	92.33	90	110	
Hg	201	159	He	2.468	ppb	1.4	4148.86	2.5	98.72	90	110	
Tl	205	159	No Gas	239.836	ppb	1.6	7704224.97	250	95.93	90	110	
Pb	208	159	No Gas	240.990	ppb	1.7	10609524.84	250	96.4	90	110	
U	238	159	No Gas	234.851	ppb	0.7	10552332.36	250	93.94	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1646309.80	0.6	1681799.59	97.89	60	120	
Sc	45	No Gas	4593429.00	1.3	4617155.5	99.49	60	120	
Sc	45	H2	2957642.25	1.1	2972542.08	99.5	60	120	
Sc	45	He	492304.28	2.7	522068.73	94.3	60	120	
Ge	72	No Gas	1199693.38	0.6	1192516.67	100.6	60	120	
Ge	72	H2	890802.79	0.4	914687.13	97.39	60	120	
Ge	72	He	328633.81	1.6	344471.49	95.4	60	120	
In	115	No Gas	7312581.69	1.0	7470718.61	97.88	60	120	
Tb	159	No Gas	10189339.60	1.6	10030832.66	101.58	60	120	
Tb	159	He	6668943.83	1.7	6703669.67	99.48	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB5
File Name	H6L18057.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 12:03:41
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	98404.22	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	80.00	0.08	
B	11	6	No Gas	0.154	ppb	152.1	4048.37	4	
Na	23	45	H2	<0.000	ppb	N/A	538248.94	40	
Mg	24	45	No Gas	1.472	ppb	162.0	77341.18	10	
Al	27	45	No Gas	1.909	ppb	121.8	71769.44	15	
Si	28	45	H2	<0.000	ppb	N/A	12559.66	8	
P	31	45	No Gas	3.128	ppb	16.4	24818.14	10	
K	39	45	He	3.488	ppb	132.5	107869.08	20	
Ca	40	45	H2	<0.000	ppb	N/A	99250.38	25	
Ti	47	45	No Gas	0.029	ppb	89.7	248.00	0.5	
V	51	45	He	<0.000	ppb	N/A	5065.60	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1462.75	0.2	
Mn	55	45	No Gas	0.148	ppb	97.5	17945.68	0.2	
Fe	56	45	H2	<0.000	ppb	N/A	39462.27	10	
Co	59	45	No Gas	0.019	ppb	124.2	1274.07	0.15	
Ni	60	45	He	<0.000	ppb	N/A	260.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1606.10	0.4	
Zn	66	72	No Gas	0.049	ppb	56.7	1592.10	2	
As	75	72	He	0.020	ppb	63.4	334.67	0.2	
Se	78	72	H2	0.016	ppb	75.5	51.33	0.2	
Sr	88	72	No Gas	<0.000	ppb	N/A	4057.31	0.2	
Zr	90	72	No Gas	0.000	ppb	2815.2	243.33	2	
Mo	95	115	No Gas	0.030	ppb	80.1	448.90	0.2	
Ag	107	115	No Gas	0.003	ppb	57.5	198.89	0.08	
Cd	111	115	No Gas	0.064	ppb	54.4	390.47	0.2	
Sn	118	115	No Gas	0.023	ppb	113.3	1791.24	0.2	
Sb	123	115	No Gas	0.008	ppb	76.2	335.56	0.4	
Ba	137	115	No Gas	0.018	ppb	225.8	581.13	0.2	
W	182	159	No Gas	0.018	ppb	59.6	786.70	0.3	
Hg	201	159	He	0.002	ppb	31.5	27.83	0.1	
Tl	205	159	No Gas	0.044	ppb	86.0	3496.10	0.1	
Pb	208	159	No Gas	0.012	ppb	192.6	5383.81	0.1	
U	238	159	No Gas	0.024	ppb	78.9	2091.31	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
LI	6	No Gas	1694105.23	1.6	1681799.59	100.73	60	120	
Sc	45	No Gas	4543941.67	1.8	4617155.5	98.41	60	120	
Sc	45	H2	2929881.25	0.5	2972542.08	98.56	60	120	
Sc	45	He	496677.86	0.7	522068.73	95.14	60	120	
Ge	72	No Gas	1178864.33	1.3	1192516.67	98.86	60	120	
Ge	72	H2	887350.00	1.5	914687.13	97.01	60	120	
Ge	72	He	328289.62	1.2	344471.49	95.3	60	120	
In	115	No Gas	7571171.87	2.3	7470718.61	101.34	60	120	
Tb	159	No Gas	10035568.21	2.1	10030832.66	100.05	60	120	
Tb	159	He	6755638.67	0.2	6703669.67	100.78	60	120	

Blank Report

Sample Name	IML016WB
File Name	H6L18058.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 12:06:17
Sample Type	Blank
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	99348.30	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	50.00	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	3681.60	4	
Na	23	45	H2	113.256	ppb	1.9	1101908.04	40	>1/2LOQ
Mg	24	45	No Gas	21.860	ppb	2.9	315280.92	10	>1/2LOQ
Al	27	45	No Gas	<0.000	ppb	N/A	34780.13	15	
Si	28	45	H2	<0.000	ppb	N/A	11771.65	8	
P	31	45	No Gas	3.626	ppb	18.0	25330.40	10	
K	39	45	He	8.179	ppb	37.4	112060.80	20	
Ca	40	45	H2	70.124	ppb	1.4	850137.19	25	>1/2LOQ
Ti	47	45	No Gas	0.045	ppb	12.6	275.33	0.5	
V	51	45	He	<0.000	ppb	N/A	5157.64	0.5	
Cr	52	45	He	0.007	ppb	147.6	1970.14	0.2	
Mn	55	45	No Gas	<0.000	ppb	N/A	11324.70	0.2	
Fe	56	45	H2	<0.000	ppb	N/A	36745.94	10	
Co	59	45	No Gas	<0.000	ppb	N/A	248.00	0.15	
Ni	60	45	He	0.029	ppb	10.9	442.68	0.2	
Cu	63	45	He	0.011	ppb	28.1	2512.23	0.4	
Zn	66	72	No Gas	0.684	ppb	6.1	4293.35	2	
As	75	72	He	<0.000	ppb	N/A	273.00	0.2	
Se	78	72	H2	<0.000	ppb	N/A	27.33	0.2	
Sr	88	72	No Gas	0.890	ppb	2.2	35622.91	0.2	>1/2LOQ
Zr	90	72	No Gas	<0.000	ppb	N/A	203.33	2	
Mo	95	115	No Gas	<0.000	ppb	N/A	101.11	0.2	
Ag	107	115	No Gas	0.056	ppb	2.5	1220.06	0.08	
Cd	111	115	No Gas	<0.000	ppb	N/A	99.97	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	1165.61	0.2	
Sb	123	115	No Gas	0.002	ppb	111.6	256.67	0.4	
Ba	137	115	No Gas	0.112	ppb	13.1	1122.27	0.2	
W	182	159	No Gas	0.004	ppb	102.6	580.02	0.3	
Hg	201	159	He	0.002	ppb	22.2	26.67	0.1	
Tl	205	159	No Gas	<0.000	ppb	N/A	963.37	0.1	
Pb	208	159	No Gas	<0.000	ppb	N/A	3666.89	0.1	
U	238	159	No Gas	<0.000	ppb	N/A	256.67	0.05	

Blank Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1711411.80	1.3	1681799.59	101.76	60	120	
Sc	45	No Gas	4561872.67	0.6	4617155.5	98.8	60	120	
Sc	45	H2	2933927.42	1.5	2972542.08	98.7	60	120	
Sc	45	He	499855.00	1.0	522068.73	95.75	60	120	
Ge	72	No Gas	1187021.62	1.3	1192516.67	99.54	60	120	
Ge	72	H2	896671.08	0.4	914687.13	98.03	60	120	
Ge	72	He	333441.86	0.9	344471.49	96.8	60	120	
In	115	No Gas	7585099.38	1.5	7470718.61	101.53	60	120	
Tb	159	No Gas	10053163.49	1.4	10030832.66	100.22	60	120	
Tb	159	He	6723264.67	0.3	6703669.67	100.29	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IML016WL
File Name	H6L18059.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 12:08:51
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	28.771	ppb	3.6	369570.06	30	95.9	85	115	
Be	9	6	No Gas	29.374	ppb	3.1	83564.41	30	97.91	83	121	
B	11	6	No Gas	25.798	ppb	5.5	53056.95	30	85.99	85	115	
Na	23	45	H2	3198.450	ppb	1.2	15784552.00	3000	106.62	85	117	
Mg	24	45	No Gas	3082.176	ppb	0.5	36242202.67	3000	102.74	83	118	
Al	27	45	No Gas	2962.541	ppb	0.4	44912129.33	3000	98.75	84	117	
Si	28	45	H2	1.449	ppb	14.8	14771.85	3000	0.05	85	115	FAIL
P	31	45	No Gas	3.894	ppb	20.5	25761.86	300	1.3	85	115	FAIL
K	39	45	He	3147.244	ppb	2.6	2406763.17	3000	104.91	87	115	
Ca	40	45	H2	3171.254	ppb	1.1	32101282.00	3000	105.71	87	118	
Ti	47	45	No Gas	28.907	ppb	2.0	53570.43	30	96.36	85	115	
V	51	45	He	30.348	ppb	3.5	201841.43	30	101.16	86	115	
Cr	52	45	He	31.286	ppb	2.5	235192.88	30	104.29	85	116	
Mn	55	45	No Gas	29.464	ppb	1.8	932870.08	30	98.21	87	115	
Fe	56	45	H2	3112.412	ppb	0.9	50597876.00	3000	103.75	87	118	
Co	59	45	No Gas	29.811	ppb	0.6	785255.66	30	99.37	86	115	
Ni	60	45	He	31.909	ppb	3.3	90739.84	30	106.36	85	117	
Cu	63	45	He	33.021	ppb	2.2	249719.90	30	110.07	85	118	
Zn	66	72	No Gas	59.050	ppb	2.2	254681.30	60	98.42	83	119	
As	75	72	He	30.188	ppb	2.4	39050.30	30	100.63	84	116	
Se	78	72	H2	30.043	ppb	0.8	14316.93	30	100.14	80	120	
Sr	88	72	No Gas	31.060	ppb	1.6	1108259.75	30	103.53	85	115	
Zr	90	72	No Gas	0.011	ppb	40.4	490.01	30	0.04	85	115	FAIL
Mo	95	115	No Gas	28.067	ppb	2.3	204558.49	30	93.56	85	115	
Ag	107	115	No Gas	29.369	ppb	2.3	550979.98	30	97.9	85	117	
Cd	111	115	No Gas	28.524	ppb	2.3	111103.99	30	95.08	87	115	
Sn	118	115	No Gas	28.409	ppb	3.1	325274.91	30	94.7	85	115	
Sb	123	115	No Gas	28.197	ppb	2.1	384599.66	30	93.99	85	117	
Ba	137	115	No Gas	28.886	ppb	1.3	162828.36	30	96.29	86	114	
W	182	159	No Gas	0.018	ppb	39.9	780.03	30	0.06	85	115	FAIL
Hg	201	159	He	<0.000	ppb	N/A	23.17	2.5	0	82	119	FAIL
Tl	205	159	No Gas	29.881	ppb	1.4	942102.26	30	99.6	82	116	
Pb	208	159	No Gas	30.098	ppb	1.1	1302115.12	30	100.33	88	115	
U	238	159	No Gas	28.891	ppb	2.0	1272554.50	30	96.3	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1716523.08	1.0	1681799.59	102.06	60	120	
Sc	45	No Gas	4600693.00	2.1	4617155.5	99.64	60	120	
Sc	45	H2	2917068.33	1.0	2972542.08	98.13	60	120	
Sc	45	He	493748.49	2.8	522068.73	94.58	60	120	
Ge	72	No Gas	1202366.95	1.6	1192516.67	100.83	60	120	
Ge	72	H2	902815.81	0.4	914687.13	98.7	60	120	
Ge	72	He	331961.00	2.9	344471.49	96.37	60	120	
In	115	No Gas	7454007.25	1.1	7470718.61	99.78	60	120	
Tb	159	No Gas	9982564.33	2.4	10030832.66	99.52	60	120	
Tb	159	He	6642683.33	2.0	6703669.67	99.09	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IML016WC
File Name	H6L18060.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 12:11:26
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.447	ppb	0.8	369901.58	30	98.16	85	115	
Be	9	6	No Gas	30.042	ppb	0.9	84093.08	30	100.14	83	121	
B	11	6	No Gas	26.813	ppb	2.8	54145.58	30	89.38	85	115	
Na	23	45	H2	3207.727	ppb	0.8	15708282.33	3000	106.92	85	117	
Mg	24	45	No Gas	3145.696	ppb	1.7	35994185.33	3000	104.86	83	118	
Al	27	45	No Gas	3011.324	ppb	1.4	44429667.67	3000	100.38	84	117	
Si	28	45	H2	1.552	ppb	19.0	14802.56	3000	0.05	85	115	FAIL
P	31	45	No Gas	4.261	ppb	29.6	25381.11	300	1.42	85	115	FAIL
K	39	45	He	3101.490	ppb	1.1	2400700.58	3000	103.38	87	115	
Ca	40	45	H2	3159.091	ppb	1.6	31733074.67	3000	105.3	87	118	
Ti	47	45	No Gas	29.318	ppb	2.4	52850.20	30	97.73	85	115	
V	51	45	He	30.105	ppb	0.3	202614.56	30	100.35	86	115	
Cr	52	45	He	31.317	ppb	0.2	238148.39	30	104.39	85	116	
Mn	55	45	No Gas	30.389	ppb	1.4	935796.56	30	101.3	87	115	
Fe	56	45	H2	3136.465	ppb	1.9	50595581.33	3000	104.55	87	118	
Co	59	45	No Gas	30.643	ppb	1.7	785441.92	30	102.14	86	115	
Ni	60	45	He	31.449	ppb	1.1	90482.18	30	104.83	85	117	
Cu	63	45	He	32.208	ppb	1.4	246431.39	30	107.36	85	118	
Zn	66	72	No Gas	59.804	ppb	0.7	254797.08	60	99.67	83	119	
As	75	72	He	29.880	ppb	0.9	39026.89	30	99.6	84	116	
Se	78	72	H2	30.674	ppb	0.6	14445.40	30	102.25	80	120	
Sr	88	72	No Gas	31.554	ppb	1.1	1111945.75	30	105.18	85	115	
Zr	90	72	No Gas	0.009	ppb	16.1	446.68	30	0.03	85	115	FAIL
Mo	95	115	No Gas	27.936	ppb	0.3	202826.78	30	93.12	85	115	
Ag	107	115	No Gas	29.702	ppb	0.8	555136.25	30	99.01	85	117	
Cd	111	115	No Gas	28.696	ppb	0.6	111330.85	30	95.65	87	115	
Sn	118	115	No Gas	28.335	ppb	0.9	323123.38	30	94.45	85	115	
Sb	123	115	No Gas	28.512	ppb	0.5	387369.97	30	95.04	85	117	
Ba	137	115	No Gas	28.966	ppb	0.9	162661.83	30	96.55	86	114	
W	182	159	No Gas	0.016	ppb	28.8	743.36	30	0.05	85	115	FAIL
Hg	201	159	He	<0.000	ppb	N/A	19:17	2.5	-0.12	82	119	FAIL
Tl	205	159	No Gas	30.467	ppb	3.0	949027.53	30	101.56	82	116	
Pb	208	159	No Gas	30.476	ppb	2.9	1302772.32	30	101.59	88	115	
U	238	159	No Gas	29.338	ppb	3.0	1276780.75	30	97.79	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1689571.48	3.7	1681799.59	100.46	60	120	
Sc	45	No Gas	4479557.17	4.6	4617155.5	97.02	60	120	
Sc	45	H2	2894777.50	1.0	2972542.08	97.38	60	120	
Sc	45	He	499223.97	0.3	522068.73	95.62	60	120	
Ge	72	No Gas	1187934.79	3.1	1192516.67	99.62	60	120	
Ge	72	H2	892231.33	0.6	914687.13	97.54	60	120	
Ge	72	He	334999.66	0.2	344471.49	97.25	60	120	
In	115	No Gas	7426006.96	2.5	7470718.61	99.4	60	120	
Tb	159	No Gas	9869886.00	3.9	10030832.66	98.4	60	120	
Tb	159	He	6686139.17	0.9	6703669.67	99.74	60	120	

Sample Report

Sample Name	L159-03I
File Name	H6L18062.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 12:16:37
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fall	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	467.055	46.706	ppb	2.9	520461.39	50	>LDR
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	50.00	50	
B	11	6	No Gas	1449.537	144.954	ppb	4.8	271915.55	100	>LDR
Na	23	45	H2	1585879.457	158587.946	ppb	1.0	747733802.67	50000	>LDR
Mg	24	45	No Gas	1275.654	127.565	ppb	2.8	1523655.88	50000	
Al	27	45	No Gas	<0.000	<0.000	ppb	N/A	20388.33	50000	
Si	28	45	H2	11511.065	1151.106	ppb	0.0	1618645.96	5000	
P	31	45	No Gas	42.998	4.300	ppb	2.3	25518.74	500	
K	39	45	He	17565.492	1756.549	ppb	1.4	1428523.71	50000	
Ca	40	45	H2	57763.899	5776.390	ppb	1.4	57748110.67	50000	
Ti	47	45	No Gas	0.494	0.049	ppb	35.7	280.00	500	
V	51	45	He	5.689	0.569	ppb	3.6	9141.05	500	
Cr	52	45	He	8.813	0.881	ppb	3.6	8698.10	500	
Mn	55	45	No Gas	1.085	0.108	ppb	6.7	16591.38	3000	
Fe	56	45	H2	<0.000	<0.000	ppb	N/A	21587.75	50000	
Co	59	45	No Gas	<0.000	<0.000	ppb	N/A	318.67	500	
Ni	60	45	He	<0.000	<0.000	ppb	N/A	289.33	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2016.15	500	
Zn	66	72	No Gas	1.387	0.139	ppb	9.9	1978.15	500	
As	75	72	He	8.123	0.812	ppb	1.8	1383.40	500	
Se	78	72	H2	0.119	0.012	ppb	132.2	49.33	500	
Sr	88	72	No Gas	1427.780	142.778	ppb	1.3	4996160.77	500	
Zr	90	72	No Gas	0.013	0.001	ppb	186.4	270.00	50	
Mo	95	115	No Gas	57.484	5.748	ppb	2.8	40643.09	500	
Ag	107	115	No Gas	0.054	0.005	ppb	46.0	235.56	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	35.83	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	997.82	500	
Sb	123	115	No Gas	0.064	0.006	ppb	45.4	294.45	100	
Ba	137	115	No Gas	41.154	4.115	ppb	2.1	22804.46	1000	
W	182	159	No Gas	2.650	0.265	ppb	5.8	4164.03	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	16.00	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	562.24	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	2201.18	500	
U	238	159	No Gas	2.373	0.237	ppb	5.0	11311.90	497	

Sample Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1663691.11	1.0	1681799.59	98.92	60	120	
Sc	45	No Gas	4496566.33	1.1	4617155.5	97.39	60	120	
Sc	45	H2	2886576.08	1.0	2972542.08	97.11	60	120	
Sc	45	He	507472.57	2.0	522068.73	97.2	60	120	
Ge	72	No Gas	1182876.58	1.5	1192516.67	99.19	60	120	
Ge	72	H2	883090.38	1.2	914687.13	96.55	60	120	
Ge	72	He	338636.93	1.1	344471.49	98.31	60	120	
In	115	No Gas	7200203.75	1.4	7470718.61	96.38	60	120	
Tb	159	No Gas	9822819.33	1.6	10030832.66	97.93	60	120	
Tb	159	He	6638416.83	1.5	6703669.67	99.03	60	120	

Sample Report

Sample Name	L159-04I
File Name	H6L18063.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 12:19:12
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	445.807	44.581	ppb	4.1	519420.48	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	57.78	50	
B	11	6	No Gas	1423.804	142.380	ppb	4.2	276780.89	100	>LDR
Na	23	45	H2	1514115.863	151411.586	ppb	1.3	739362090.67	50000	>LDR
Mg	24	45	No Gas	1287.409	128.741	ppb	1.7	1561716.38	50000	
Al	27	45	No Gas	<0.000	<0.000	ppb	N/A	21202.87	50000	
Si	28	45	H2	11051.823	1105.182	ppb	1.3	1609899.21	5000	
P	31	45	No Gas	42.239	4.224	ppb	12.0	25856.02	500	
K	39	45	He	17776.091	1777.609	ppb	1.3	1447981.91	50000	
Ca	40	45	H2	55244.718	5524.472	ppb	0.8	57206320.00	50000	
Ti	47	45	No Gas	0.373	0.037	ppb	42.4	262.00	500	
V	51	45	He	6.552	0.655	ppb	3.1	9739.46	500	
Cr	52	45	He	8.953	0.895	ppb	2.1	8828.18	500	
Mn	55	45	No Gas	1.061	0.106	ppb	7.5	16779.62	3000	
Fe	56	45	H2	<0.000	<0.000	ppb	N/A	20743.72	50000	
Co	59	45	No Gas	<0.000	<0.000	ppb	N/A	316.67	500	
Ni	60	45	He	<0.000	<0.000	ppb	N/A	274.67	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2268.86	500	
Zn	66	72	No Gas	1.959	0.196	ppb	14.0	2247.52	500	
As	75	72	He	7.451	0.745	ppb	4.9	1296.40	500	
Se	78	72	H2	0.289	0.029	ppb	60.9	58.33	500	
Sr	88	72	No Gas	1399.769	139.977	ppb	2.3	4962105.36	500	
Zr	90	72	No Gas	0.004	0.000	ppb	463.8	253.33	50	
Mo	95	115	No Gas	56.998	5.700	ppb	0.8	40315.40	500	
Ag	107	115	No Gas	0.065	0.006	ppb	21.6	254.45	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	28.69	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	973.37	500	
Sb	123	115	No Gas	0.067	0.007	ppb	15.5	298.89	100	
Ba	137	115	No Gas	40.095	4.010	ppb	1.2	22236.82	1000	
W	182	159	No Gas	3.330	0.333	ppb	8.4	5107.72	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	12.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	468.90	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	2200.09	500	
U	238	159	No Gas	2.303	0.230	ppb	2.5	11021.64	497	

Sample Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1724065.07	1.4	1681799.59	102.51	60	120	
Sc	45	No Gas	4568142.00	2.0	4617155.5	98.94	60	120	
Sc	45	H2	2989469.42	0.7	2972542.08	100.57	60	120	
Sc	45	He	508685.05	1.1	522068.73	97.44	60	120	
Ge	72	No Gas	1198397.83	1.8	1192516.67	100.49	60	120	
Ge	72	H2	901318.17	0.5	914687.13	98.54	60	120	
Ge	72	He	338879.66	0.5	344471.49	98.38	60	120	
In	115	No Gas	7202294.42	1.7	7470718.61	96.41	60	120	
Tb	159	No Gas	9835346.55	1.8	10030832.66	98.05	60	120	
Tb	159	He	6675304.67	0.6	6703669.67	99.58	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV6
File Name	H6L18068.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 12:32:08
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.214	ppb	1.8	330563.06	25	92.86	90	110	
Be	9	6	No Gas	24.074	ppb	0.5	71274.37	25	96.3	90	110	
B	11	6	No Gas	50.401	ppb	1.4	104072.76	50	100.8	90	110	
Na	23	45	H2	24987.184	ppb	0.3	120610597.33	25000	99.95	90	110	
Mg	24	45	No Gas	25119.360	ppb	0.5	291237973.33	25000	100.48	90	110	
Al	27	45	No Gas	24693.849	ppb	1.3	369406914.49	25000	98.78	90	110	
Si	28	45	H2	2448.421	ppb	0.6	3496178.17	2500	97.94	90	110	
P	31	45	No Gas	248.853	ppb	0.3	226953.03	250	99.54	90	110	
K	39	45	He	25103.797	ppb	0.8	18549640.67	25000	100.42	90	110	
Ca	40	45	H2	24367.513	ppb	0.5	247968320.00	25000	97.47	90	110	
Ti	47	45	No Gas	239.386	ppb	1.1	436622.92	250	95.75	90	110	
V	51	45	He	250.575	ppb	0.9	1636394.96	250	100.23	90	110	
Cr	52	45	He	251.865	ppb	0.2	1888552.29	250	100.75	90	110	
Mn	55	45	No Gas	1486.118	ppb	1.4	45796256.00	1500	99.07	90	110	
Fe	56	45	H2	24567.085	ppb	0.8	402612757.33	25000	98.27	90	110	
Co	59	45	No Gas	246.664	ppb	1.3	6410886.50	250	98.67	90	110	
Ni	60	45	He	250.045	ppb	1.0	711915.89	250	100.02	90	110	
Cu	63	45	He	253.866	ppb	0.5	1912259.12	250	101.55	90	110	
Zn	66	72	No Gas	241.977	ppb	0.8	1016961.25	250	96.79	90	110	
As	75	72	He	246.044	ppb	0.7	315324.76	250	98.42	90	110	
Se	78	72	H2	247.375	ppb	1.0	115046.83	250	98.95	90	110	
Sr	88	72	No Gas	245.681	ppb	0.6	8549289.66	250	98.27	90	110	
Zr	90	72	No Gas	23.820	ppb	1.5	532003.18	25	95.28	90	110	
Mo	95	115	No Gas	240.996	ppb	0.3	1684749.00	250	96.4	90	110	
Ag	107	115	No Gas	24.118	ppb	0.8	434454.87	25	96.47	90	110	
Cd	111	115	No Gas	238.516	ppb	0.2	891057.63	250	95.41	90	110	
Sn	118	115	No Gas	244.089	ppb	0.7	2672155.38	250	97.64	90	110	
Sb	123	115	No Gas	47.530	ppb	0.7	622335.32	50	95.06	90	110	
Ba	137	115	No Gas	483.831	ppb	0.7	2611858.86	500	96.77	90	110	
W	182	159	No Gas	23.639	ppb	0.8	326252.85	25	94.56	90	110	
Hg	201	159	He	2.437	ppb	1.8	4139.68	2.5	97.48	90	110	
Tl	205	159	No Gas	246.727	ppb	1.2	7642177.75	250	98.69	90	110	
Pb	208	159	No Gas	248.640	ppb	1.9	10554662.02	250	99.46	90	110	
U	238	159	No Gas	241.342	ppb	2.3	10454245.42	250	96.54	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1786184.11	1.1	1681799.59	106.21	60	120	
Sc	45	No Gas	4543073.33	1.8	4617155.5	98.4	60	120	
Sc	45	H2	2943360.58	0.4	2972542.08	99.02	60	120	
Sc	45	He	495739.21	0.5	522068.73	94.96	60	120	
Ge	72	No Gas	1177016.25	2.9	1192516.67	98.7	60	120	
Ge	72	H2	883494.77	0.5	914687.13	96.59	60	120	
Ge	72	He	331066.56	0.3	344471.49	96.11	60	120	
In	115	No Gas	7157757.45	2.3	7470718.61	95.81	60	120	
Tb	159	No Gas	9829081.83	3.5	10030832.66	97.99	60	120	
Tb	159	He	6735519.83	0.7	6703669.67	100.48	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB6
File Name	H6L18069.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 12:34:45
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	103955.73	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	45.56	0.08	
B	11	6	No Gas	2.049	ppb	11.9	8153.48	4	
Na	23	45	H2	22.914	ppb	4.2	668005.92	40	
Mg	24	45	No Gas	<0.000	ppb	N/A	43985.13	10	
Al	27	45	No Gas	<0.000	ppb	N/A	28114.97	15	
Si	28	45	H2	<0.000	ppb	N/A	12553.00	8	
P	31	45	No Gas	4.745	ppb	31.0	26467.18	10	
K	39	45	He	5.995	ppb	47.0	111492.21	20	
Ca	40	45	H2	<0.000	ppb	N/A	98314.87	25	
Ti	47	45	No Gas	<0.000	ppb	N/A	183.33	0.5	
V	51	45	He	<0.000	ppb	N/A	5014.92	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1488.08	0.2	
Mn	55	45	No Gas	<0.000	ppb	N/A	12365.64	0.2	
Fe	56	45	H2	<0.000	ppb	N/A	35220.61	10	
Co	59	45	No Gas	<0.000	ppb	N/A	553.35	0.15	
Ni	60	45	He	<0.000	ppb	N/A	228.00	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1636.77	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	1368.74	2	
As	75	72	He	0.012	ppb	83.2	325.67	0.2	
Se	78	72	H2	<0.000	ppb	N/A	35.67	0.2	
Sr	88	72	No Gas	<0.000	ppb	N/A	2931.44	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	136.67	2	
Mo	95	115	No Gas	0.000	ppb	5490.3	227.78	0.2	
Ag	107	115	No Gas	<0.000	ppb	N/A	106.67	0.08	
Cd	111	115	No Gas	0.031	ppb	43.4	255.94	0.2	
Sn	118	115	No Gas	0.004	ppb	192.1	1540.09	0.2	
Sb	123	115	No Gas	<0.000	ppb	N/A	204.45	0.4	
Ba	137	115	No Gas	<0.000	ppb	N/A	254.45	0.2	
W	182	159	No Gas	0.008	ppb	109.8	636.69	0.3	
Hg	201	159	He	0.004	ppb	16.1	29.67	0.1	
Tl	205	159	No Gas	<0.000	ppb	N/A	2112.41	0.1	
Pb	208	159	No Gas	<0.000	ppb	N/A	3771.34	0.1	
U	238	159	No Gas	<0.000	ppb	N/A	886.70	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
LI	6	No Gas	1813116.11	1.3	1681799.59	107.81	60	120	
Sc	45	No Gas	4603069.33	3.2	4617155.5	99.69	60	120	
Sc	45	H2	2928093.67	0.8	2972542.08	98.5	60	120	
Sc	45	He	504653.32	0.2	522068.73	96.66	60	120	
Ge	72	No Gas	1184869.71	2.1	1192516.67	99.36	60	120	
Ge	72	H2	880619.12	0.7	914687.13	96.28	60	120	
Ge	72	He	328529.46	0.6	344471.49	95.37	60	120	
In	115	No Gas	7393608.39	2.4	7470718.61	98.97	60	120	
Tb	159	No Gas	10083647.10	2.0	10030832.66	100.53	60	120	
Tb	159	He	6729501.33	0.4	6703669.67	100.39	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV8
File Name	H6L18086.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 13:18:54
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	22.973	ppb	2.4	351313.52	25	91.89	90	110	
Be	9	6	No Gas	22.906	ppb	1.8	72595.42	25	91.62	90	110	
B	11	6	No Gas	49.199	ppb	2.0	108837.23	50	98.4	90	110	
Na	23	45	H2	25564.676	ppb	1.2	121647472.00	25000	102.26	90	110	
Mg	24	45	No Gas	25774.436	ppb	1.2	300682986.67	25000	103.1	90	110	
Al	27	45	No Gas	24877.396	ppb	2.5	374438101.09	25000	99.51	90	110	
Si	28	45	H2	2528.715	ppb	0.5	3559738.42	2500	101.15	90	110	
P	31	45	No Gas	252.005	ppb	1.3	230980.34	250	100.8	90	110	
K	39	45	He	25216.298	ppb	1.4	18577144.67	25000	100.87	90	110	
Ca	40	45	H2	24809.890	ppb	0.6	248921152.00	25000	99.24	90	110	
Ti	47	45	No Gas	237.653	ppb	2.0	436150.84	250	95.06	90	110	
V	51	45	He	251.689	ppb	1.2	1638728.17	250	100.68	90	110	
Cr	52	45	He	255.468	ppb	2.0	1909602.42	250	102.19	90	110	
Mn	55	45	No Gas	1455.696	ppb	2.3	45131609.33	1500	97.05	90	110	
Fe	56	45	H2	25112.970	ppb	0.9	405781184.00	25000	100.45	90	110	
Co	59	45	No Gas	244.389	ppb	1.4	6391003.50	250	97.76	90	110	
Ni	60	45	He	251.879	ppb	2.1	714922.50	250	100.75	90	110	
Cu	63	45	He	256.877	ppb	1.8	1929014.83	250	102.75	90	110	
Zn	66	72	No Gas	239.347	ppb	2.0	1009188.06	250	95.74	90	110	
As	75	72	He	246.957	ppb	0.5	316125.65	250	98.78	90	110	
Se	78	72	H2	249.642	ppb	0.7	114457.87	250	99.86	90	110	
Sr	88	72	No Gas	244.421	ppb	2.6	8532114.94	250	97.77	90	110	
Zr	90	72	No Gas	23.817	ppb	2.9	533719.60	25	95.27	90	110	
Mo	95	115	No Gas	242.248	ppb	1.6	1696022.19	250	96.9	90	110	
Ag	107	115	No Gas	23.929	ppb	0.5	431663.66	25	95.72	90	110	
Cd	111	115	No Gas	237.303	ppb	0.7	887768.29	250	94.92	90	110	
Sn	118	115	No Gas	243.539	ppb	1.2	2670257.60	250	97.42	90	110	
Sb	123	115	No Gas	47.024	ppb	0.9	616620.89	50	94.05	90	110	
Ba	137	115	No Gas	490.720	ppb	0.8	2652577.95	500	98.14	90	110	
W	182	159	No Gas	23.170	ppb	0.4	324346.54	25	92.68	90	110	
Hg	201	159	He	2.439	ppb	1.7	4110.51	2.5	97.56	90	110	
Tl	205	159	No Gas	244.404	ppb	1.0	7679606.92	250	97.76	90	110	
Pb	208	159	No Gas	244.320	ppb	0.6	10521701.08	250	97.73	90	110	
U	238	159	No Gas	237.293	ppb	0.8	10429990.42	250	94.92	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1912033.48	1.6	1681799.59	113.69	60	120	
Sc	45	No Gas	4571751.33	1.4	4617155.5	99.02	60	120	
Sc	45	H2	2902105.42	0.8	2972542.08	97.63	60	120	
Sc	45	He	494325.07	1.8	522068.73	94.69	60	120	
Ge	72	No Gas	1180618.04	0.8	1192516.67	99	60	120	
Ge	72	H2	870976.81	0.4	914687.13	95.22	60	120	
Ge	72	He	330683.38	0.8	344471.49	96	60	120	
In	115	No Gas	7167801.98	1.7	7470718.61	95.95	60	120	
Tb	159	No Gas	9967802.38	0.9	10030832.66	99.37	60	120	
Tb	159	He	6685321.00	1.8	6703669.67	99.73	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB8
File Name	H6L18087.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 13:21:31
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	112365.53	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	60.00	0.08	
B	11	6	No Gas	3.059	ppb	7.5	10814.16	4	
Na	23	45	H2	224.885	ppb	1.1	1608844.13	40	>LOD
Mg	24	45	No Gas	2.836	ppb	92.6	93731.54	10	
Al	27	45	No Gas	3.120	ppb	80.0	90459.06	15	
Si	28	45	H2	0.411	ppb	58.3	13159.57	8	
P	31	45	No Gas	6.018	ppb	8.8	27366.93	10	
K	39	45	He	14.239	ppb	29.3	116251.91	20	
Ca	40	45	H2	<0.000	ppb	N/A	117326.99	25	
Ti	47	45	No Gas	0.036	ppb	63.5	259.33	0.5	
V	51	45	He	<0.000	ppb	N/A	4398.71	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1510.75	0.2	
Mn	55	45	No Gas	0.212	ppb	75.0	20043.40	0.2	>LOD
Fe	56	45	H2	0.565	ppb	17.5	63752.96	10	
Co	59	45	No Gas	0.034	ppb	83.6	1652.12	0.15	
Ni	60	45	He	<0.000	ppb	N/A	279.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1948.14	0.4	
Zn	66	72	No Gas	0.041	ppb	83.2	1559.43	2	
As	75	72	He	0.021	ppb	56.0	340.00	0.2	
Se	78	72	H2	0.019	ppb	24.5	51.67	0.2	
Sr	88	72	No Gas	0.006	ppb	473.4	4535.25	0.2	
Zr	90	72	No Gas	0.001	ppb	435.7	263.34	2	
Mo	95	115	No Gas	0.044	ppb	68.3	535.57	0.2	
Ag	107	115	No Gas	0.008	ppb	56.0	288.89	0.08	
Cd	111	115	No Gas	0.036	ppb	82.0	270.40	0.2	
Sn	118	115	No Gas	0.037	ppb	78.6	1891.25	0.2	
Sb	123	115	No Gas	0.009	ppb	42.8	340.01	0.4	
Ba	137	115	No Gas	0.037	ppb	129.0	666.69	0.2	
W	182	159	No Gas	0.010	ppb	65.8	670.02	0.3	
Hg	201	159	He	0.005	ppb	95.8	32.00	0.1	
Tl	205	159	No Gas	0.027	ppb	126.5	2940.39	0.1	
Pb	208	159	No Gas	0.048	ppb	52.9	6920.79	0.1	
U	238	159	No Gas	0.034	ppb	57.3	2541.40	0.05	

LY 12/20/21

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
LI	6	No Gas	1923971.27	1.0	1681799.59	114.4	60	120	
Sc	45	No Gas	4572323.17	1.6	4617155.5	99.03	60	120	
Sc	45	H2	2884193.50	0.4	2972542.08	97.03	60	120	
Sc	45	He	498607.54	0.2	522068.73	95.51	60	120	
Ge	72	No Gas	1177108.33	1.4	1192516.67	98.71	60	120	
Ge	72	H2	870957.75	0.2	914687.13	95.22	60	120	
Ge	72	He	331836.19	1.2	344471.49	96.33	60	120	
In	115	No Gas	7335200.84	1.5	7470718.61	98.19	60	120	
Tb	159	No Gas	9986029.05	1.7	10030832.66	99.55	60	120	
Tb	159	He	6794976.00	0.3	6703669.67	101.36	60	120	

Sample Report

Sample Name	L159-01
File Name	H6L18088.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 13:24:06
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	74.199	74.199	ppb	1.9	830923.37	50	>LDR
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	55.56	50	
B	11	6	No Gas	493.888	493.888	ppb	3.5	991366.90	100	>LDR
Na	23	45	H2	245500.107	245500.107	ppb	1.3	1171438165.33	50000	>LDR
Mg	24	45	No Gas	6923.463	6923.463	ppb	2.0	79228304.00	50000	
Al	27	45	No Gas	3.038	3.038	ppb	5.5	87842.11	50000	
Si	28	45	H2	14272.438	14272.438	ppb	2.2	20168842.00	5000	>LDR
P	31	45	No Gas	11.136	11.136	ppb	12.3	30969.81	500	
K	39	45	He	4334.080	4334.080	ppb	1.7	3304209.42	50000	
Ca	40	45	H2	28243.646	28243.646	ppb	1.3	285292853.33	50000	
Ti	47	45	No Gas	0.667	0.667	ppb	2.5	1390.07	500	
V	51	45	He	5.304	5.304	ppb	1.1	39932.01	500	
Cr	52	45	He	0.070	0.070	ppb	7.9	2429.55	500	
Mn	55	45	No Gas	624.652	624.652	ppb	2.2	18994133.33	3000	
Fe	56	45	H2	46.812	46.812	ppb	1.0	816928.48	50000	
Co	59	45	No Gas	0.093	0.093	ppb	2.9	3141.70	500	
Ni	60	45	He	0.059	0.059	ppb	26.2	526.68	500	
Cu	63	45	He	0.215	0.215	ppb	8.6	4039.27	500	
Zn	66	72	No Gas	1.715	1.715	ppb	2.5	8540.03	500	
As	75	72	He	6.346	6.346	ppb	0.8	8456.98	500	
Se	78	72	H2	0.244	0.244	ppb	8.3	157.00	500	
Sr	88	72	No Gas	595.164	595.164	ppb	2.6	20605423.62	500	>LDR
Zr	90	72	No Gas	0.066	0.066	ppb	12.4	1703.45	50	
Mo	95	115	No Gas	39.887	39.887	ppb	0.8	273727.86	500	
Ag	107	115	No Gas	0.060	0.060	ppb	8.6	1202.28	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	71.77	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1168.94	500	
Sb	123	115	No Gas	0.031	0.031	ppb	12.1	607.79	100	
Ba	137	115	No Gas	408.641	408.641	ppb	1.2	2164209.15	1000	
W	182	159	No Gas	14.028	14.028	ppb	2.1	193185.74	50	
Hg	201	159	He	0.008	0.008	ppb	52.6	36.67	5	
Tl	205	159	No Gas	0.727	0.727	ppb	0.5	24488.45	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	4024.71	500	
U	238	159	No Gas	3.508	3.508	ppb	1.4	152550.26	497	

Sample Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1797142.66	2.3	1681799.59	106.86	60	120	
Sc	45	No Gas	4481199.50	1.0	4617155.5	97.06	60	120	
Sc	45	H2	2922100.67	0.8	2972542.08	98.3	60	120	
Sc	45	He	498019.14	1.4	522068.73	95.39	60	120	
Ge	72	No Gas	1171031.79	1.3	1192516.67	98.2	60	120	
Ge	72	H2	881872.17	0.7	914687.13	96.41	60	120	
Ge	72	He	331841.94	0.5	344471.49	96.33	60	120	
In	115	No Gas	7021377.96	1.8	7470718.61	93.99	60	120	
Tb	159	No Gas	9794133.78	1.0	10030832.66	97.64	60	120	
Tb	159	He	6569797.33	0.5	6703669.67	98	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV9
File Name	H6L18095.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 13:42:20
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.562	ppb	1.7	345309.27	25	94.25	90	110	
Be	9	6	No Gas	23.396	ppb	2.7	71632.88	25	93.58	90	110	
B	11	6	No Gas	50.745	ppb	2.0	108320.78	50	101.49	90	110	
Na	23	45	H2	25543.038	ppb	1.2	119880368.00	25000	102.17	90	110	
Mg	24	45	No Gas	25286.964	ppb	1.0	290161248.00	25000	101.15	90	110	
Al	27	45	No Gas	24743.154	ppb	2.9	366286674.54	25000	98.97	90	110	
Si	28	45	H2	2472.236	ppb	2.5	3432271.83	2500	98.89	90	110	
P	31	45	No Gas	250.533	ppb	1.0	225993.84	250	100.21	90	110	
K	39	45	He	25154.911	ppb	0.7	18432701.33	25000	100.62	90	110	
Ca	40	45	H2	24520.686	ppb	0.9	242651280.00	25000	98.08	90	110	
Ti	47	45	No Gas	236.083	ppb	1.0	426151.20	250	94.43	90	110	
V	51	45	He	249.369	ppb	0.8	1614959.58	250	99.75	90	110	
Cr	52	45	He	249.760	ppb	1.3	1857084.79	250	99.9	90	110	
Mn	55	45	No Gas	1459.052	ppb	2.1	44492297.33	1500	97.27	90	110	
Fe	56	45	H2	24775.369	ppb	1.9	394806890.67	25000	99.1	90	110	
Co	59	45	No Gas	242.937	ppb	2.1	6248409.67	250	97.17	90	110	
Ni	60	45	He	248.983	ppb	1.2	702979.23	250	99.59	90	110	
Cu	63	45	He	253.223	ppb	0.8	1891551.50	250	101.29	90	110	
Zn	66	72	No Gas	237.943	ppb	0.9	990190.10	250	95.18	90	110	
As	75	72	He	244.923	ppb	0.2	312187.55	250	97.97	90	110	
Se	78	72	H2	250.068	ppb	0.3	114587.25	250	100.03	90	110	
Sr	88	72	No Gas	242.557	ppb	2.0	8356644.67	250	97.02	90	110	
Zr	90	72	No Gas	23.425	ppb	2.8	518102.15	25	93.7	90	110	
Mo	95	115	No Gas	239.154	ppb	1.1	1650059.55	250	95.66	90	110	
Ag	107	115	No Gas	23.805	ppb	1.0	423203.65	25	95.22	90	110	
Cd	111	115	No Gas	236.872	ppb	0.6	873264.08	250	94.75	90	110	
Sn	118	115	No Gas	243.857	ppb	0.2	2634705.31	250	97.54	90	110	
Sb	123	115	No Gas	47.571	ppb	1.0	614727.29	50	95.14	90	110	
Ba	137	115	No Gas	488.666	ppb	1.6	2603461.77	500	97.73	90	110	
W	182	159	No Gas	24.310	ppb	1.1	333740.57	25	97.24	90	110	
Hg	201	159	He	2.433	ppb	2.0	4091.50	2.5	97.32	90	110	
Tl	205	159	No Gas	245.042	ppb	0.8	7551416.64	250	98.02	90	110	
Pb	208	159	No Gas	246.575	ppb	1.4	10414446.62	250	98.63	90	110	
U	238	159	No Gas	241.762	ppb	0.4	10421629.86	250	96.7	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1847172.74	0.9	1681799.59	109.83	60	120	
Sc	45	No Gas	4496537.33	0.7	4617155.5	97.39	60	120	
Sc	45	H2	2862533.92	1.5	2972542.08	96.3	60	120	
Sc	45	He	491631.47	1.1	522068.73	94.17	60	120	
Ge	72	No Gas	1165349.50	1.7	1192516.67	97.72	60	120	
Ge	72	H2	870471.73	0.3	914687.13	95.17	60	120	
Ge	72	He	329272.68	1.1	344471.49	95.59	60	120	
In	115	No Gas	7063588.88	1.4	7470718.61	94.55	60	120	
Tb	159	No Gas	9775934.06	1.4	10030832.66	97.46	60	120	
Tb	159	He	6669427.17	1.2	6703669.67	99.49	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB9
File Name	H6L18096.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 13:44:57
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.156	ppb	37.4	114128.45	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	48.89	0.08	
B	11	6	No Gas	4.299	ppb	8.4	13385.27	4	>LOD
Na	23	45	H2	222.815	ppb	0.2	1627166.83	40	>LOD
Mg	24	45	No Gas	2.484	ppb	45.0	91396.75	10	
Al	27	45	No Gas	2.912	ppb	39.5	89098.80	15	
Si	28	45	H2	1.533	ppb	8.5	14983.40	8	
P	31	45	No Gas	6.448	ppb	4.1	28195.91	10	
K	39	45	He	13.513	ppb	31.9	118134.48	20	
Ca	40	45	H2	<0.000	ppb	N/A	125145.27	25	
Tl	47	45	No Gas	0.026	ppb	11.9	246.67	0.5	
V	51	45	He	0.040	ppb	31.1	5634.49	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1606.76	0.2	
Mn	55	45	No Gas	0.205	ppb	34.1	20184.39	0.2	>LOD
Fe	56	45	H2	1.282	ppb	8.0	76586.46	10	
Co	59	45	No Gas	0.034	ppb	31.2	1688.78	0.15	
Ni	60	45	He	<0.000	ppb	N/A	292.00	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1929.47	0.4	
Zn	66	72	No Gas	0.034	ppb	50.5	1552.09	2	
As	75	72	He	0.024	ppb	63.8	344.67	0.2	
Se	78	72	H2	0.028	ppb	36.6	57.33	0.2	
Sr	88	72	No Gas	<0.000	ppb	N/A	4311.82	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	220.00	2	
Mo	95	115	No Gas	0.032	ppb	34.1	463.34	0.2	
Ag	107	115	No Gas	0.007	ppb	28.8	281.12	0.08	
Cd	111	115	No Gas	0.029	ppb	51.9	248.93	0.2	
Sn	118	115	No Gas	0.023	ppb	35.7	1777.90	0.2	
Sb	123	115	No Gas	0.006	ppb	51.4	303.34	0.4	
Ba	137	115	No Gas	0.043	ppb	40.3	717.80	0.2	
W	182	159	No Gas	0.094	ppb	14.1	1856.82	0.3	
Hg	201	159	He	0.005	ppb	53.5	32.17	0.1	
Tl	205	159	No Gas	0.016	ppb	106.6	2629.18	0.1	
Pb	208	159	No Gas	0.043	ppb	46.7	6746.30	0.1	
U	238	159	No Gas	0.032	ppb	22.0	2455.81	0.05	

LY 12/20/21

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1912358.29	0.8	1681799.59	113.71	60	120	
Sc	45	No Gas	4649764.17	0.9	4617155.5	100.71	60	120	
Sc	45	H2	2934799.58	0.4	2972542.08	98.73	60	120	
Sc	45	He	509062.38	0.4	522068.73	97.51	60	120	
Ge	72	No Gas	1196186.96	1.1	1192516.67	100.31	60	120	
Ge	72	H2	888331.50	0.7	914687.13	97.12	60	120	
Ge	72	He	332485.97	1.3	344471.49	96.52	60	120	
In	115	No Gas	7479189.87	1.3	7470718.61	100.11	60	120	
Tb	159	No Gas	10052705.15	1.1	10030832.66	100.22	60	120	
Tb	159	He	6791825.33	0.5	6703669.67	101.32	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA2
File Name	H6L18099.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 13:52:43
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.475	ppb	35.4	107399.35	2	-50	50	
Be	9	6	No Gas	<0.000	ppb	N/A	36.67	0.4	-50	50	
B	11	6	No Gas	3.628	ppb	6.8	10937.59	10	-50	50	
Na	23	45	H2	107907.511	ppb	0.7	507608096.00	100000	80	120	
Mg	24	45	No Gas	105487.671	ppb	2.1	1200448938.67	100000	80	120	
Al	27	45	No Gas	105182.727	ppb	2.7	1544405043.65	100000	80	120	
Si	28	45	H2	4.870	ppb	121.8	19317.40	50	-50	50	
P	31	45	No Gas	102486.173	ppb	2.6	82798282.67	100000	80	120	
K	39	45	He	106046.352	ppb	0.6	76747104.00	100000	80	120	
Ca	40	45	H2	106660.445	ppb	1.0	1061093461.33	100000	80	120	
Ti	47	45	No Gas	2115.587	ppb	2.0	3786264.58	2000	80	120	
V	51	45	He	<0.000	ppb	N/A	4855.53	1	-50	50	
Cr	52	45	He	2.134	ppb	0.5	17594.62	1	-50	50	> +/- 20%
Mn	55	45	No Gas	0.377	ppb	3.8	24596.77	1	-50	50	
Fe	56	45	H2	107301.067	ppb	1.4	1719701888.00	100000	80	120	
Co	59	45	No Gas	0.132	ppb	2.5	4129.96	0.75	-50	50	
Ni	60	45	He	0.107	ppb	11.5	651.35	1	-50	50	
Cu	63	45	He	0.079	ppb	16.0	2953.66	2	-50	50	
Zn	66	72	No Gas	1.926	ppb	4.6	9379.91	20	-50	50	
As	75	72	He	0.056	ppb	26.2	373.34	1	-50	50	
Se	78	72	H2	0.264	ppb	12.4	161.33	1	-50	50	
Sr	88	72	No Gas	1.096	ppb	3.8	42055.96	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.203	ppb	10.4	4730.86	10	-50	50	
Mo	95	115	No Gas	2097.927	ppb	1.8	14241131.10	2000	80	120	
Ag	107	115	No Gas	0.298	ppb	1.0	5347.76	0.4	-50	50	> +/- 20%
Cd	111	115	No Gas	0.047	ppb	65.8	297.83	1	-50	50	
Sn	118	115	No Gas	0.018	ppb	12.8	1598.99	1	-50	50	
Ba	137	115	No Gas	0.347	ppb	6.6	2263.53	1	-50	50	
W	182	159	No Gas	0.173	ppb	4.6	2923.68	1	-50	50	
Hg	201	159	He	<0.000	ppb	N/A	20.50	0.5	-50	50	
Tl	205	159	No Gas	<0.000	ppb	N/A	456.68	0.5	-50	50	
Pb	208	159	No Gas	0.057	ppb	12.4	7267.51	0.5	-50	50	
U	238	159	No Gas	<0.000	ppb	N/A	195.56	0.25	-50	50	

12/20/21

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1748977.60	0.8	1681799.59	103.99	60	120	
Sc	45	No Gas	4460106.83	2.4	4617155.5	96.6	60	120	
Sc	45	H2	2878852.50	0.7	2972542.08	96.85	60	120	
Sc	45	He	487643.91	0.9	522068.73	93.41	60	120	
Ge	72	No Gas	1165766.38	0.8	1192516.67	97.76	60	120	
Ge	72	H2	856473.37	0.6	914687.13	93.64	60	120	
Ge	72	He	322036.29	0.7	344471.49	93.49	60	120	
In	115	No Gas	6950917.20	1.7	7470718.61	93.04	60	120	
Tb	159	No Gas	9895214.61	0.7	10030832.66	98.65	60	120	
Tb	159	He	6585961.33	0.5	6703669.67	98.24	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB2
File Name	H6L18100.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 13:55:20
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	20.528	ppb	2.8	297814.28	20	80	120	
Be	9	6	No Gas	20.820	ppb	4.1	60309.08	20	80	120	
B	11	6	No Gas	22.567	ppb	1.7	47718.61	20	80	120	
Na	23	45	H2	109542.263	ppb	0.8	516773237.33	100000	80	120	
Mg	24	45	No Gas	106443.719	ppb	1.8	1231202389.33	100000	80	120	
Al	27	45	No Gas	106566.824	ppb	1.8	1590369149.63	100000	80	120	
Si	28	45	H2	220.131	ppb	1.6	319792.19	200	80	120	
P	31	45	No Gas	103412.973	ppb	2.4	84907757.33	100000	80	120	
K	39	45	He	108040.393	ppb	0.5	78614373.33	100000	80	120	
Ca	40	45	H2	107789.497	ppb	1.0	1075434240.00	100000	80	120	
Ti	47	45	No Gas	2152.719	ppb	2.5	3916157.00	2000	80	120	
V	51	45	He	21.084	ppb	0.6	140916.74	20	80	120	
Cr	52	45	He	23.510	ppb	0.6	176047.03	20	80	120	
Mn	55	45	No Gas	20.769	ppb	1.0	651703.19	20	80	120	
Fe	56	45	H2	108296.210	ppb	1.7	1740675029.33	100000	80	120	
Co	59	45	No Gas	20.601	ppb	1.6	534891.40	20	80	120	
Ni	60	45	He	21.317	ppb	0.7	60349.84	20	80	120	
Cu	63	45	He	21.491	ppb	1.1	162276.33	20	80	120	
Zn	66	72	No Gas	22.637	ppb	1.8	95943.60	20	80	120	
As	75	72	He	21.037	ppb	0.4	26768.13	20	80	120	
Se	78	72	H2	22.000	ppb	0.7	9976.02	20	80	120	
Sr	88	72	No Gas	22.087	ppb	2.2	768888.76	20	80	120	
Zr	90	72	No Gas	11.090	ppb	2.4	246679.62	20	80	120	> +/- 20%
Mo	95	115	No Gas	2127.121	ppb	3.1	14743864.97	2000	80	120	
Ag	107	115	No Gas	19.987	ppb	1.1	357033.99	20	80	120	
Cd	111	115	No Gas	20.298	ppb	0.7	75303.92	20	80	120	
Sn	118	115	No Gas	20.325	ppb	2.1	221961.66	20	80	120	
Sb	123	115	No Gas	20.261	ppb	0.9	263133.33	20	80	120	
Ba	137	115	No Gas	21.251	ppb	1.7	114177.03	20	80	120	
W	182	159	No Gas	20.444	ppb	1.4	285035.70	20	80	120	
Hg	201	159	He	2.131	ppb	2.3	3588.68	2	80	120	
Tl	205	159	No Gas	20.043	ppb	2.1	629051.26	20	80	120	
Pb	208	159	No Gas	20.467	ppb	1.3	882080.76	20	80	120	
U	238	159	No Gas	20.235	ppb	1.5	886549.78	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1747300.89	1.1	1681799.59	103.89	60	120	
Sc	45	No Gas	4532741.17	1.1	4617155.5	98.17	60	120	
Sc	45	H2	2887125.42	0.3	2972542.08	97.13	60	120	
Sc	45	He	490296.26	0.8	522068.73	93.91	60	120	
Ge	72	No Gas	1171294.29	1.1	1192516.67	98.22	60	120	
Ge	72	H2	858038.56	0.9	914687.13	93.81	60	120	
Ge	72	He	325251.21	0.2	344471.49	94.42	60	120	
In	115	No Gas	7096704.44	1.0	7470718.61	94.99	60	120	
Tb	159	No Gas	9925132.11	0.8	10030832.66	98.95	60	120	
Tb	159	He	6672354.67	0.9	6703669.67	99.53	60	120	

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS METALS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # SMSA-05-01-02

ALL SAMPLES PH<2

Book #: EIM-089
Batch: IML017W
Matrix: WATER
Digestor ID: E

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	

Start	Temp	End	Temp
	91.4 °C		93.7 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A-007-07-22	.15
LCS-2	↓ -07-23	.15
MS	SAME AS LCS	1,2
Blank Soil (Bead)	N/A	N/A
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA-011-02-06	.5+1.0
HCl	SWIA-009-17-09	.25+.25
H_2O_2	N/A	N/A
HNO_3(1:1)	↓	↓
Au	SM6A-007-07-25	.1
pH Strip (0-14)	HC160347	N/A

Digestate Location	METALS
Extract Location	N/A
☑ Reagent Water ID:	SWIA-011-05-06
☑ Thermometer ID:	21G02426/E12
☑ Pipette ID:	74276331
☐ Pipette ID:	
☐ Pipette ID:	
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask	
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask	

Prepared By: CK
Standard Added By: CK Witnessed By: TH
Extract Rcvd By: TH Checked By: CK

EMAX LABORATORIES

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
21IML016W01	IML016WB	50	ml	12/15/21 13:30	50	50	50	1	
21IML016W02	IML016WL	50	ml	12/15/21 13:30	50	50	50	1	
21IML016W03	IML016WC	50	ml	12/15/21 13:30	50	50	50	1	
21IML016W04	L159-01	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W05	L159-03	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W06	L159-04	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W07	L159-05	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W08	L159-06	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W09	L159-07	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W10	L159-08	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W11	L159-10	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W12	L159-11	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W13	L159-12	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W14	L159-14	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W15	L159-16	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W16	L159-18	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W17	L159-20	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W18	L159-21	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W19	L159-22	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W20	L159-23	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W21	L159-23M	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W22	L159-23S	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED

CK 12-15-21

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 12/15/21 14:33 Prepared By: CKaing

☑ Digestion Ended @ 12/15/21 17:05 Checked By: CK

Comments: Date 12-15-21

LABORATORY REPORT FOR

ARCADIS

PG&E TOPOCK-GMP

METHOD E218.6
HEXAVALENT CHROMIUM

SDG#: 21L159

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21L159

METHOD E218.6
HEXAVALENT CHROMIUM

A total of four(4) water samples were received on 12/15/21 to be analyzed for Hexavalent Chromium in accordance with Method E218.6 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Hexavalent Chromium was not detected in HCL019WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. HCL019WL/HCL019WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD and three(3) sets of MSs were analyzed.
- Hexavalent Chromium was within MS QC limits in L159-01M/L159-01S.
- Percent recovery for Hexavalent Chromium was within MS QC limits in L159-02M, -03M and -04M.
Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

Samples L159-01M, -01S and -02 were spiked at 1 ppb.

Samples L159-03 and -04 were spiked at 2 ppb.

SAMPLE RESULTS

METHOD E218.6
HEXAVALENT CHROMIUM

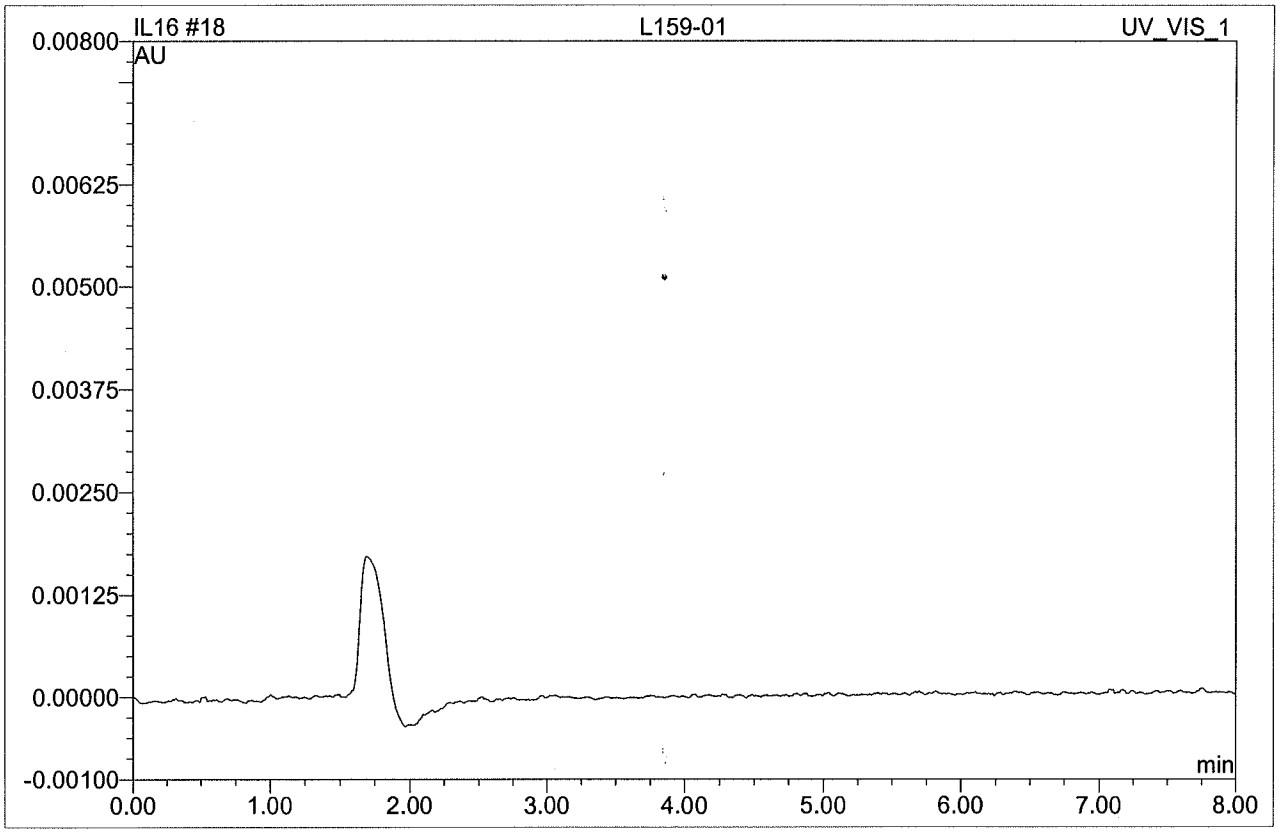
Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 21L159

Matrix : WATER
InstrumentID : 59

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N. FACTOR	MOIST (%)	LOQ (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HCL019WB	ND	1	NA	0.2	0.05	12/16/2118:39	NA	IL16015	IL16013	HCL019W	NA	NA
LCS1W	HCL019WL	2.00	1	NA	0.2	0.05	12/16/2118:49	NA	IL16016	IL16013	HCL019W	NA	NA
LCD1W	HCL019WC	2.00	1	NA	0.2	0.05	12/16/2118:59	NA	IL16017	IL16013	HCL019W	NA	NA
MW-55-045-Q421	L159-01	ND	1	NA	0.2	0.05	12/16/2119:10	NA	IL16018	IL16013	HCL019W	12/14/2107:56	12/15/21
MW-55-045-Q421MS	L159-01M	0.932	1	NA	0.2	0.05	12/16/2119:20	NA	IL16019	IL16013	HCL019W	12/14/2107:56	12/15/21
MW-55-045-Q421MSD	L159-01S	0.969	1	NA	0.2	0.05	12/16/2119:31	NA	IL16020	IL16013	HCL019W	12/14/2107:56	12/15/21
MW-55-120-Q421	L159-03	7.96	1	NA	0.2	0.05	12/16/2119:41	NA	IL16021	IL16013	HCL019W	12/14/2107:20	12/15/21
MW-55-120-Q421MS	L159-03M	9.98	1	NA	0.2	0.05	12/16/2119:56	NA	IL16022	IL16013	HCL019W	12/14/2107:20	12/15/21
MW-922-Q421	L159-04	7.95	1	NA	0.2	0.05	12/16/2120:06	NA	IL16023	IL16013	HCL019W	12/14/2107:30	12/15/21
MW-922-Q421MS	L159-04M	9.92	1	NA	0.2	0.05	12/16/2120:17	NA	IL16024	IL16013	HCL019W	12/14/2107:30	12/15/21
MW-55-045-EB-Q421	L159-02	ND	1	NA	0.2	0.05	12/16/2123:55	NA	IL16045	IL16037	HCL019W	12/14/2107:51	12/15/21
MW-55-045-EB-Q421MS	L159-02M	0.984	1	NA	0.2	0.05	12/17/2100:06	NA	IL16046	IL16037	HCL019W	12/14/2107:51	12/15/21

IL16 018 L159-01

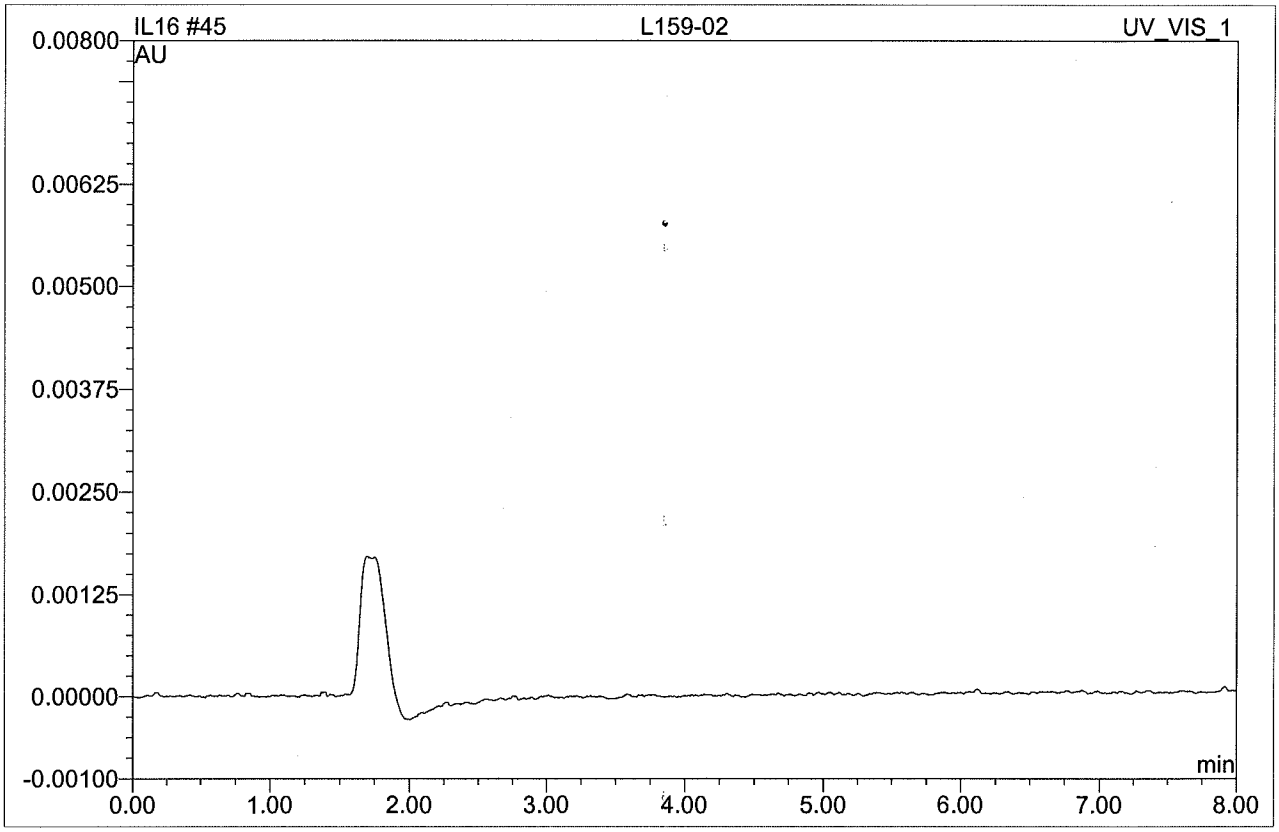
Sample Name:	**L159-01**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 19:10**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 045 L159-02

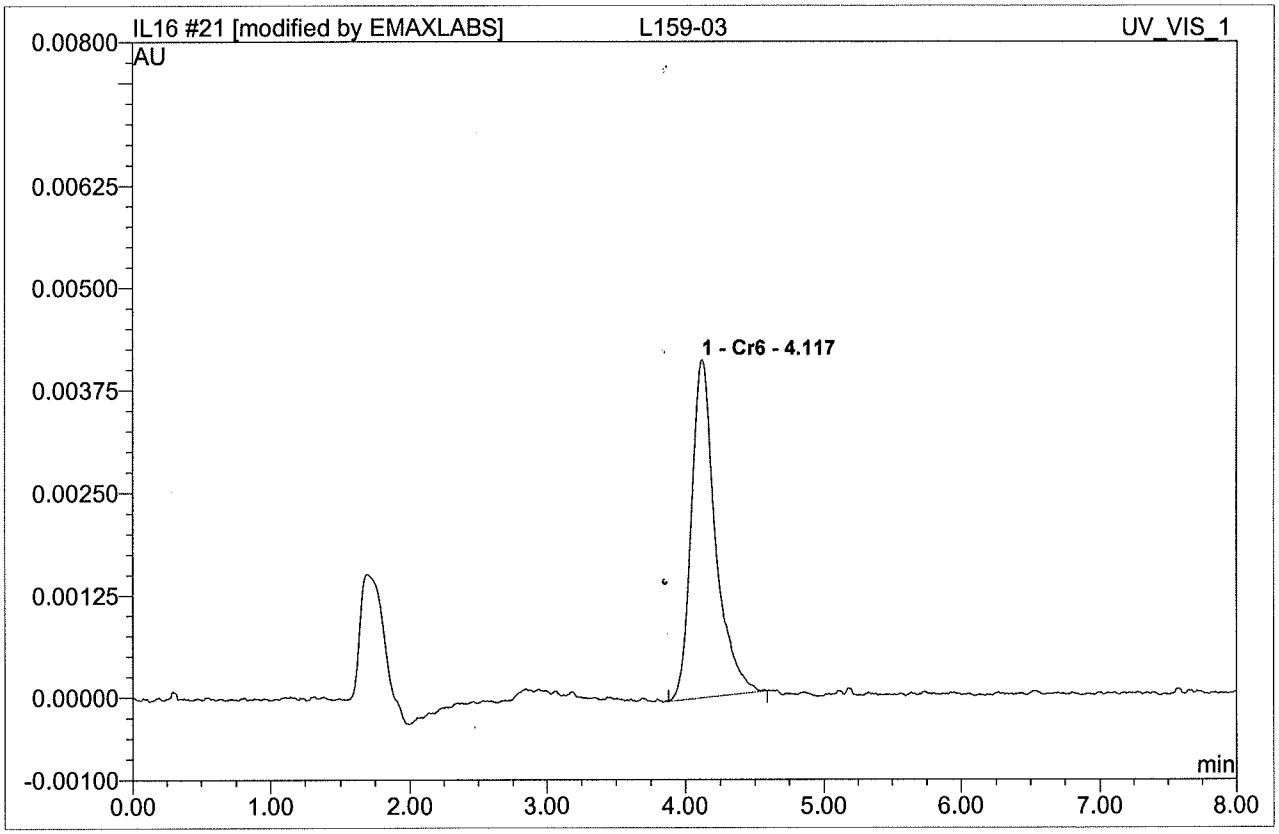
Sample Name:	**L159-02**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 23:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 021 L159-03

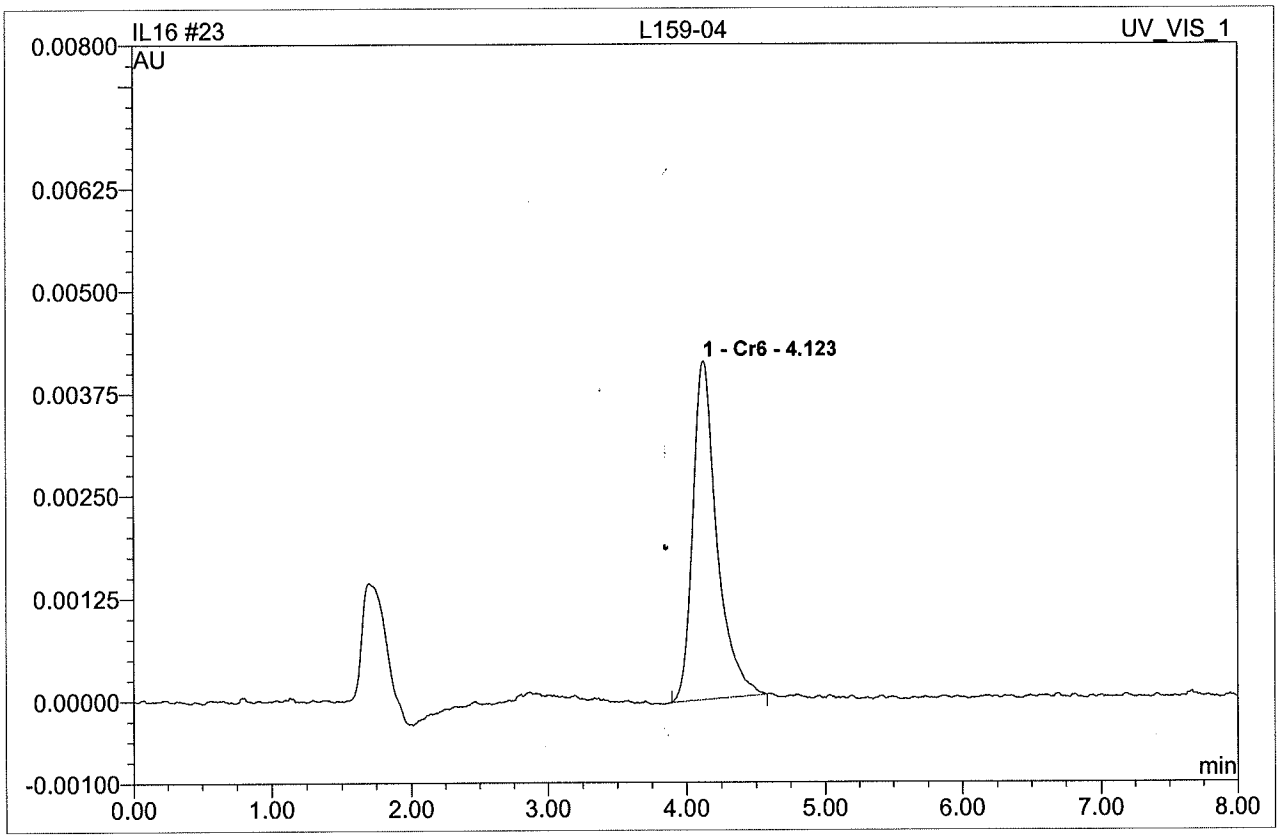
Sample Name:	**L159-03**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 19:41**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.12	Cr6	0.0041230	0.0008300	100.00	7.957	BMB*
Total:			0.004	0.001	100.00	7.957	

IL16 023 L159-04

Sample Name:	**L159-04**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 20:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.12	Cr6	0.0041310	0.0008297	100.00	7.954	BMB
Total:			0.004	0.001	100.00	7.954	

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21L159
METHOD : E218.6

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: HCL019WB	HCL019WL	HCL019WC
LAB FILE ID	: IL16015	IL16016	IL16017
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 12/16/2118:39	12/16/2118:49	12/16/2118:59
PREP BATCH	: HCL019W	HCL019W	HCL019W
CALIBRATION REF	: IL16013	IL16013	IL16013

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpkAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
HEXAVALENT CHROMIUM	ND	2.00	2.00	100	2.00	2.00	100	0	90-110	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21L159
METHOD : E218.6

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MW-55-045-Q421	MW-55-045-Q421MS	MW-55-045-Q421MSD
LAB SAMPLE ID	: L159-01	L159-01M	L159-01S
LAB FILE ID	: IL16018	IL16019	IL16020
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 12/16/2119:10	12/16/2119:20	12/16/2119:31
PREP BATCH	: HCL019W	HCL019W	HCL019W
CALIBRATION REF	: IL16013	IL16013	IL16013

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpkAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
HEXAVALENT CHROMIUM	ND	1.00	0.932	93.2	1.00	0.969	96.9	4	90-110	20

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21L159
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-55-045-EB-Q421	MW-55-045-EB-Q421MS
LAB SAMPLE ID	: L159-02	L159-02M
LAB FILE ID	: IL16045	IL16046
DATE PREPARED	: NA	NA
DATE ANALYZED	: 12/16/2123:55	12/17/2100:06
PREP BATCH	: HCL019W	HCL019W
CALIBRATION REF	: IL16037	IL16037

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.00	0.984	98.4	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21L159
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-55-120-Q421	MW-55-120-Q421MS
LAB SAMPLE ID	: L159-03	L159-03M
LAB FILE ID	: IL16021	IL16022
DATE PREPARED	: NA	NA
DATE ANALYZED	: 12/16/2119:41	12/16/2119:56
PREP BATCH	: HCL019W	HCL019W
CALIBRATION REF	: IL16013	IL16013

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	7.96	2.00	9.98	101	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21L159
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-922-Q421	MW-922-Q421MS
LAB SAMPLE ID	: L159-04	L159-04M
LAB FILE ID	: IL16023	IL16024
DATE PREPARED	: NA	NA
DATE ANALYZED	: 12/16/2120:06	12/16/2120:17
PREP BATCH	: HCL019W	HCL019W
CALIBRATION REF	: IL16013	IL16013

ACCESSION:

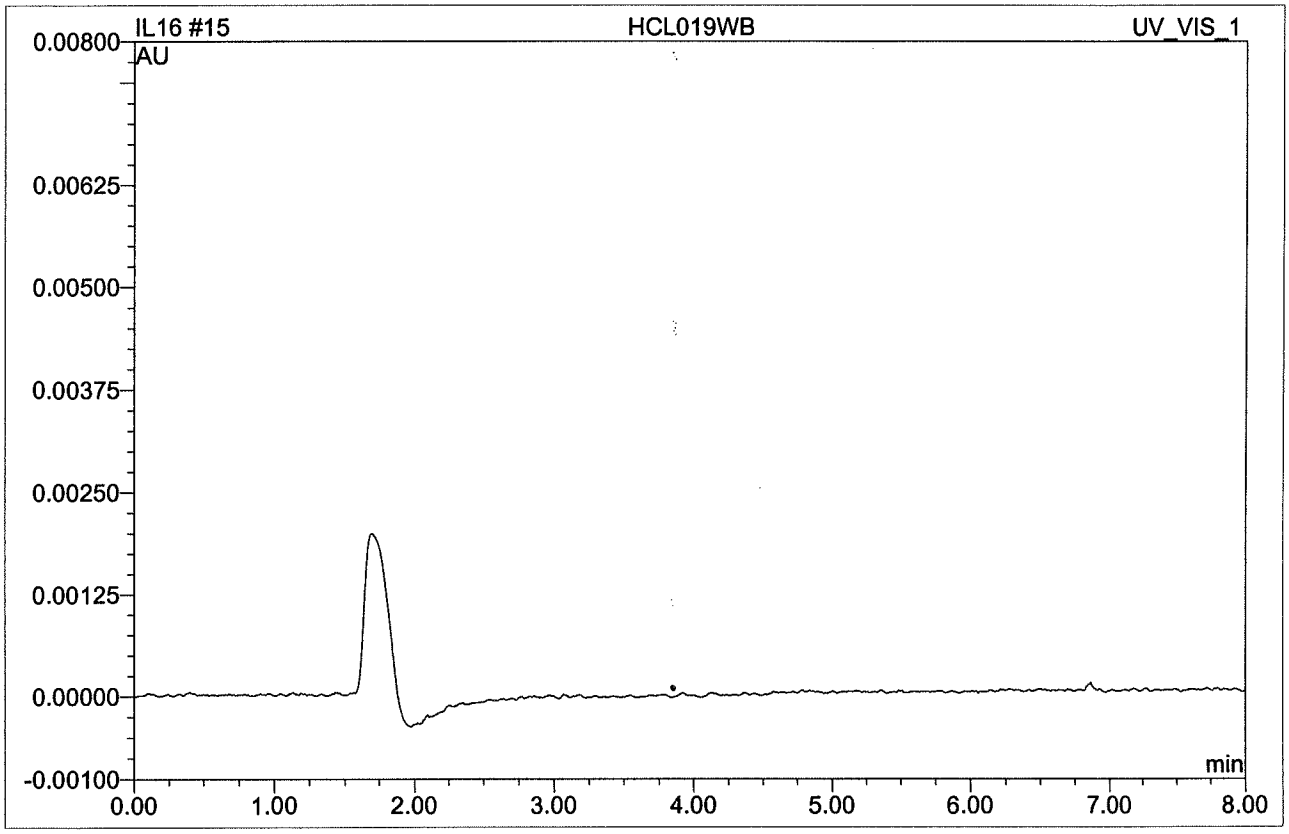
PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	7.95	2.00	9.92	98.5	90-110

PS: Parent Sample MS: Matrix Spike

QC DATA

IL16 015 HCL019WB

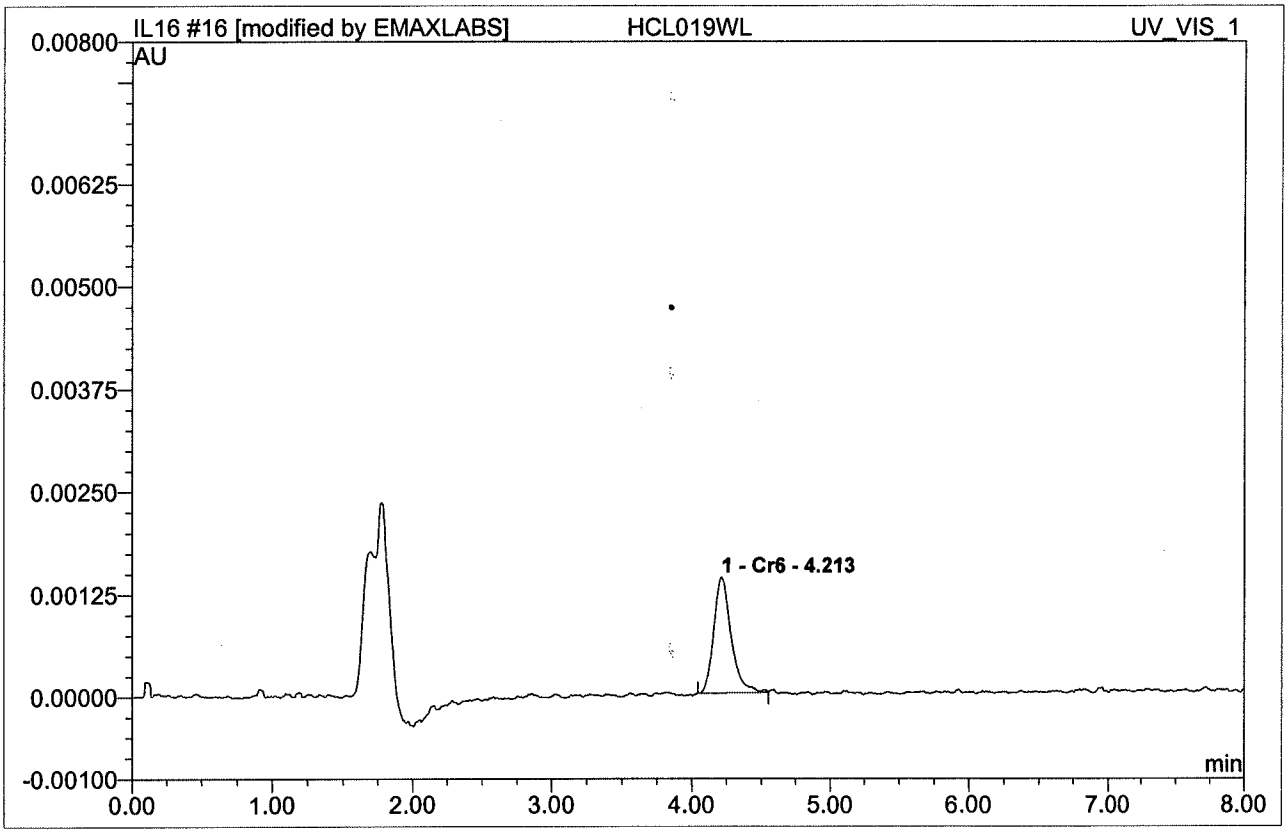
Sample Name:	**HCL019WB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 18:39**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 016 HCL019WL

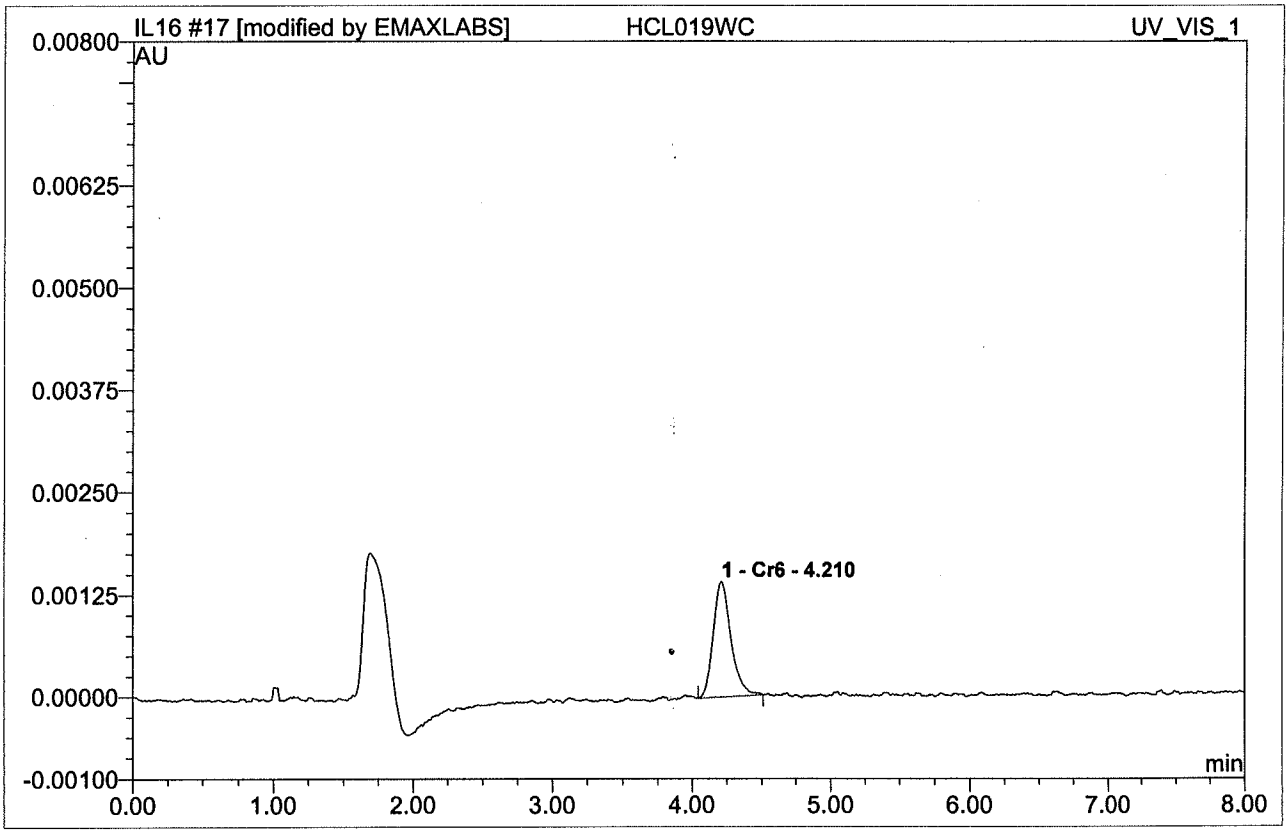
Sample Name:	**HCL019WL**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 18:49**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0014090	0.0002070	100.00	1.995	BMB*
Total:			0.001	0.000	100.00	1.995	

IL16 017 HCL019WC

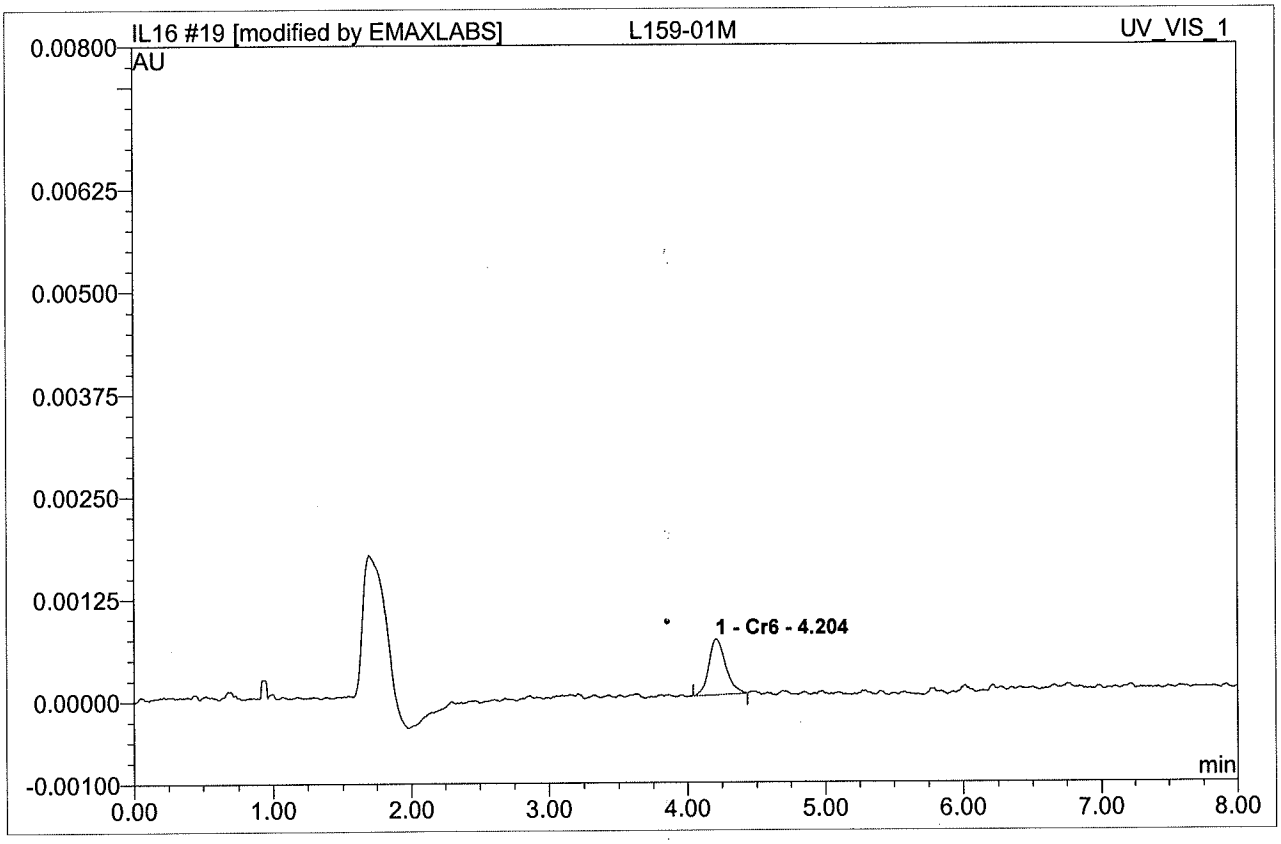
Sample Name:	**HCL019WC**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 18:59**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0014080	0.0002075	100.00	2.000	BMB*
Total:			0.001	0.000	100.00	2.000	

IL16 019 L159-01M

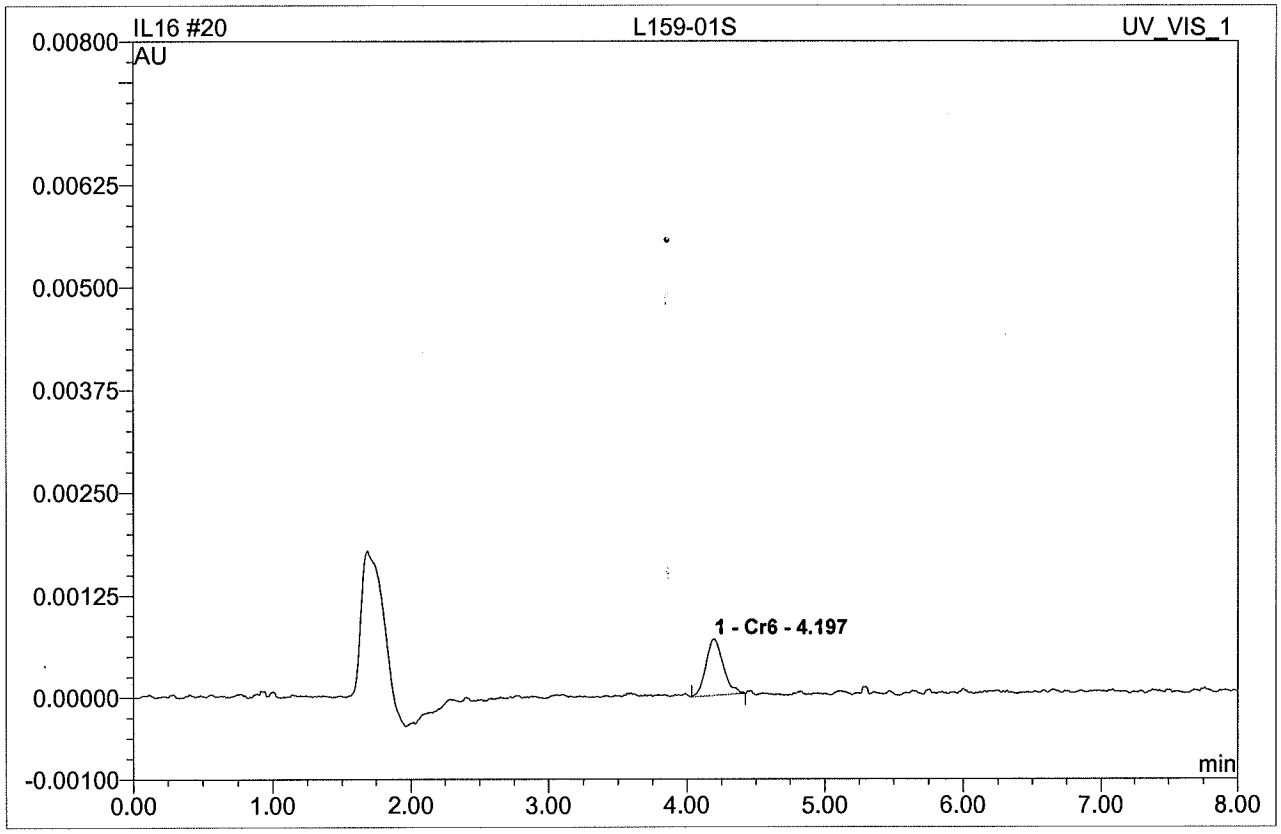
Sample Name:	**L159-01M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 19:20**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.20	Cr6	0.0006770	0.0000959	100.00	0.932	BMB*
Total:			0.001	0.000	100.00	0.932	

IL16 020 L159-01S

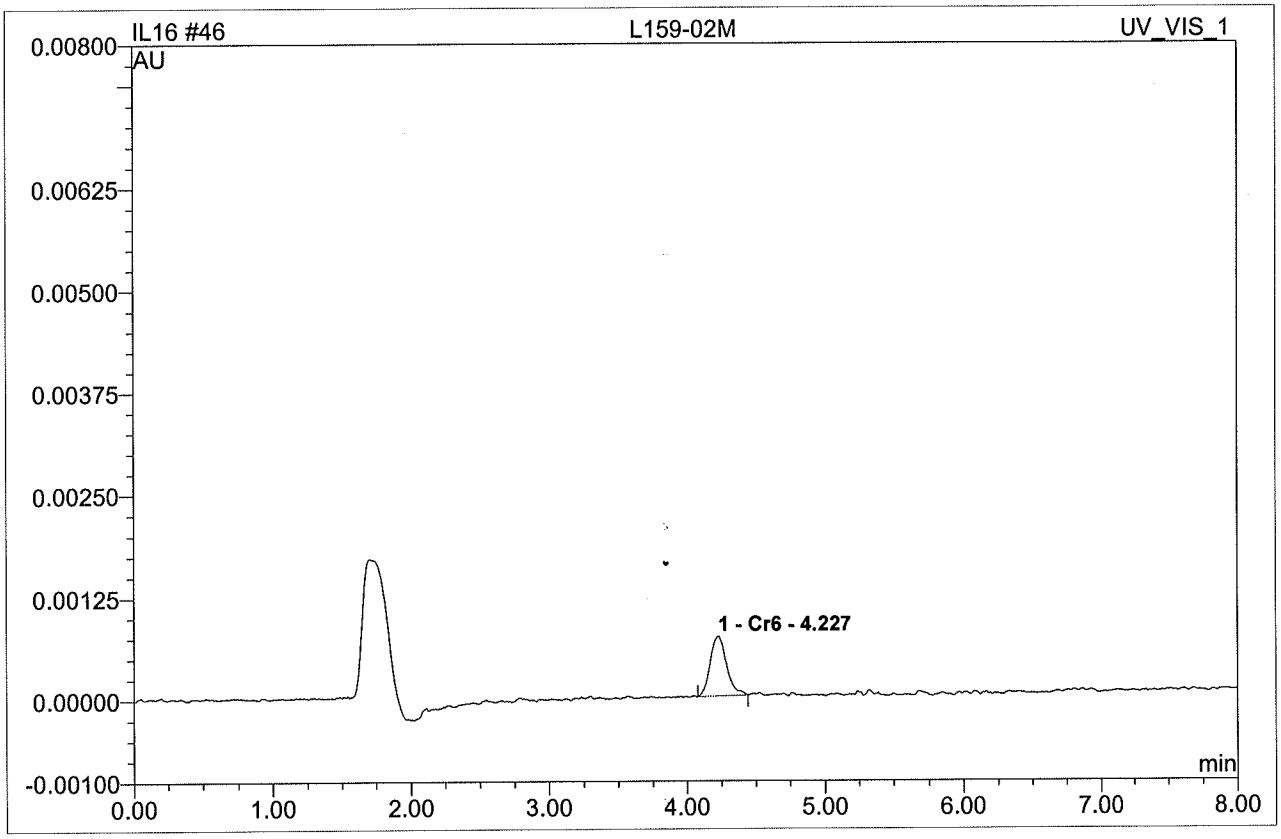
Sample Name:	**L159-01S**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 19:31**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.20	Cr6	0.0006890	0.0000998	100.00	0.969	BMB
Total:			0.001	0.000	100.00	0.969	

IL16 046 L159-02M

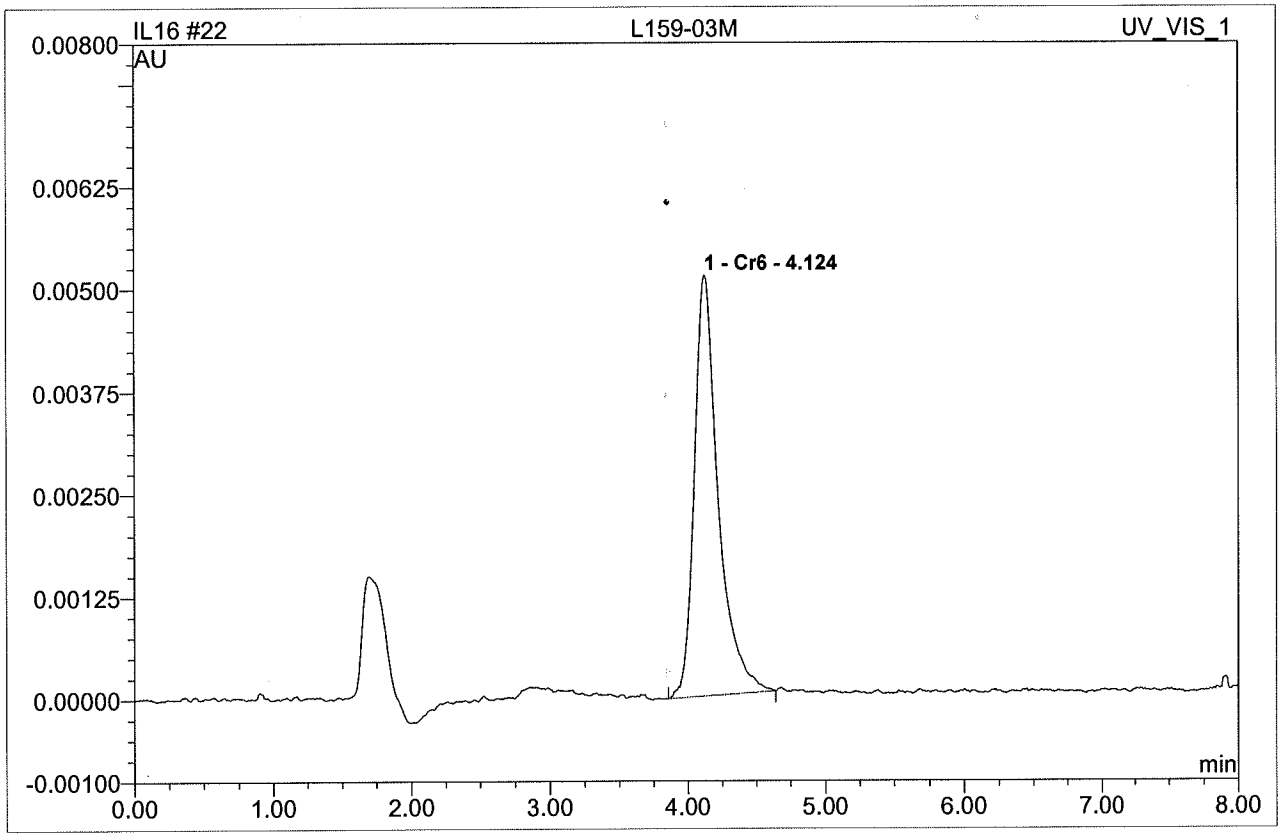
Sample Name:	**L159-02M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 0:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.23	Cr6	0.0007320	0.0001013	100.00	0.984	BMB
Total:			0.001	0.000	100.00	0.984	

IL16 022 L159-03M

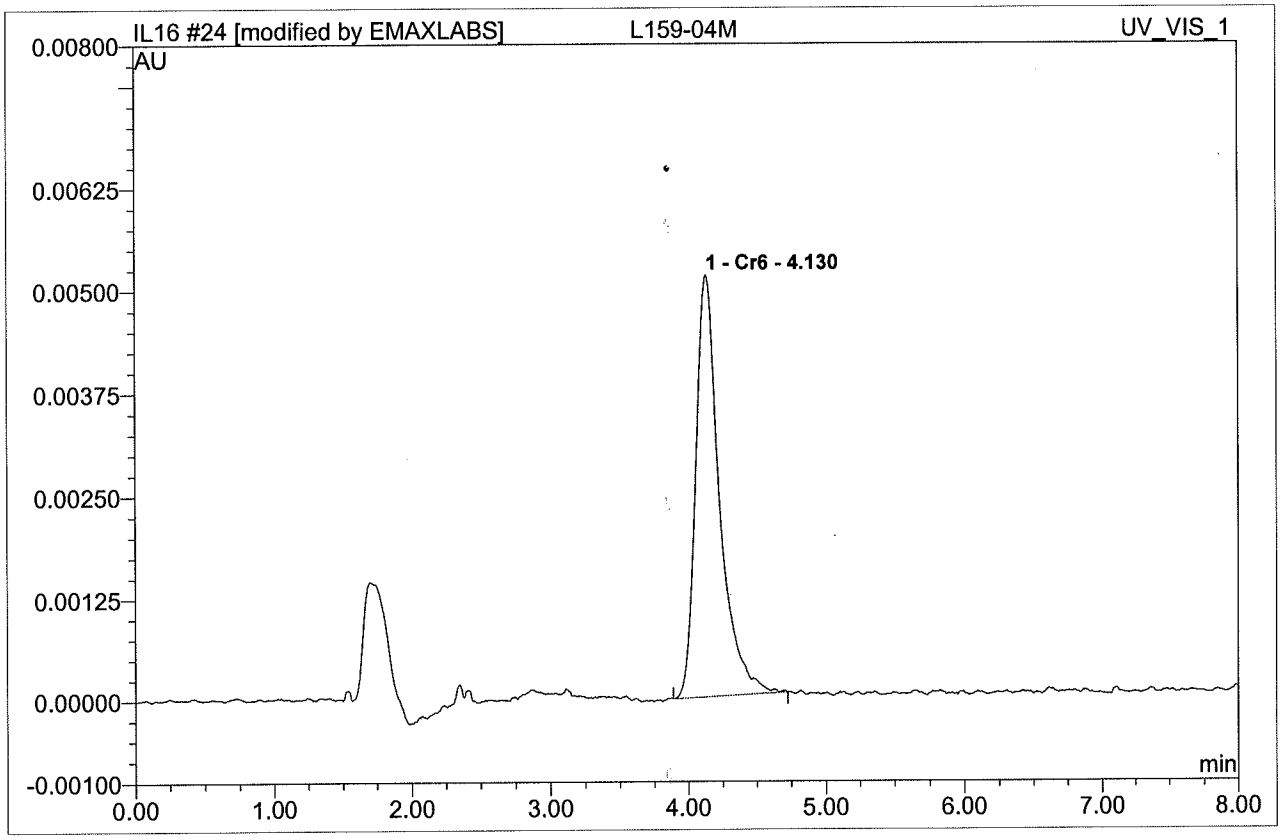
Sample Name:	**L159-03M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 19:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.12	Cr6	0.0051300	0.0010416	100.00	9.982	BMB
Total:			0.005	0.001	100.00	9.982	

IL16 024 L159-04M

Sample Name:	**L159-04M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 20:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.13	Cr6	0.0051480	0.0010350	100.00	9.918	BMB*
Total:			0.005	0.001	100.00	9.918	

INITIAL CALIBRATION

IC RESULT FORM CalVersion : CR6.L16/IL16(2021)

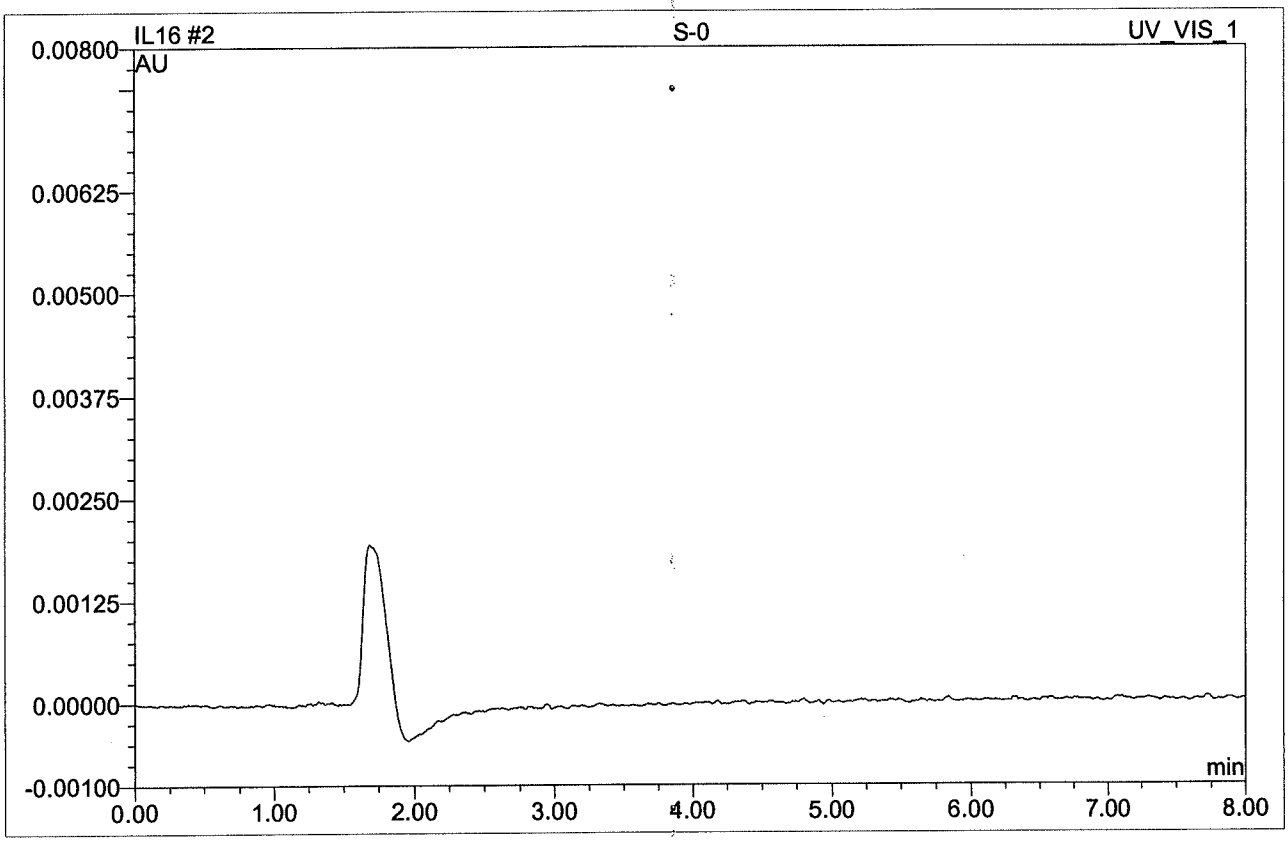
LFID	LSID	SelCmp	Cr6	DateTime	DF
IL16001	IB	C	ND	12/16/2116:00	1
IL16002	S-0	C	ND	12/16/2116:10	1
IL16003	S-1	C	0.198	12/16/2116:31	1
IL16004	S-2	C	0.503	12/16/2116:41	1
IL16005	S-3	C	0.993	12/16/2116:52	1
IL16006	S-4	C	1.985	12/16/2117:02	1
IL16007	S-5	C	5.011	12/16/2117:13	1
IL16008	S-6	C	7.495	12/16/2117:23	1
IL16009	S-7	C	10.002	12/16/2117:33	1
IL16010	ICV	C	101%	12/16/2117:44	1
IL16011	ICB	C	ND	12/16/2117:54	1
IL16012	LOW CCV	C	0.202	12/16/2118:05	1

METHOD: IC59L16
SOLVENT: BUFFER (SP2-05-06-01)

RCC 12/29/21

IL16 002 S-0

Sample Name:	**S-0**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 16:10**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

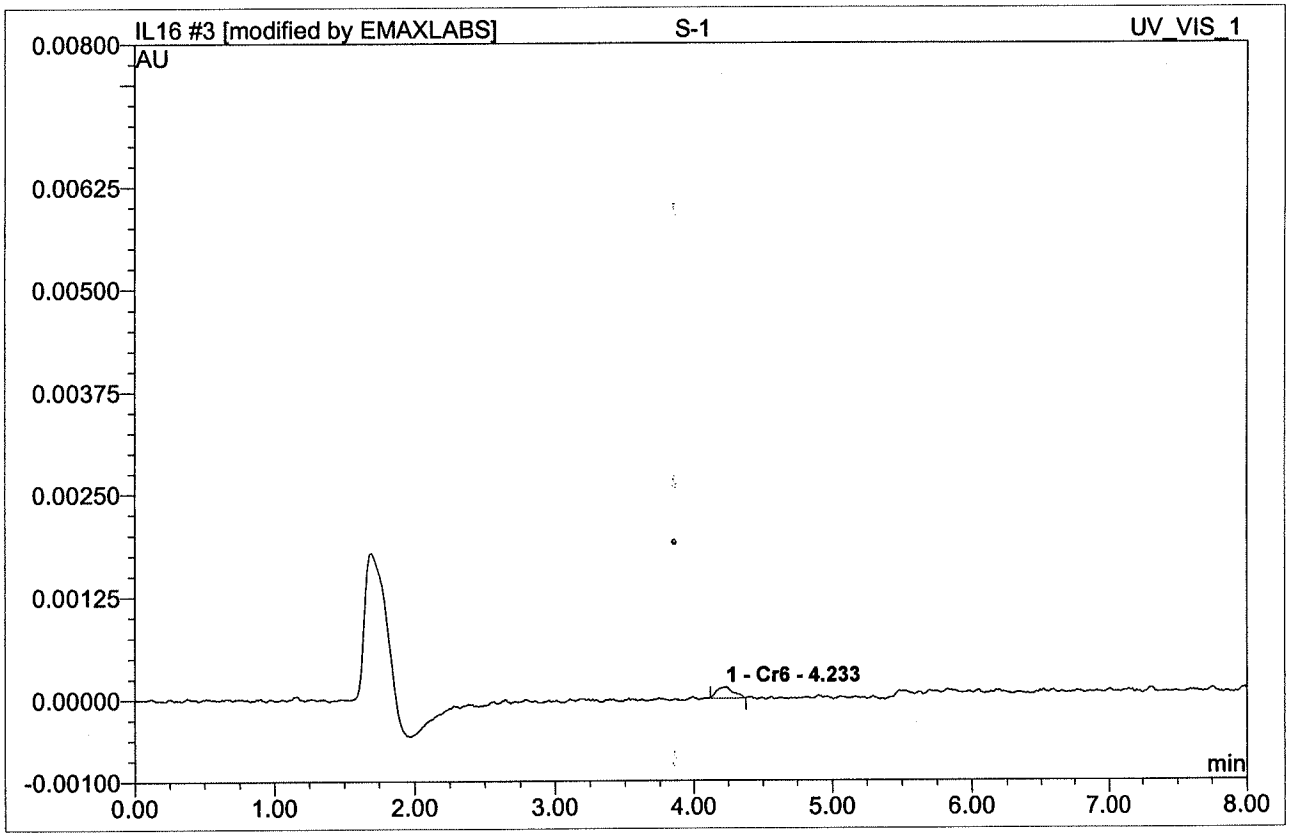


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 003 S-1

0.2 PPB

Sample Name:	**S-1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 16:31**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



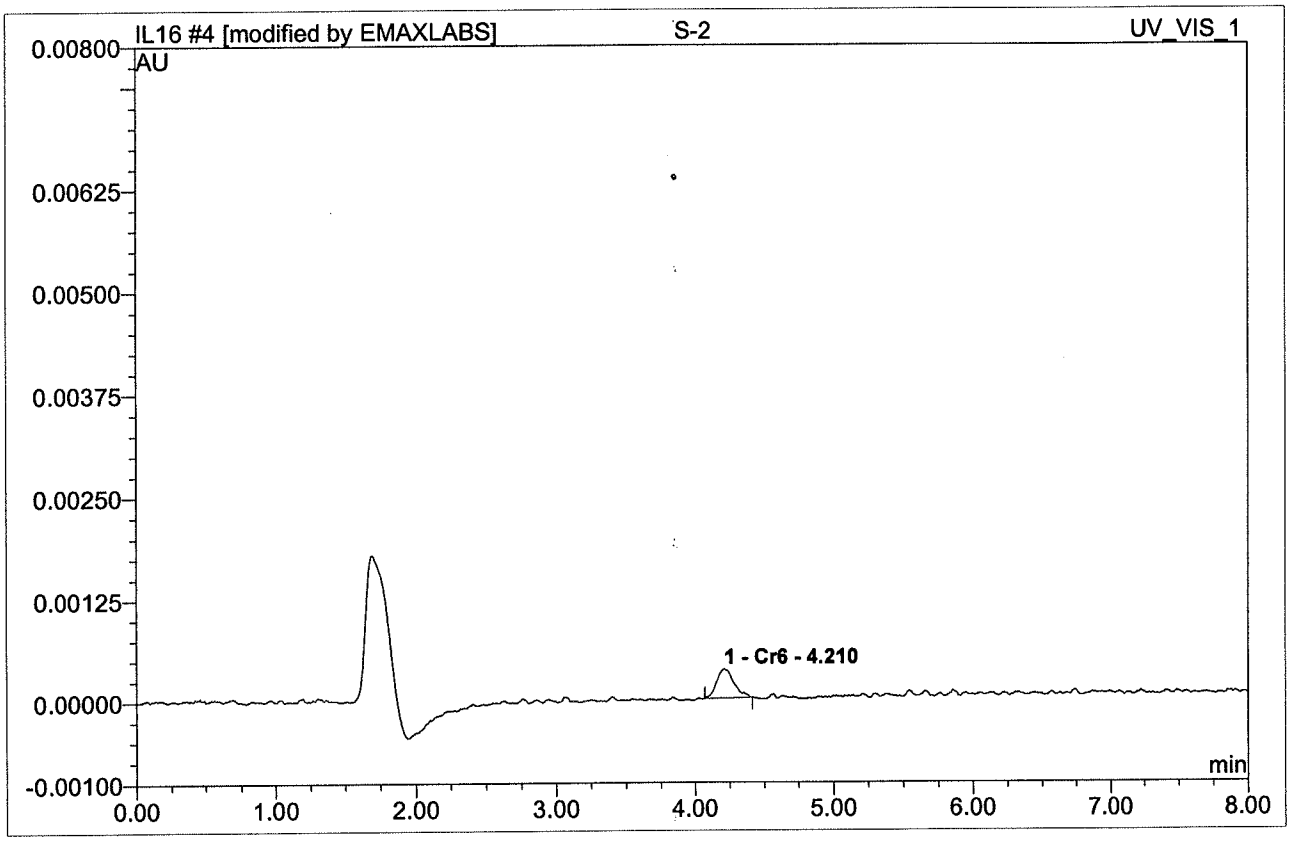
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.23	Cr6	0.0001400	0.0000192	100.00	0.198	BMB*
Total:			0.000	0.000	100.00	0.198	

12/29/21

IL16 004 S-2

0.5 PPB

Sample Name:	**S-2**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 16:41**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



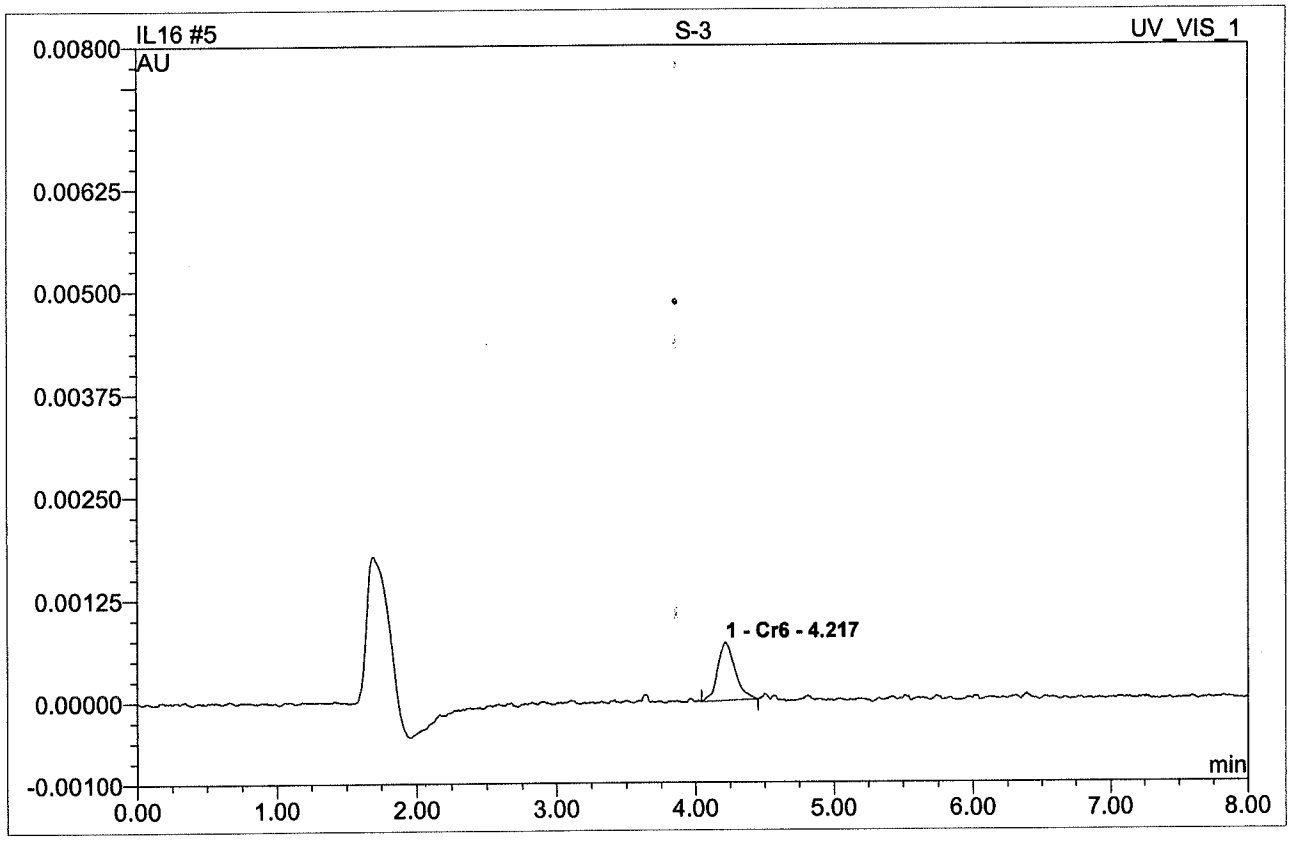
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0003560	0.0000510	100.00	0.503	BMB*
Total:			0.000	0.000	100.00	0.503	

12/16/21

IL16 005 S-3

1.0 PPB

Sample Name:	**S-3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 16:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

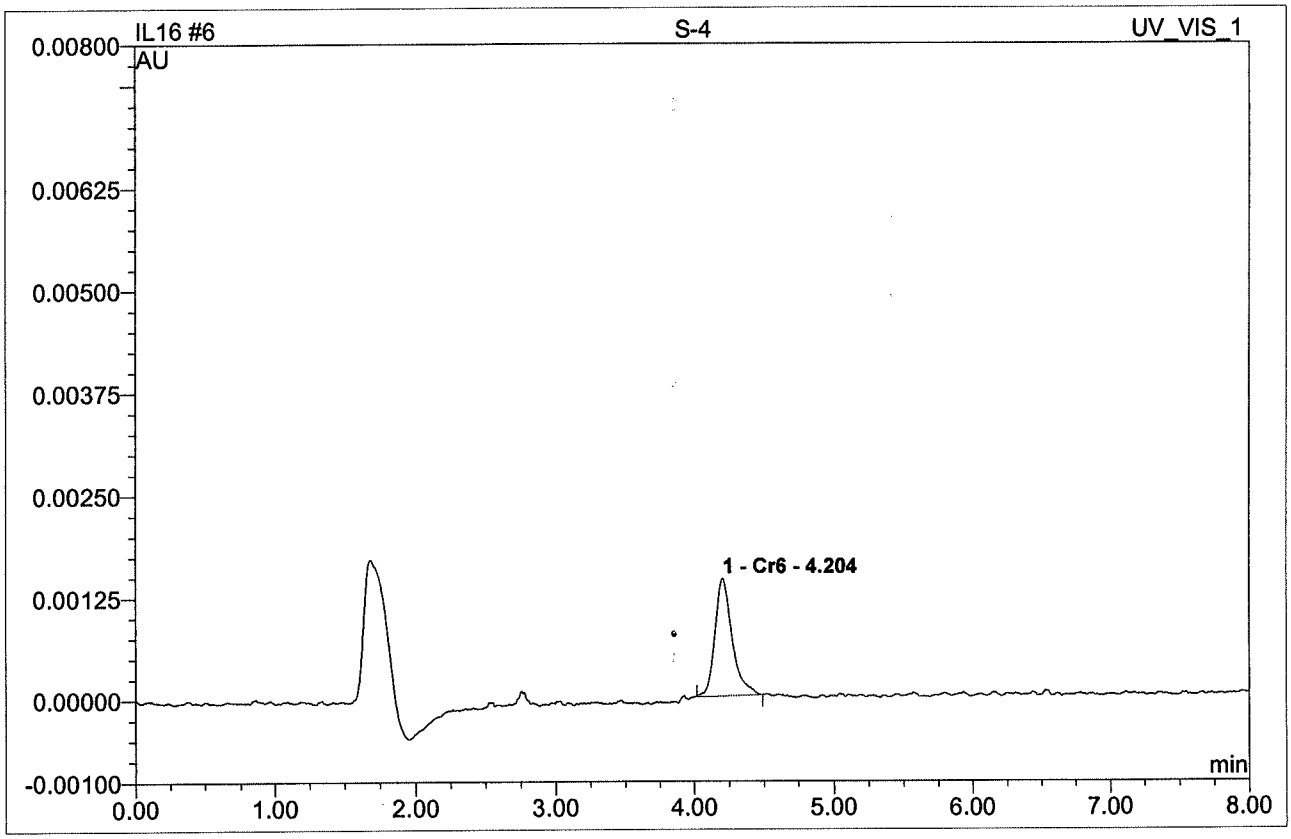


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.22	Cr6	0.0007070	0.0001022	100.00	0.993	BMB
Total:			0.001	0.000	100.00	0.993	

IL16 006 S-4

2.0 PPB

Sample Name:	**S-4**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 17:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

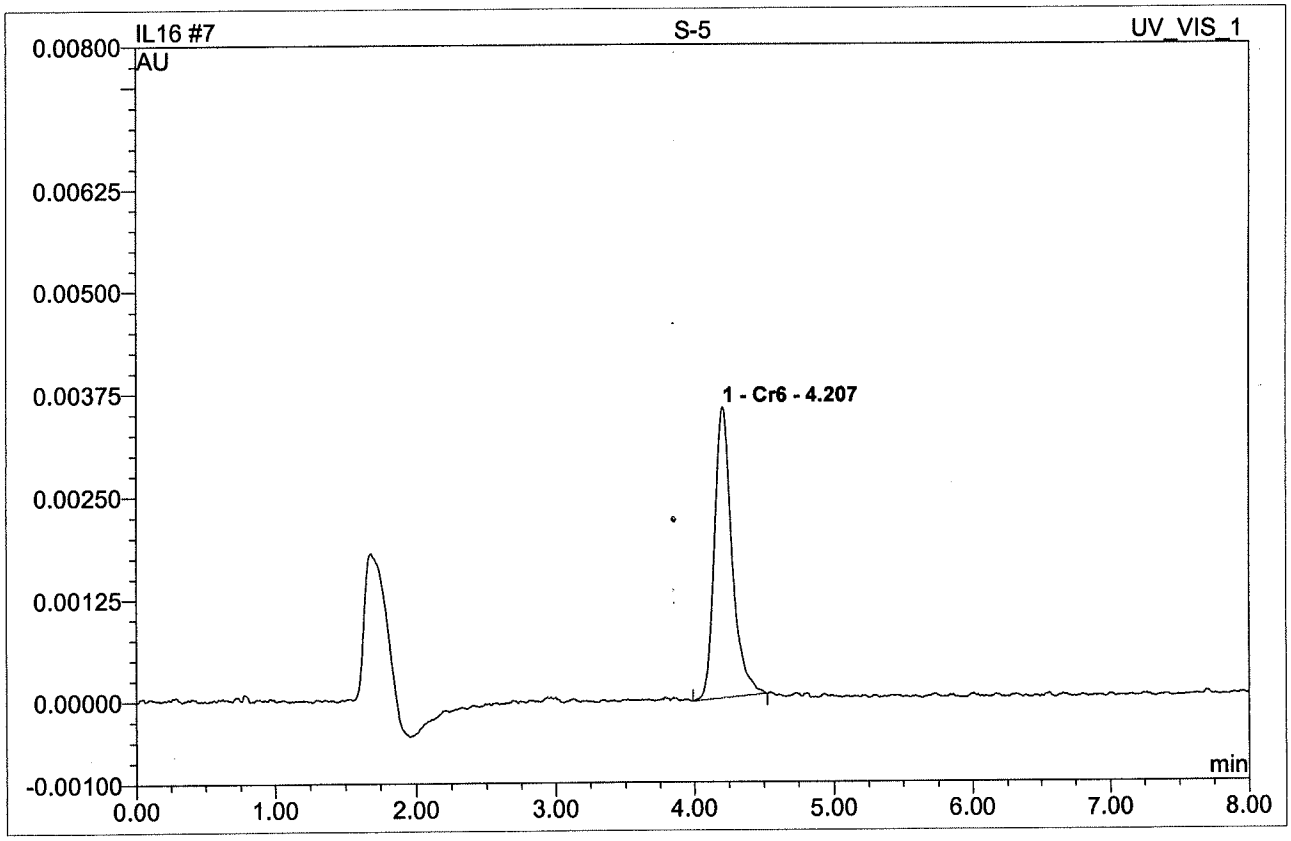


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.20	Cr6	0.0014420	0.0002059	100.00	1.985	BMB
Total:			0.001	0.000	100.00	1.985	

IL16 007 S-5

5.0 PPB

Sample Name:	**S-5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 17:13**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



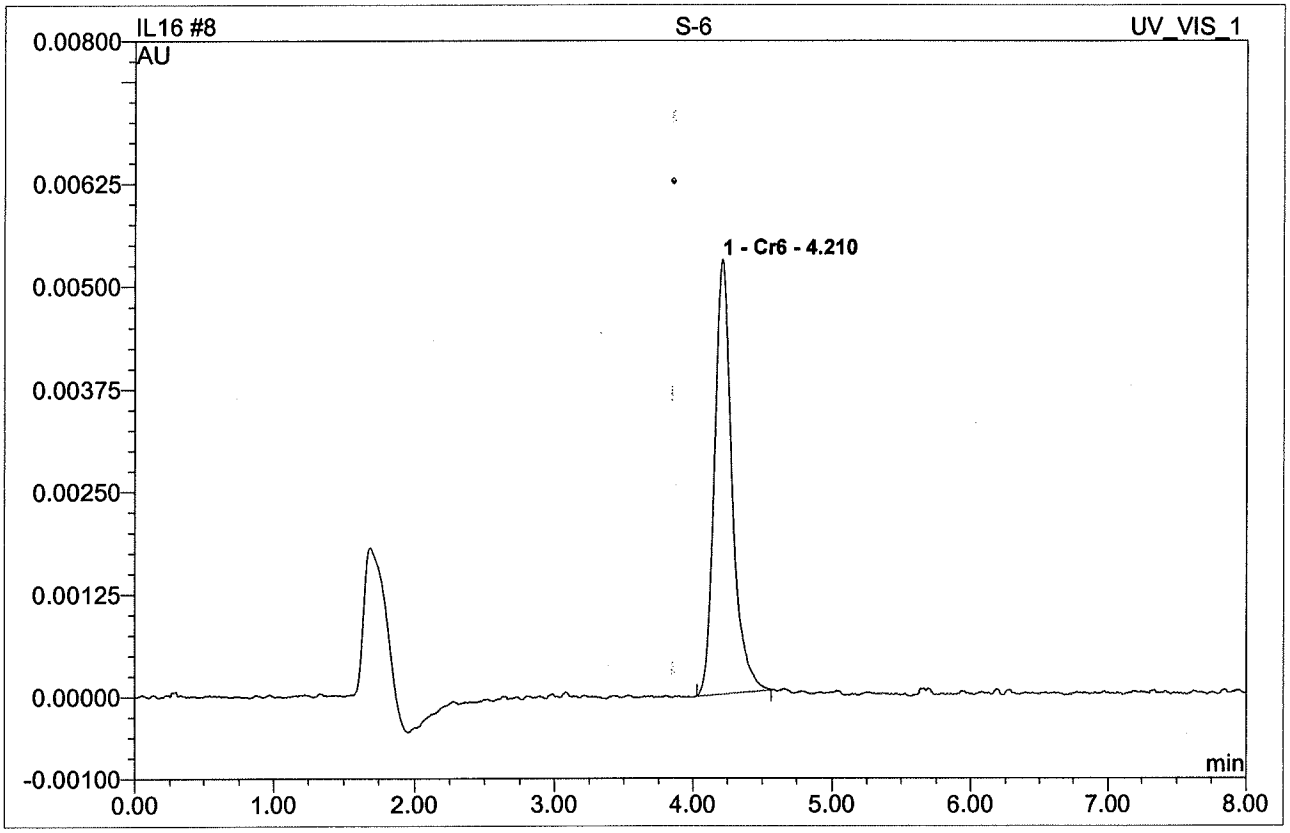
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0035460	0.0005221	100.00	5.011	BMB
Total:			0.004	0.001	100.00	5.011	

12/16/21

IL16 008 S-6

7.5 PPB

Sample Name:	**S-6**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 17:23**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

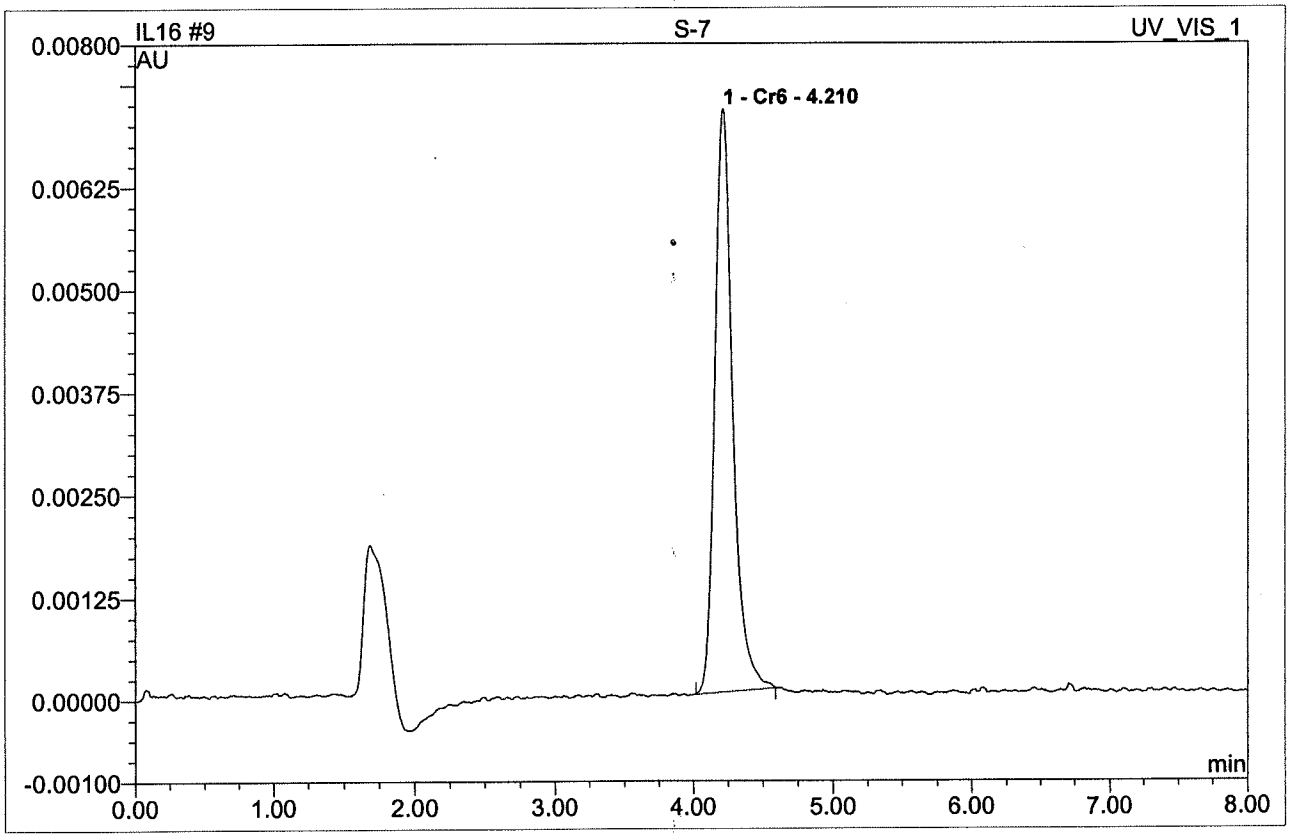


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0052960	0.0007817	100.00	7.495	BMB
Total:			0.005	0.001	100.00	7.495	

IL16 009 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 17:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



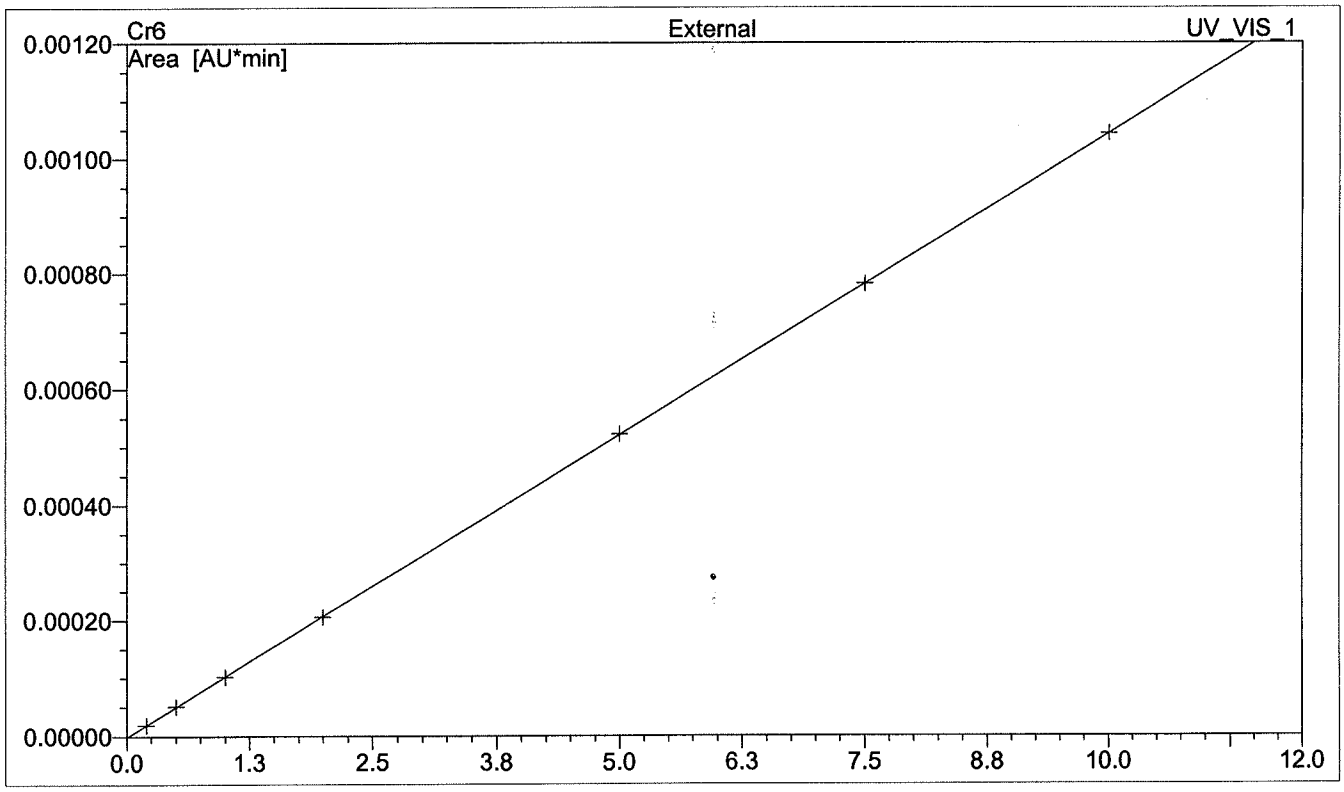
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0071060	0.0010437	100.00	10.002	BMB
Total:			0.007	0.001	100.00	10.002	

12/21/21

9 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/16/2021 17:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square	Offset	Slope	Curve
1	4.21	Cr6	0LOff	7	1.0000	-0.0000015	0.0001045	0.0000
Average:					1.0000	0.0000	0.0001	0.0000

SECOND SOURCE VERIFICATION

IC RESULT FORM CalVersion : CR6.L16/IL16(2021)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IL16001	IB	C	ND	12/16/2116:00	1
IL16002	S-0	C	ND	12/16/2116:10	1
IL16003	S-1	C	0.198	12/16/2116:31	1
IL16004	S-2	C	0.503	12/16/2116:41	1
IL16005	S-3	C	0.993	12/16/2116:52	1
IL16006	S-4	C	1.985	12/16/2117:02	1
IL16007	S-5	C	5.011	12/16/2117:13	1
IL16008	S-6	C	7.495	12/16/2117:23	1
IL16009	S-7	C	10.002	12/16/2117:33	1
IL16010	ICV	C	101%	12/16/2117:44	1
IL16011	ICB	C	ND	12/16/2117:54	1
IL16012	LOW CCV	C	0.202	12/16/2118:05	1

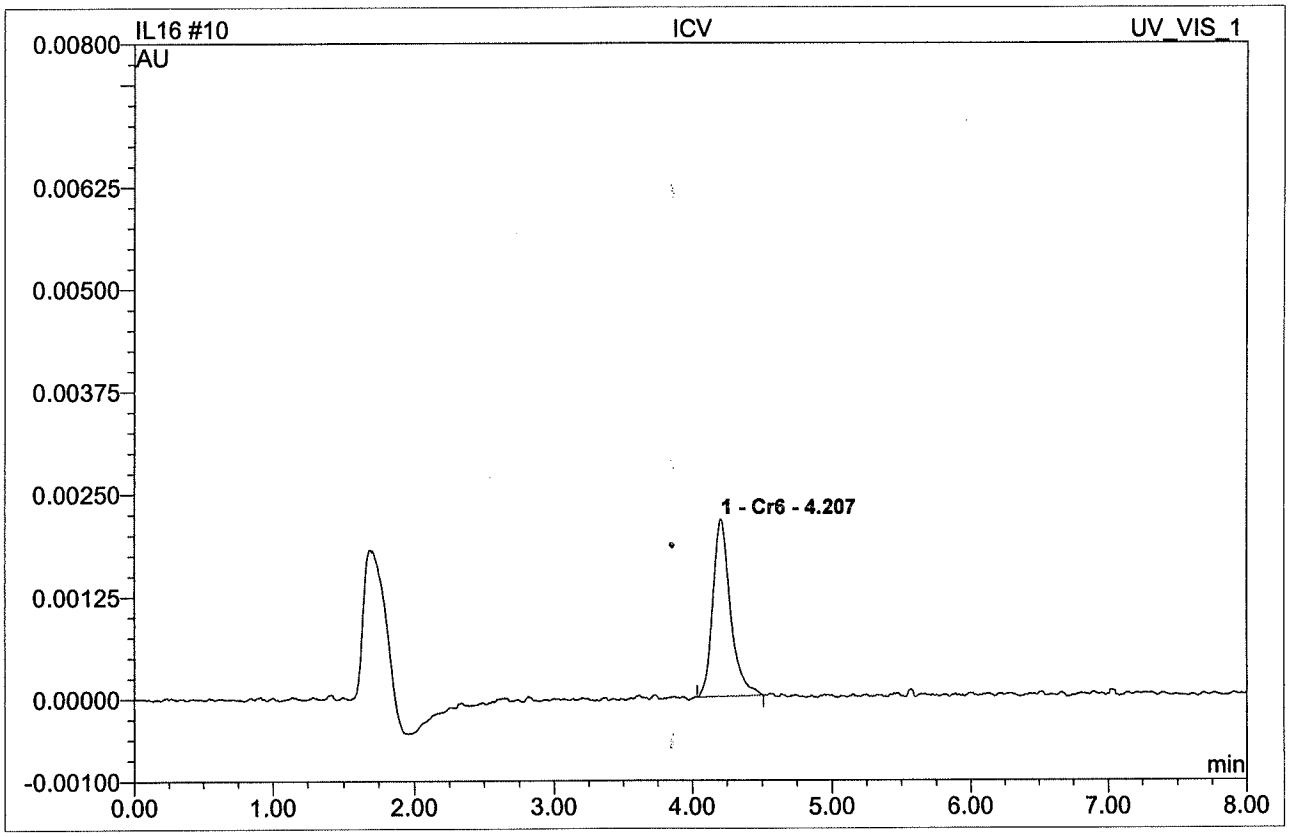
METHOD: IC59L16
SOLVENT: BUFFER (SP2-05-06-01)

12/29/21

IL16 010 ICV

3.0 PPB

Sample Name:	**ICV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 17:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

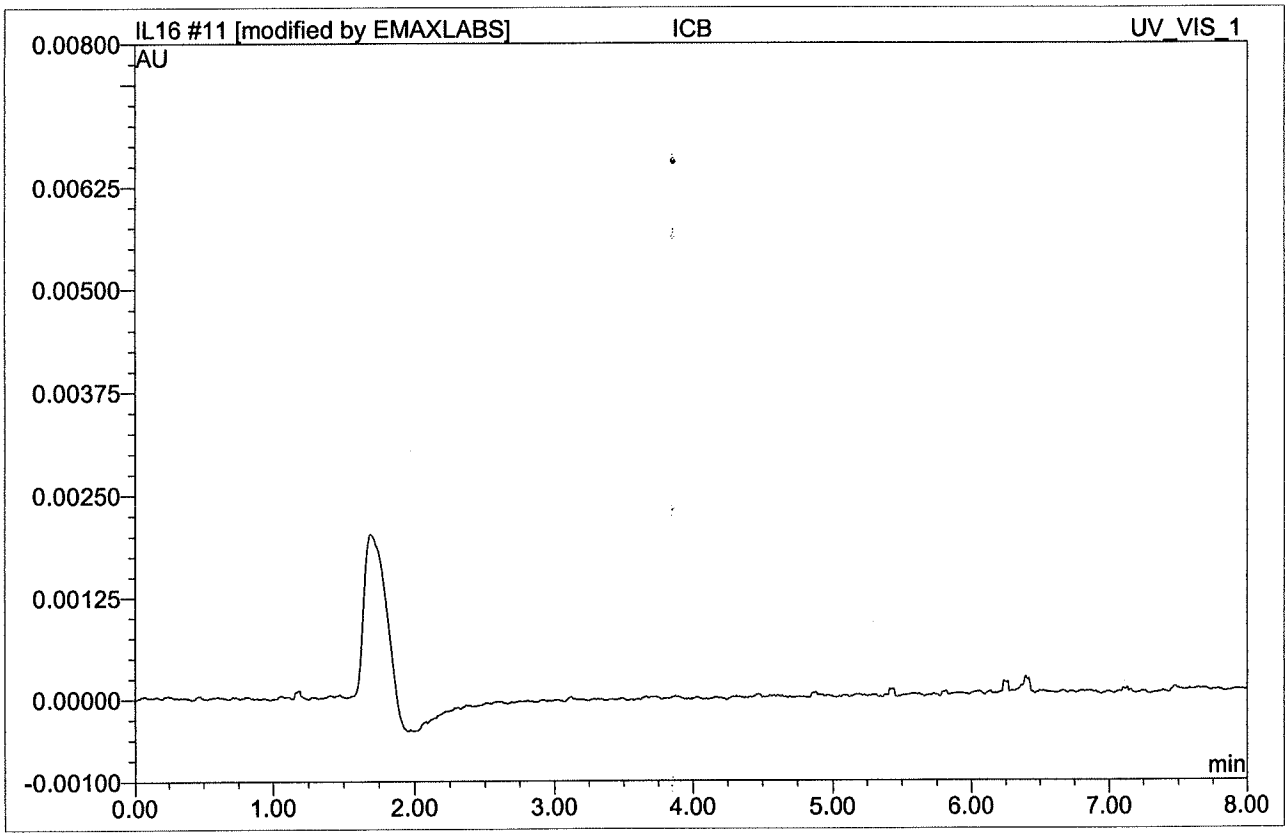


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0021620	0.0003156	100.00	3.034	BMB
Total:			0.002	0.000	100.00	3.034	

$$\text{Conc. (ppb)} = \frac{\text{Area - offset}}{\text{slope}}$$

IL16 011 ICB

Sample Name:	**ICB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 17:54**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

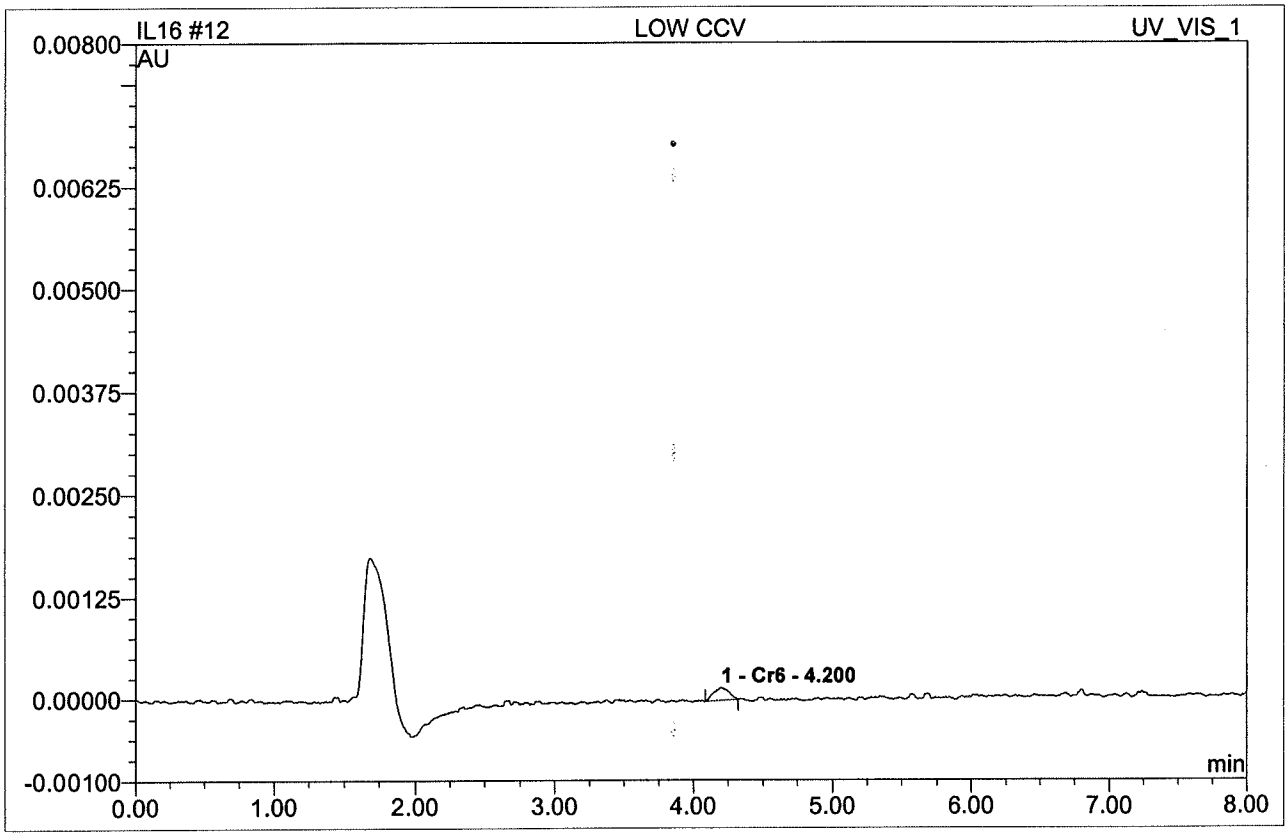


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 012 LOW CCV

0.2 PPB

Sample Name:	**LOW CCV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 18:05**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.20	Cr6	0.0001550	0.0000196	100.00	0.202	BMB
Total:			0.000	0.000	100.00	0.202	

DAILY CALIBRATIONS

Continuing Calibration Summary Form

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG : 21L159
Method : E218.6
QuantMethod : IC59L16
InstrumentID: 59
Parameter : HEXAVALENT CHROMIUM

LFID	LSID	DF	Expected	Result	Unit	%Rec	AnalysisDateTime
IL16012	LOW CCV	1	0.2	0.202	ug/L	101	12/16/2118:05
IL16013	CCV1	1	2	1.972	ug/L	99	12/16/2118:18
IL16025	CCV3	1	2	1.957	ug/L	98	12/16/2120:27
IL16037	CCV5	1	2	1.993	ug/L	100	12/16/2122:32
IL16049	CCV7	1	2	1.915	ug/L	96	12/17/2100:37

CCV Acceptance Criteria: 95-105%
LOW CCV Acceptance Criteria: 80-120%

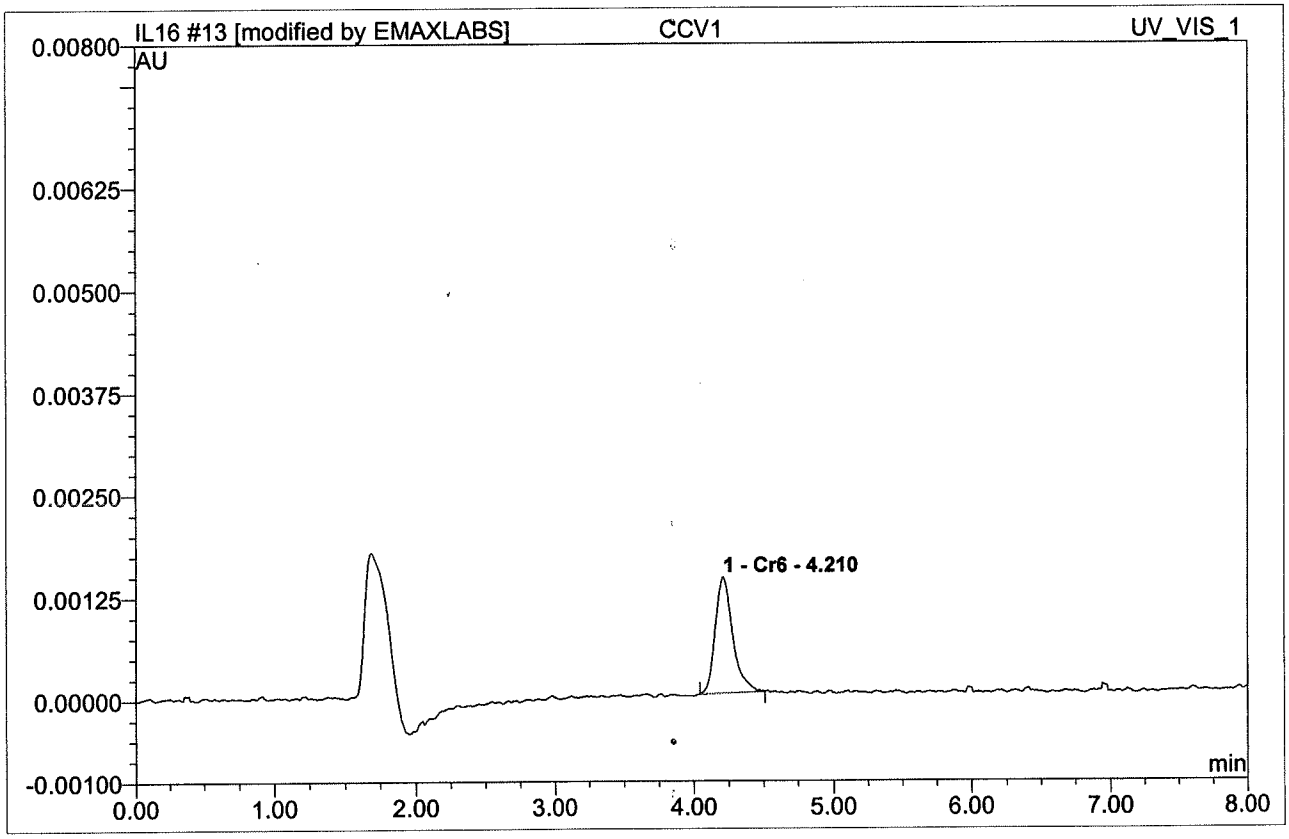
IC RESULT FORM CalVersion : CR6.L16/IL16(2021)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IL16001	IB	C	ND	12/16/2116:00	1
IL16002	S-0	C	ND	12/16/2116:10	1
IL16003	S-1	C	0.198	12/16/2116:31	1
IL16004	S-2	C	0.503	12/16/2116:41	1
IL16005	S-3	C	0.993	12/16/2116:52	1
IL16006	S-4	C	1.985	12/16/2117:02	1
IL16007	S-5	C	5.011	12/16/2117:13	1
IL16008	S-6	C	7.495	12/16/2117:23	1
IL16009	S-7	C	10.002	12/16/2117:33	1
IL16010	ICV	C	101%	12/16/2117:44	1
IL16011	ICB	C	ND	12/16/2117:54	1
IL16012	LOW CCV	C	0.202	12/16/2118:05	1
IL16013	CCV1	C	99%	12/16/2118:18	1
IL16014	CCB1	C	ND	12/16/2118:28	1
IL16015	HCL019WB	C	ND	12/16/2118:39	1
IL16016	HCL019WL	C	1.995	12/16/2118:49	1
IL16017	HCL019WC	C	2.000	12/16/2118:59	1
IL16018	L159-01	C	ND	12/16/2119:10	1
IL16019	L159-01M	C	0.932	12/16/2119:20	1
IL16020	L159-01S	C	0.969	12/16/2119:31	1
IL16021	L159-03	C	7.957	12/16/2119:41	1
IL16022	L159-03M	C	9.982	12/16/2119:56	1
IL16023	L159-04	C	7.954	12/16/2120:06	1
IL16024	L159-04M	C	9.918	12/16/2120:17	1
IL16025	CCV3	C	98%	12/16/2120:27	1
IL16026	CCB3	C	ND	12/16/2120:37	1
IL16027	L159-23	C	ND	12/16/2120:48	1
IL16028	L159-23M	C	ND	12/16/2120:58	1
IL16029	L159-23S	C	ND	12/16/2121:09	1
IL16030	L159-14	C	ND	12/16/2121:19	1
IL16031	L159-14M	C	0.837	12/16/2121:29	1
IL16032	L159-16	C	ND	12/16/2121:40	1
IL16033	L159-16M	C	0.715	12/16/2121:50	1
IL16034	L159-18	C	ND	12/16/2122:01	1
IL16035	L159-18M	C	ND	12/16/2122:11	1
IL16036	L156-01	*	27.165E	12/16/2122:21	1
IL16037	CCV5	C	100%	12/16/2122:32	1
IL16038	CCB5	C	ND	12/16/2122:42	1
IL16039	L159-20	C	ND	12/16/2122:53	1
IL16040	L159-20M	C	0.992	12/16/2123:03	1
IL16041	L159-21	C	7.635	12/16/2123:13	1
IL16042	L159-21M	C	8.688	12/16/2123:24	1
IL16043	L159-22	C	1.699	12/16/2123:34	1
IL16044	L159-22M	C	2.720	12/16/2123:45	1
IL16045	L159-02	C	ND	12/16/2123:55	1
IL16046	L159-02M	C	0.984	12/17/2100:06	1
IL16047	L159-09	C	ND	12/17/2100:16	1
IL16048	L159-09M	C	1.017	12/17/2100:26	1
IL16049	CCV7	C	96%	12/17/2100:37	1
IL16050	CCB7	C	ND	12/17/2100:47	1
IL16051	L159-13	C	ND	12/17/2100:58	1
IL16052	L159-13M	C	0.916	12/17/2101:08	1
IL16053	L159-15	C	ND	12/17/2101:18	1
IL16054	L159-15M	C	0.970	12/17/2101:29	1
IL16055	L159-17	C	ND	12/17/2101:39	1
IL16056	L159-17M	C	0.949	12/17/2101:50	1
IL16057	L159-19	C	ND	12/17/2102:00	1
IL16058	L159-19M	C	0.943	12/17/2102:10	1
IL16059	L159-24	C	ND	12/17/2102:21	1
IL16060	L159-24M	C	0.985	12/17/2102:31	1
IL16061	CCV9	C	98%	12/17/2102:42	1
IL16062	CCB9	C	ND	12/17/2102:52	1
IL16063	L159-23I	C	ND	12/17/2103:02	5
IL16064	L159-23M	C	4.389	12/17/2103:13	5
IL16065	L159-23S	C	4.360	12/17/2103:23	5
IL16066	L159-23J	C	ND	12/17/2103:34	10
IL16067	L159-23M	C	9.387	12/17/2103:44	10
IL16068	L159-23S	C	9.383	12/17/2103:54	10
IL16069	CCV11	C	99%	12/17/2108:19	1
IL16070	CCB11	C	ND	12/17/2108:29	1
IL16071	L159-14I	C	ND	12/17/2108:39	5
IL16072	L159-14M	C	4.754	12/17/2108:50	5
IL16073	L159-16I	C	ND	12/17/2109:00	5
IL16074	L159-16M	C	4.676	12/17/2109:11	5

IL16075	L159-18I	C	ND	12/17/2109:21	5
IL16076	L159-18M	C	4.548	12/17/2109:31	5
IL16077	L159-21I	C	7.667	12/17/2109:52	2
IL16078	L159-21M	C	11.627	12/17/2110:02	2
IL16079	L159-22I	C	1.659	12/17/2110:14	2
IL16080	L159-22M	C	3.646	12/17/2110:24	2
IL16081	CCV13	C	97%	12/17/2110:35	1
IL16082	CCB13	C	ND	12/17/2110:45	1
IL16083	L156-01I	C	27.611	12/17/2110:59	5
IL16084	L159-11	C	ND	12/17/2111:10	1
IL16085	L159-11M	C	0.457	12/17/2111:20	1
IL16086	L159-12	C	ND	12/17/2111:31	1
IL16087	L159-12M	C	0.912	12/17/2111:52	1
IL16088	L159-11I	C	ND	12/17/2112:03	5
IL16089	L159-11M	C	4.525	12/17/2112:13	5
IL16090	CCV15	C	99%	12/17/2112:24	1
IL16091	CCB15	C	ND	12/17/2112:34	1

IL16 013 CCV1

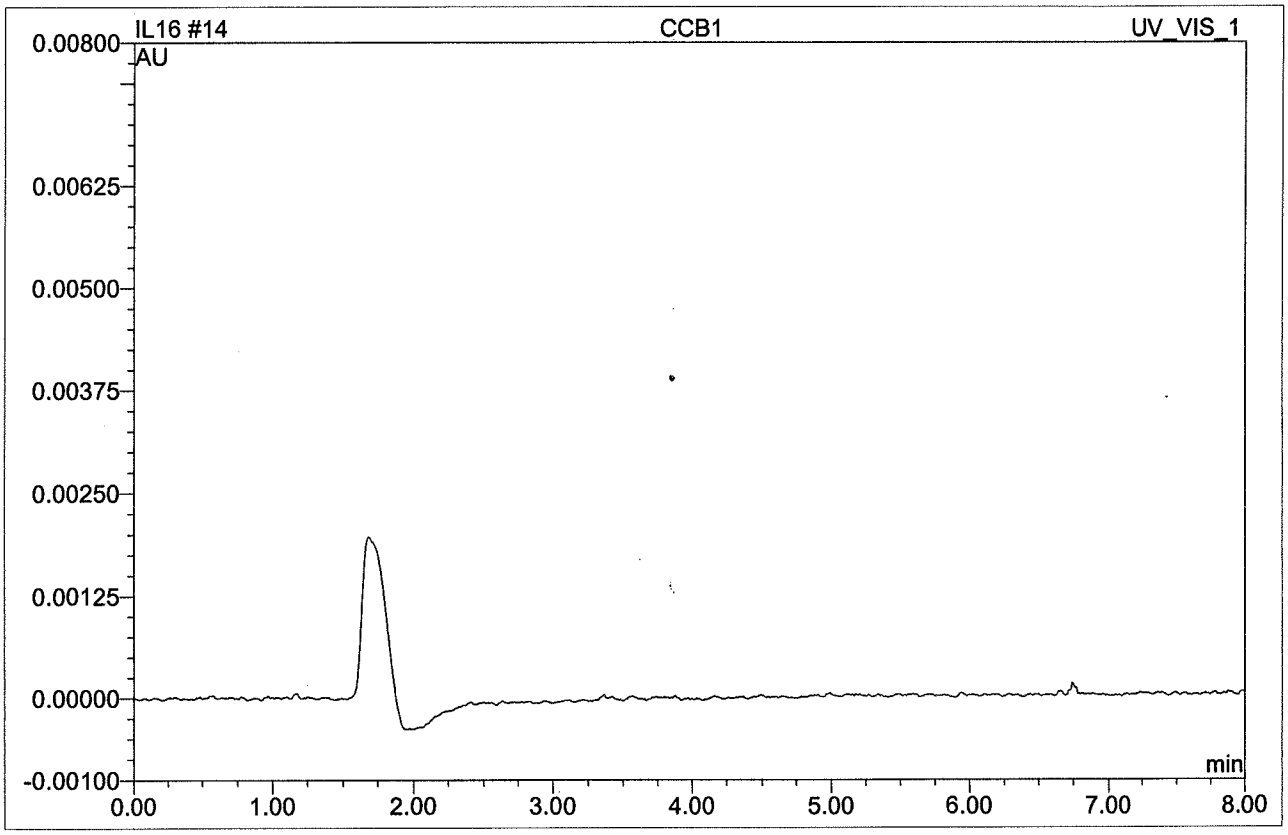
Sample Name:	**CCV1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 18:18**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0014120	0.0002046	100.00	1.972	BMB*
Total:			0.001	0.000	100.00	1.972	

IL16 014 CCB1

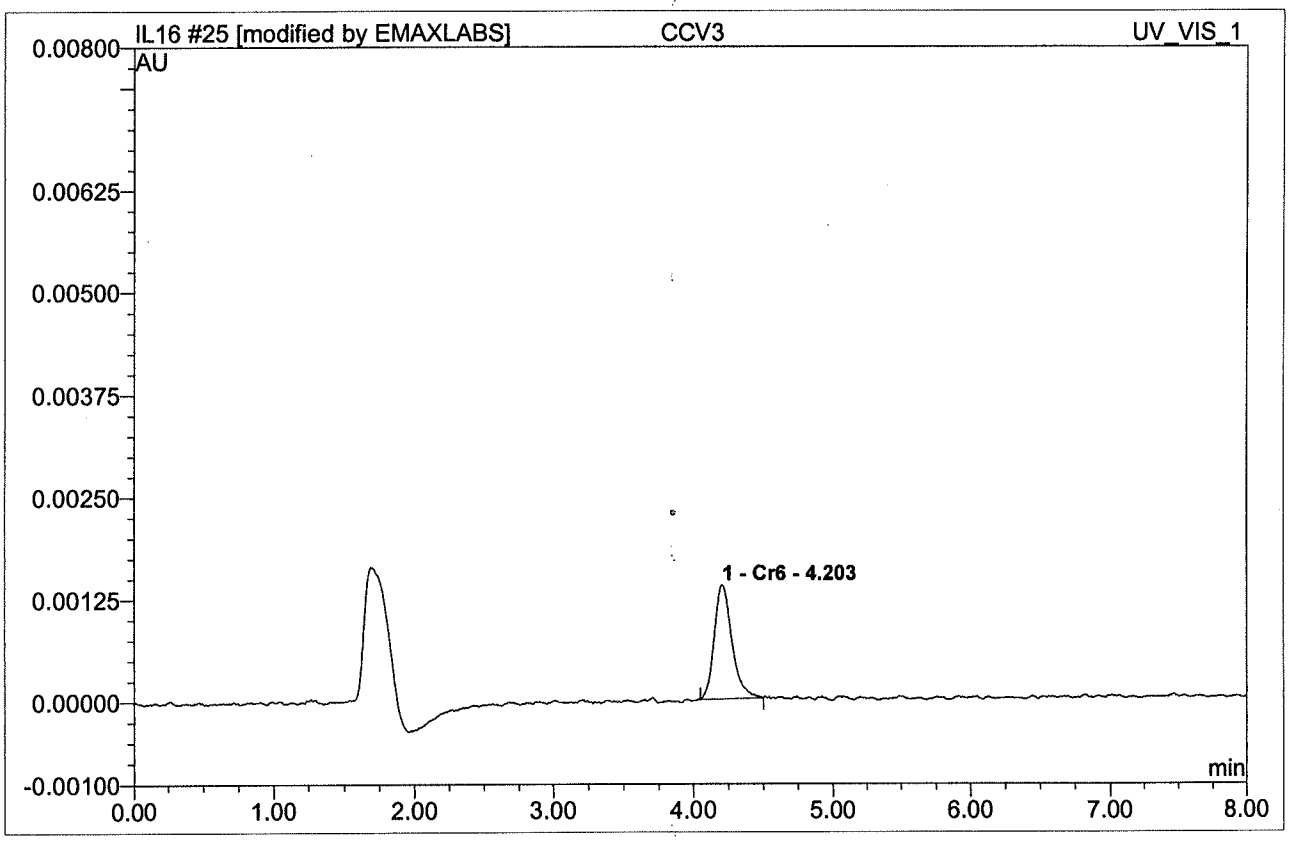
Sample Name:	**CCB1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 18:28**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 025 CCV3

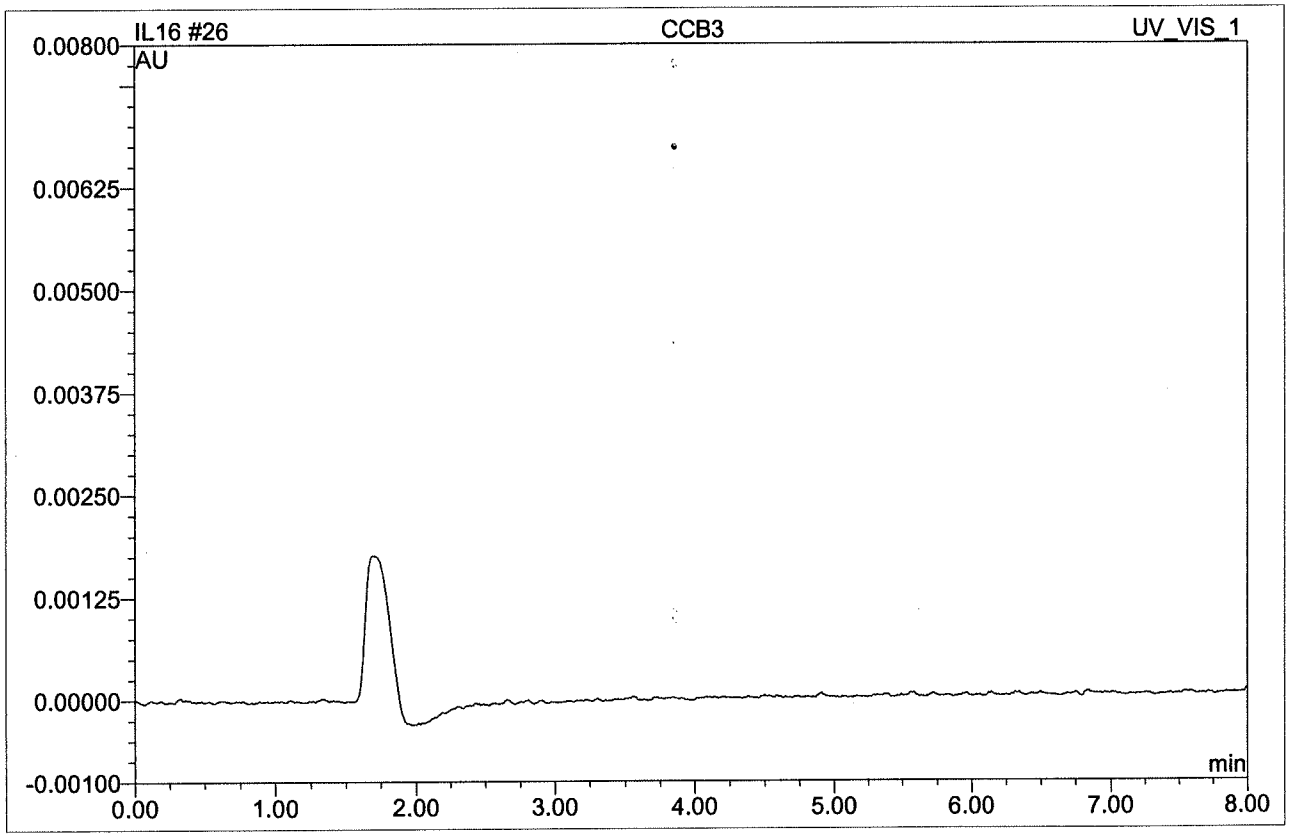
Sample Name:	**CCV3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 20:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.20	Cr6	0.0013870	0.0002030	100.00	1.957	BMB*
Total:			0.001	0.000	100.00	1.957	

IL16 026 CCB3

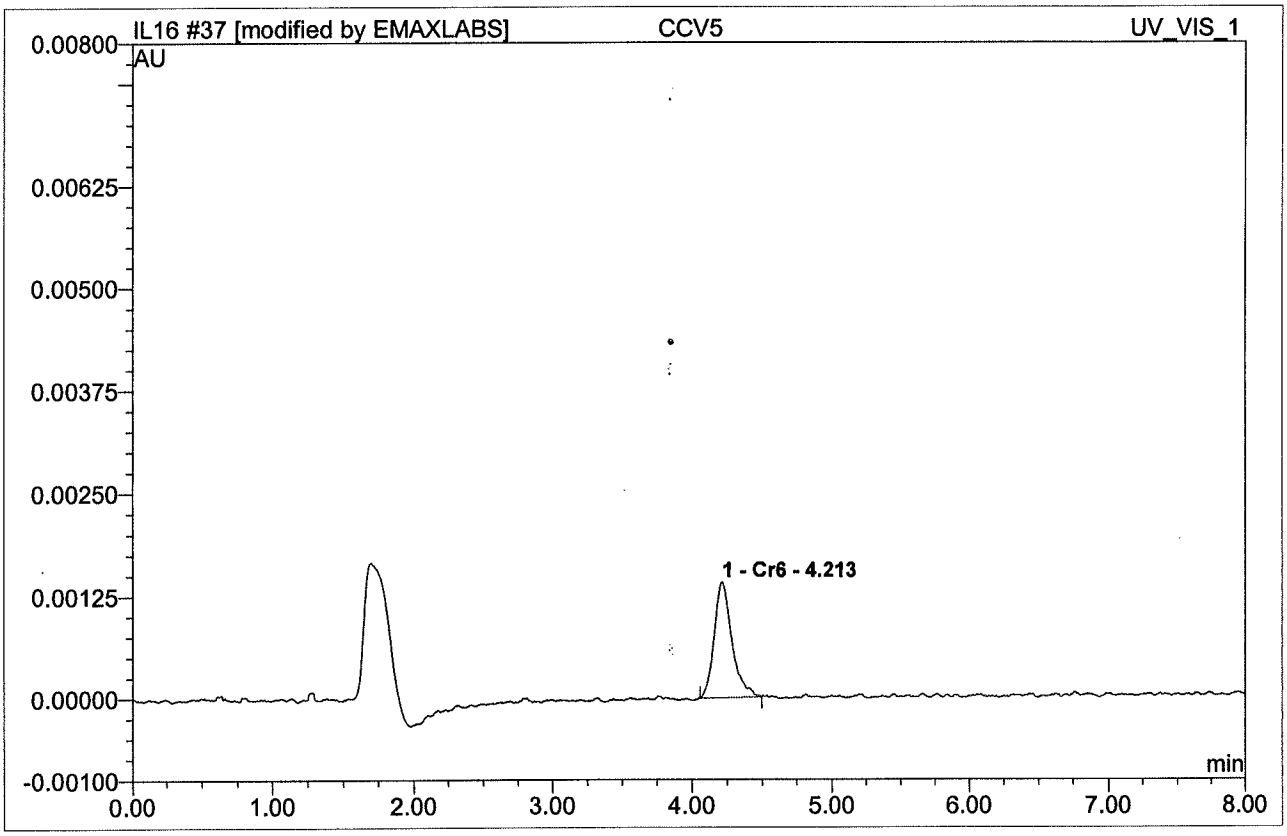
Sample Name:	**CCB3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 20:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 037 CCV5

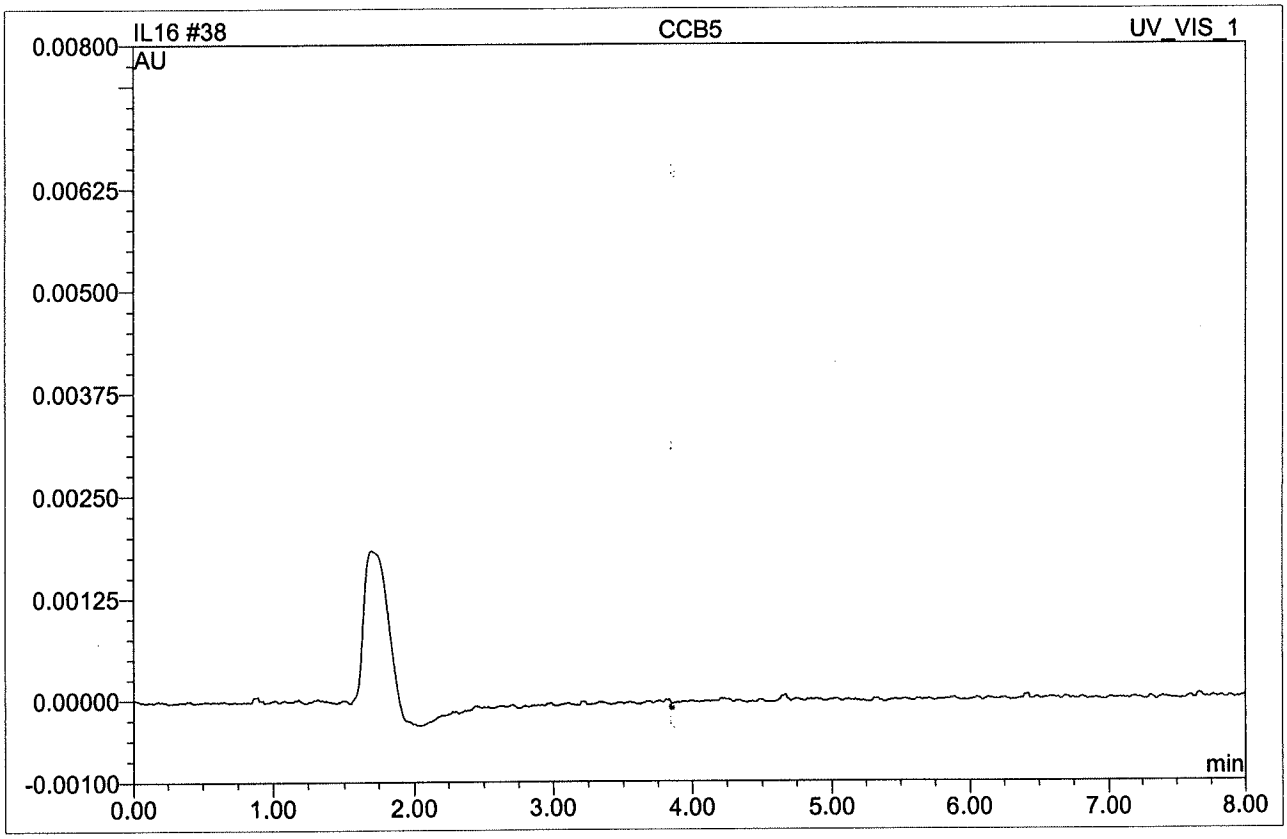
Sample Name:	**CCV5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 22:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0014110	0.0002068	100.00	1.993	BMB*
Total:			0.001	0.000	100.00	1.993	

IL16 038 CCB5

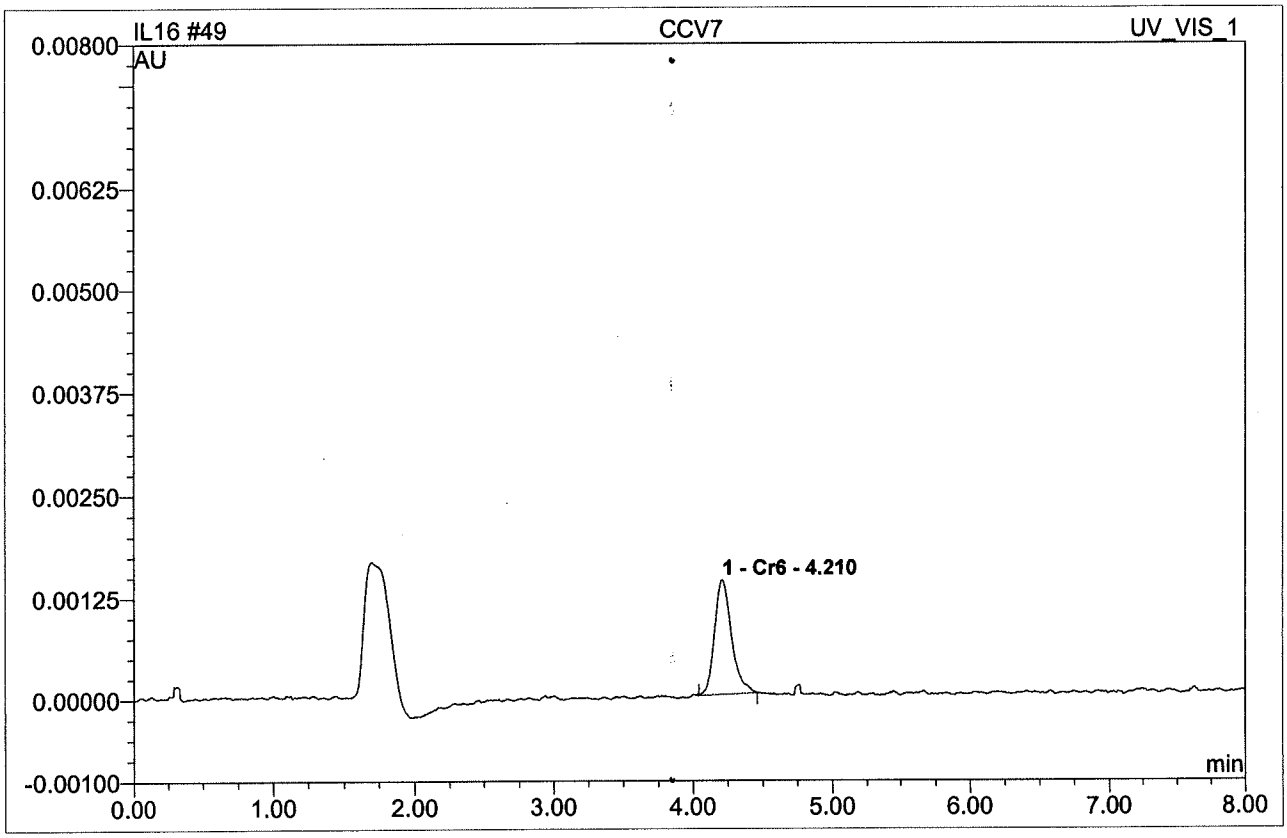
Sample Name:	**CCB5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 22:42**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 049 CCV7

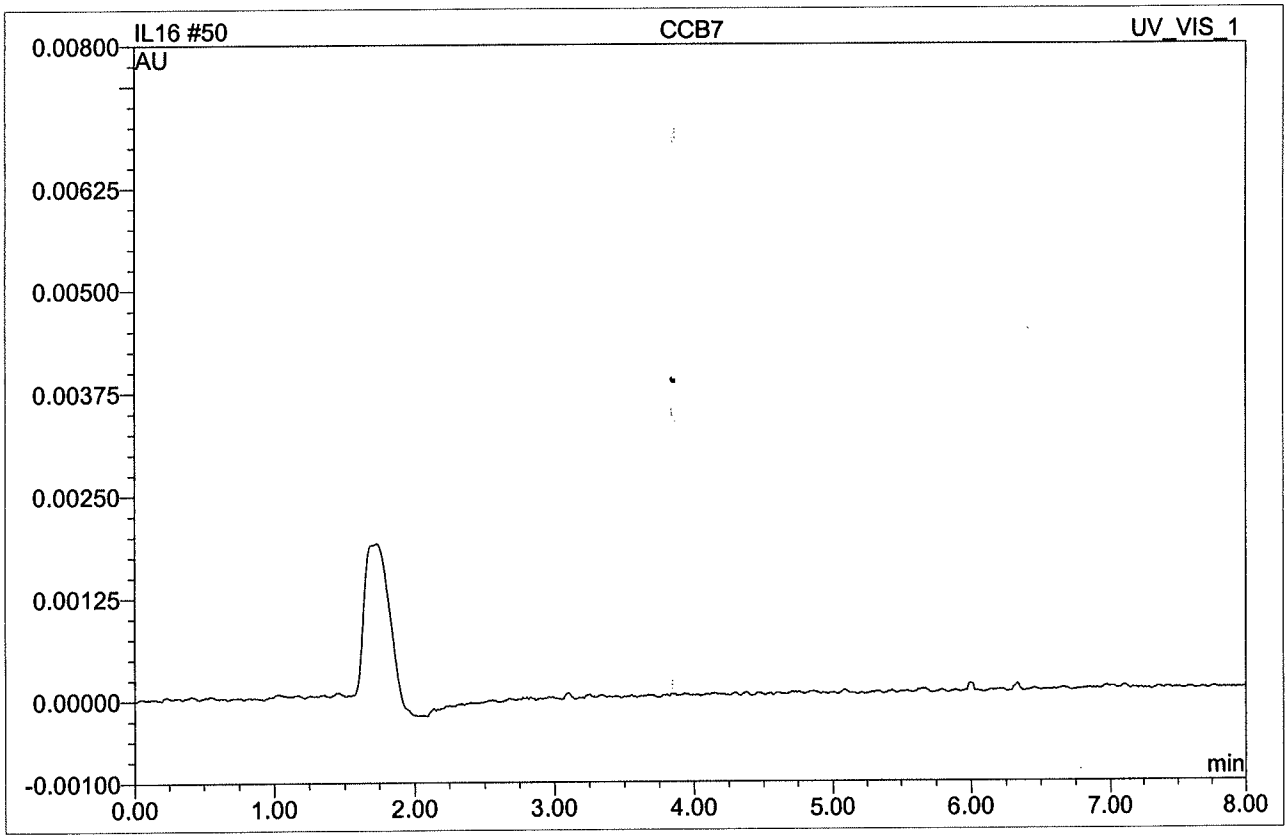
Sample Name:	**CCV7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 0:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0014050	0.0001986	100.00	1.915	BMB
Total:			0.001	0.000	100.00	1.915	

IL16 050 CCB7

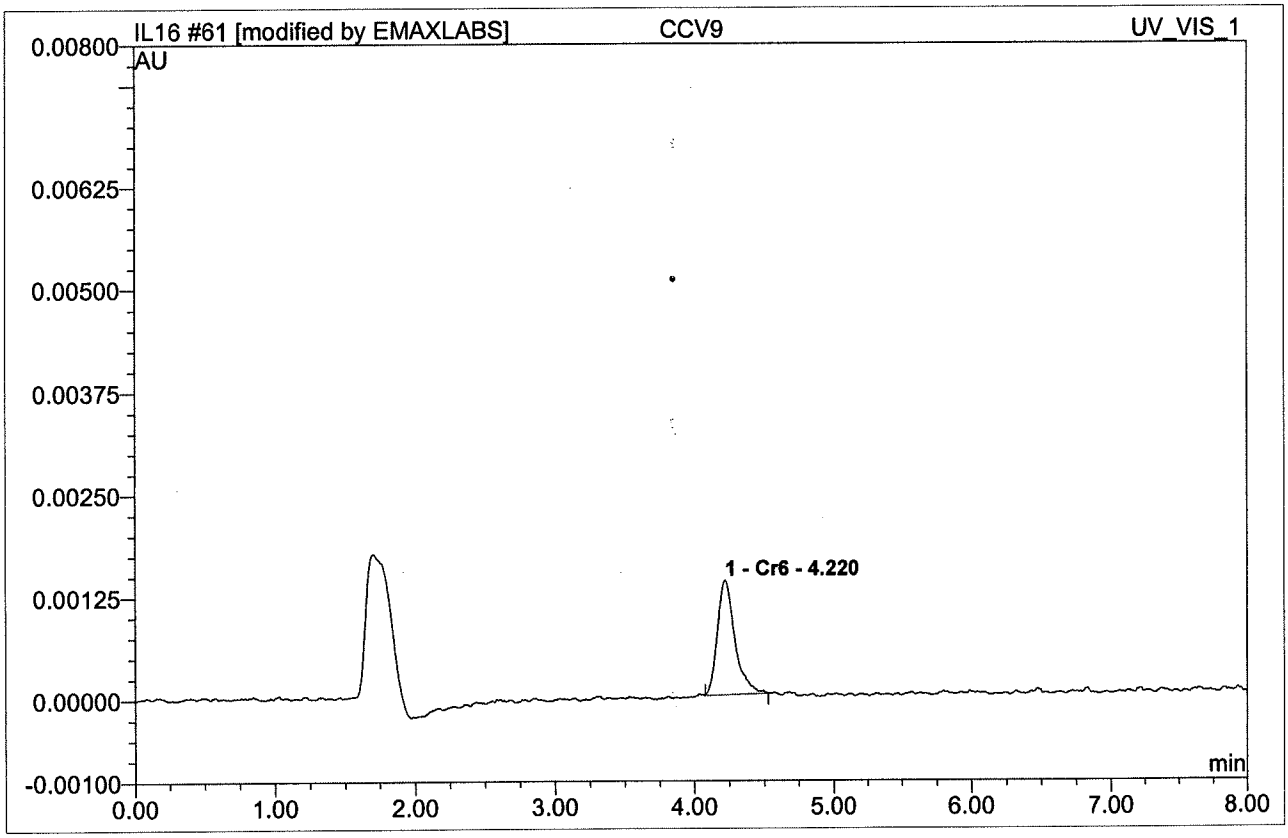
Sample Name:	**CCB7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 0:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 061 CCV9

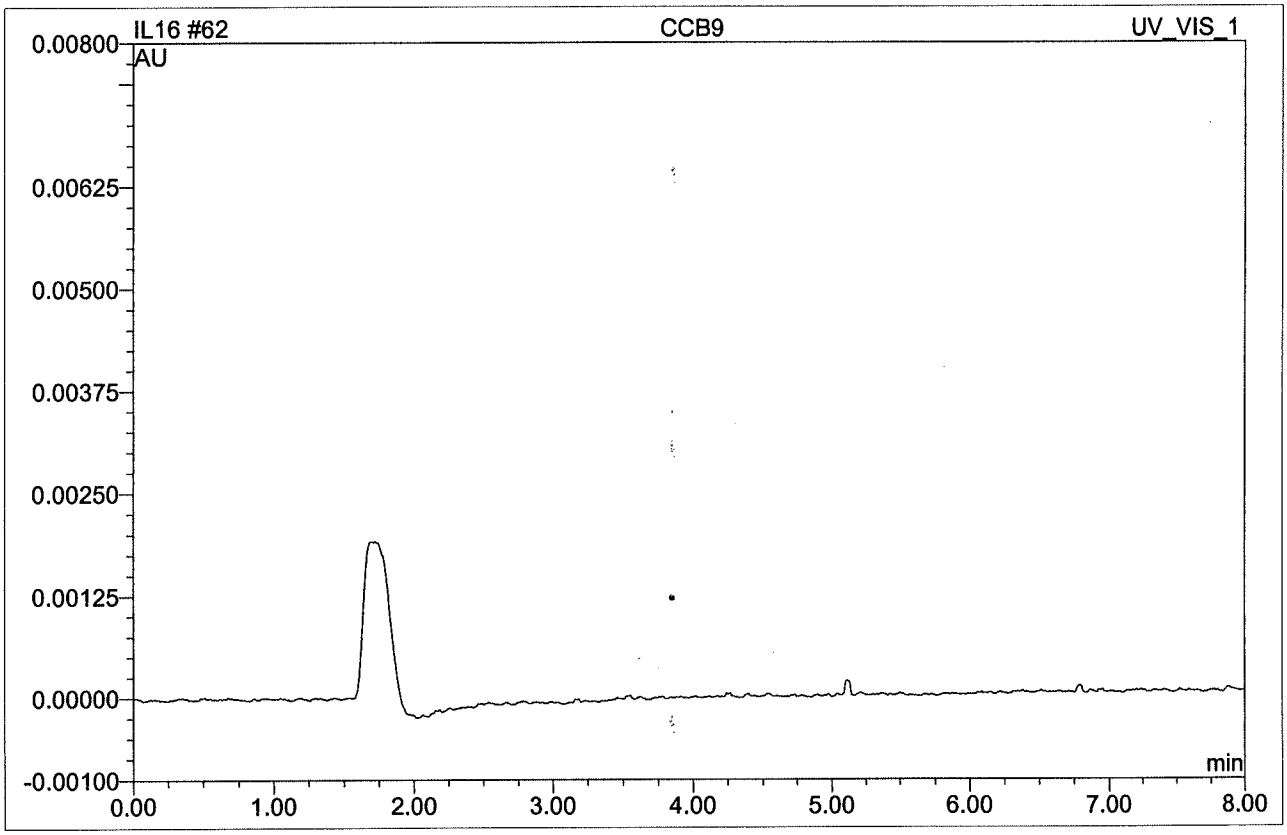
Sample Name:	**CCV9**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 2:42**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.22	Cr6	0.0013960	0.0002034	100.00	1.961	BMB*
Total:			0.001	0.000	100.00	1.961	

IL16 062 CCB9

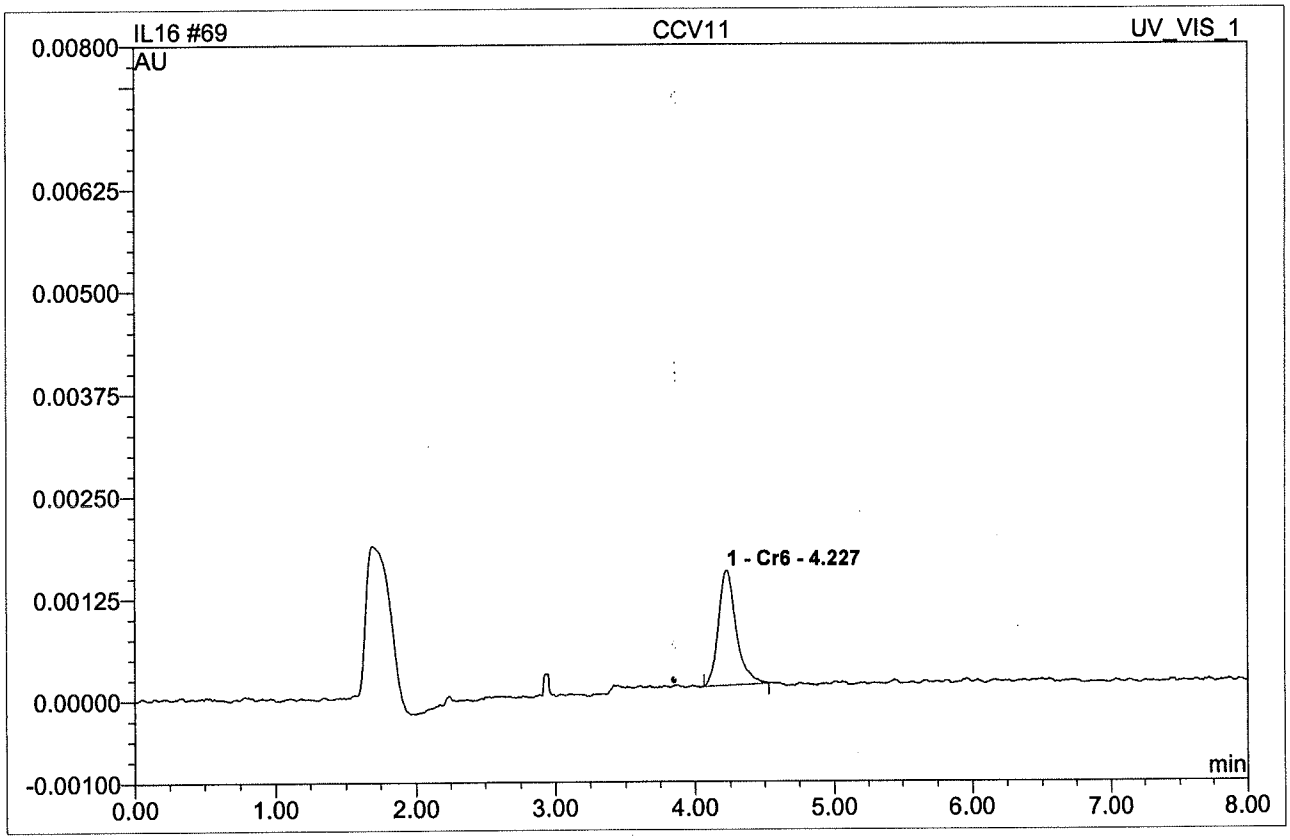
Sample Name:	**CCB9**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 2:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 069 CCV11

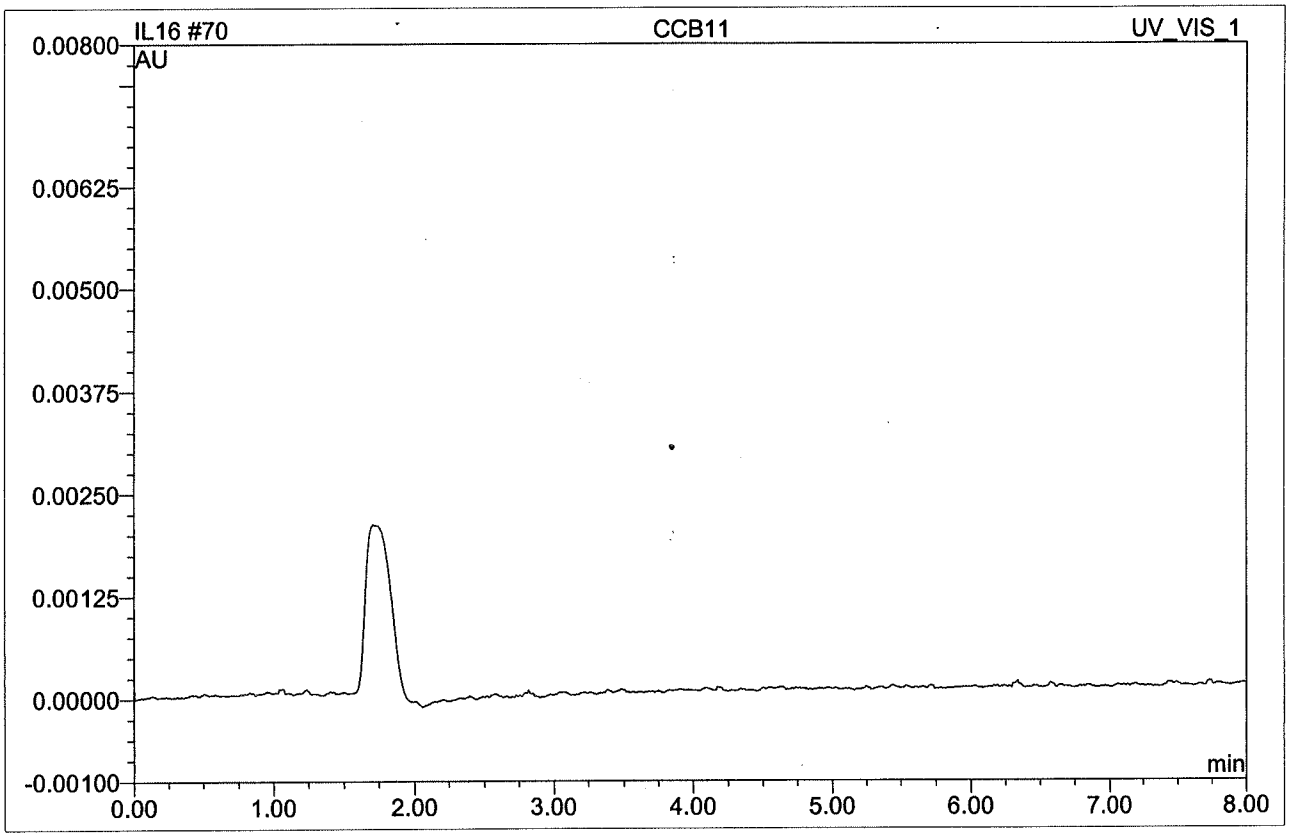
Sample Name:	**CCV11**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 8:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.23	Cr6	0.0014020	0.0002065	100.00	1.990	BMB
Total:			0.001	0.000	100.00	1.990	

IL16 070 CCB11

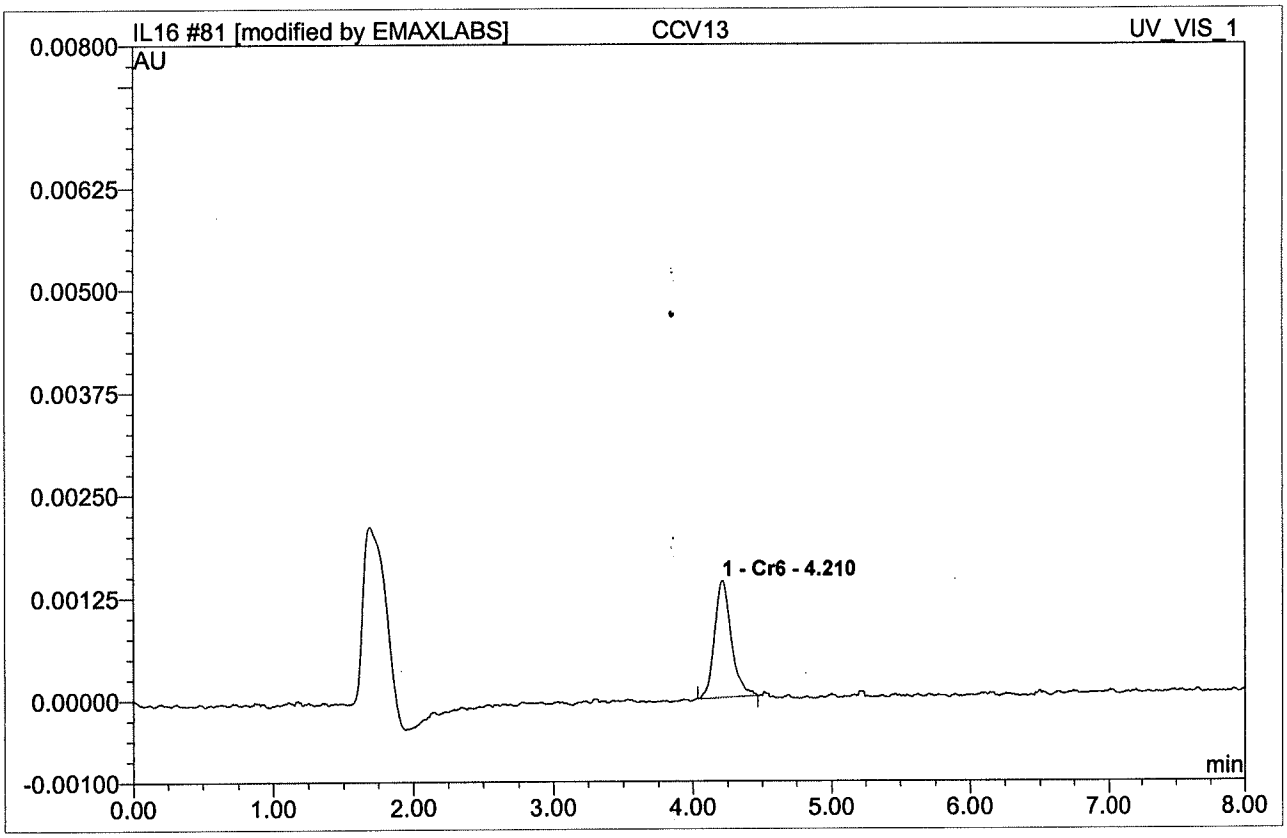
Sample Name:	**CCB11**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 8:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 081 CCV13

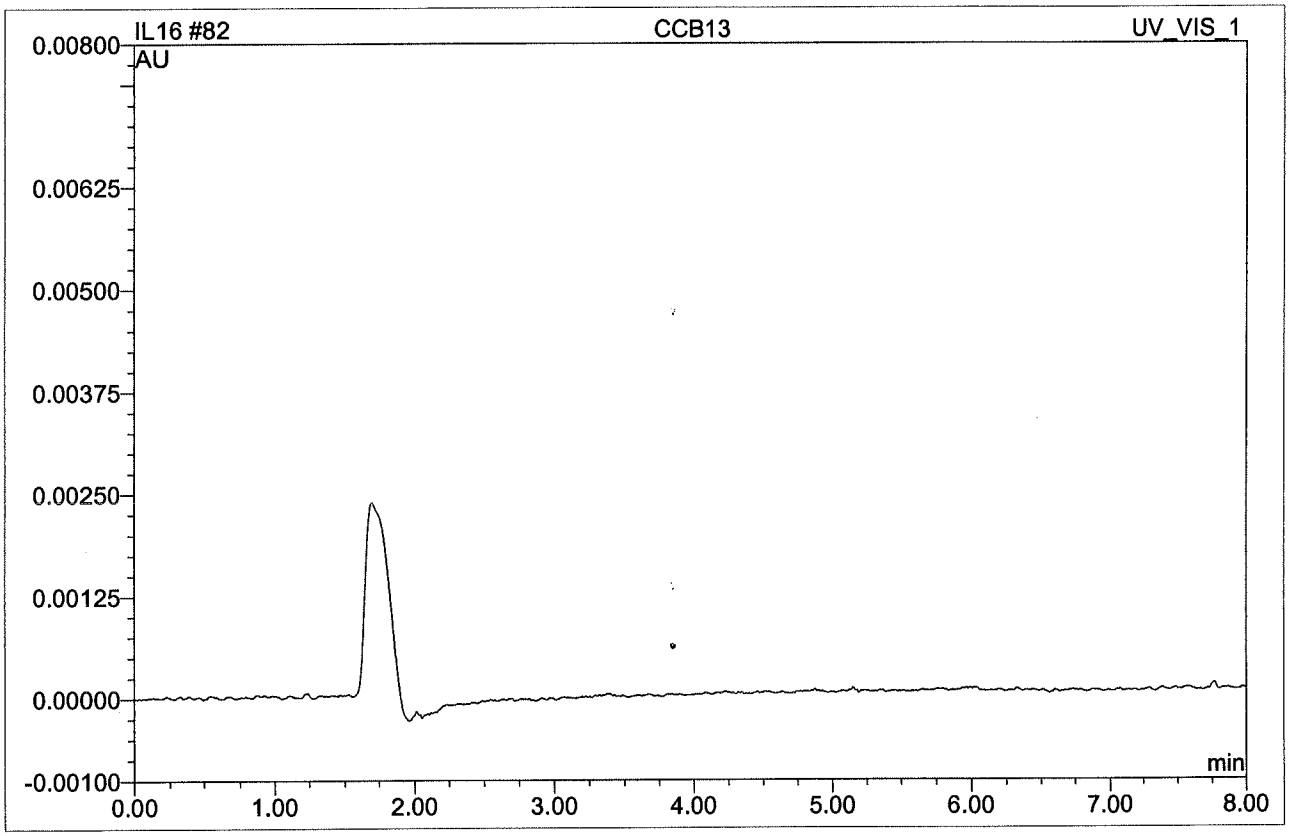
Sample Name:	**CCV13**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 10:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0014220	0.0002021	100.00	1.949	BMB*
Total:			0.001	0.000	100.00	1.949	

IL16 082 CCB13

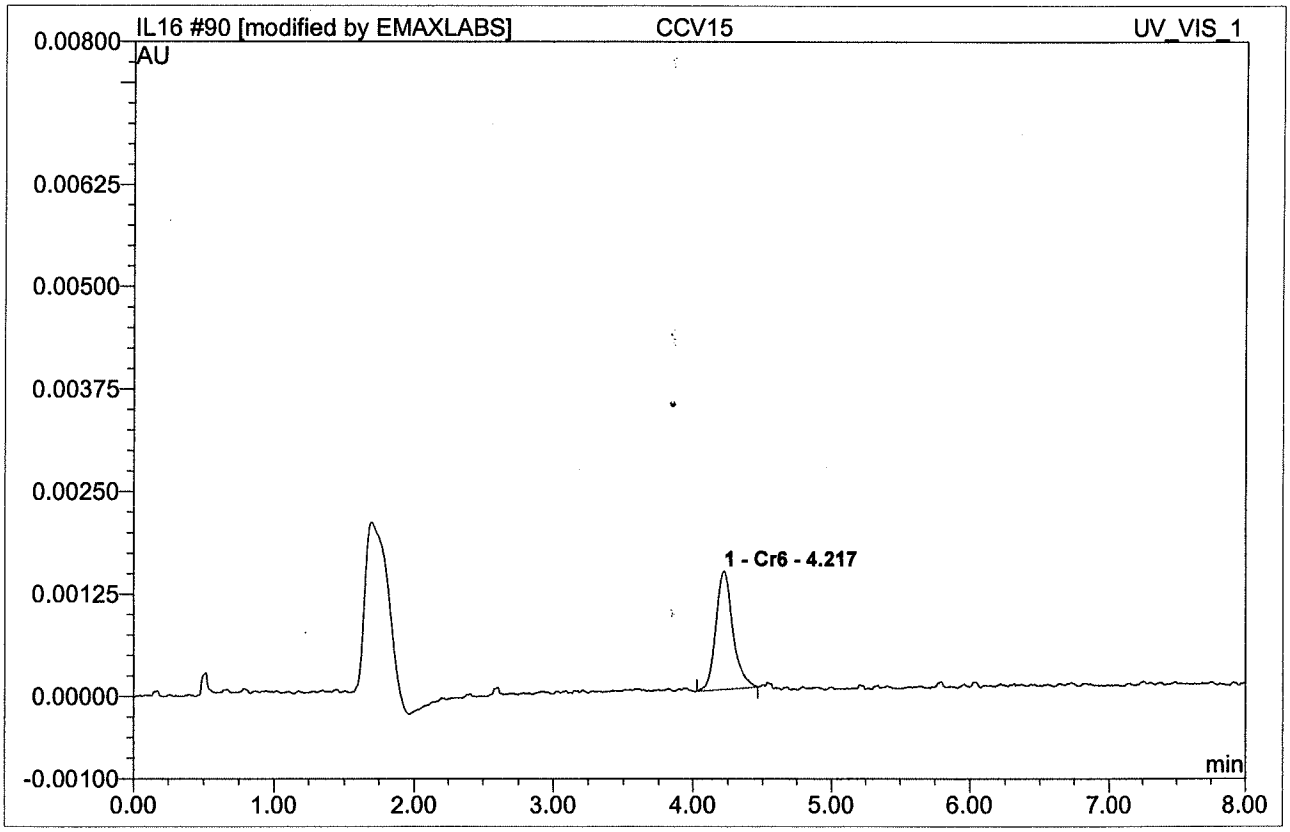
Sample Name:	**CCB13**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 10:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 090 CCV15

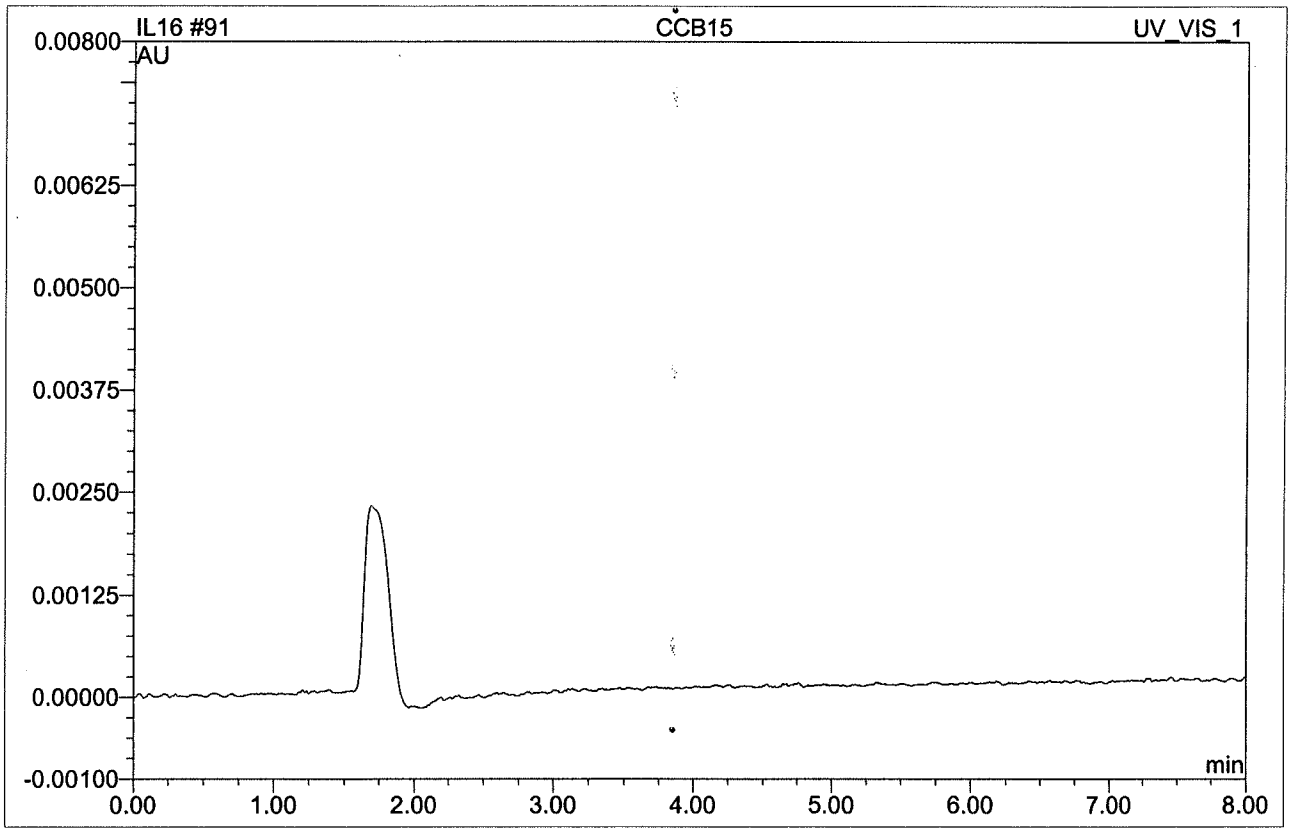
Sample Name:	**CCV15**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 12:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.22	Cr6	0.0014420	0.0002046	100.00	1.972	BMB*
Total:			0.001	0.000	100.00	1.972	

IL16 091 CCB15

Sample Name:	**CCB15**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 12:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

ANALYTICAL LOG(S)

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Post Column Solution: **Final Volume:** 1,000 mL

1,5 Diphenylcarbohydrazide : 0.5 g SW6A-01-01-08

MeOH : 100 mL SW1A-011-01-02

H_2SO_4 : 28 mL ↓ -009 -17-07

Eluent: **Final Volume:** 2,000 mL

$(NH_4)_2SO_4$: 66 g SW6A-01-01-10

NH_4OH : 13 mL SW9A-04-066

☐ **pH Adjusted Water ID #:**
(range 9.3-9.5)

☑ **Buffer** (10 mL → 100 mL) SP2-05-06-01

Reagent Water ID #: RW1-21-005

ICAL Linear Range (ppb): S_0 - 0.00
S_1 - 0.20
S_2 - 0.50
S_3 - 1.00
S_4 - 2.00
S_5 - 5.00
S_6 - 7.50
S_7 - 10.0
ICV - 3.00

Low level CCV (0.20 ppb): SW6B-004-10-03

HCL019W: L159, L159C, L156, L159A, L159B

post-spike 2ppb : 0.100 mL of std. to final volume 5 mL of sample.

Column: Dionex IonPac AS7 (4x250mm) Serial: 19010324B

Guard Column: Dionex IonPac NG1 (4x35mm) Serial: 19061218

Wavelength: 530 nm

Flow Rate: 1.00 mL/min

Injection: 0.250 mL

Book #: A59-054

Instrument No.: 59

Pipette ID: SW9A-04-017
A42762405
SW9A-04-052

Balance ID: 10601202

Analytical Sequence: IL16

Method File: IC59L16

Analytical Batch: HCL019W

SOP #	Rev. #
☑ EMAX-218.6	7
☑ EMAX-7199	7
☐ EMAX-	

STANDARDS ID	
ICAL	SW6B-004-10-01
ICV	↓ -02
CCV	SW6B-004-10-04

LCS/MS STANDARDS

	Standard ID	Conc	Spike Amt	Final Vol
LCS	SW6B-004-09-08	100 ppb	0.100 mL	5 mL
MS	↓	↓	0.050 mL	↓

ELECTRONIC DATA ARCHIVAL

Location	Date
☐ CHROMELEON	
☐	

5 mL vial kit Lot #: 038008 Snap-Seal Container

0.45 µm filter lot #: 21089103 4 oz: 1328163

0.2 µm filter lot #: 1.5 oz: 13621005

Analyzed By: AS

Date: 12/16/21

Sequence: IL16
Operator: EMAXLABS
Printed: 12/19/2021 3:16:00 PM

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 91

FINAL

Created: 12/16/2021 3:59:11 PM by EMAXLABS
Last Update: 12/19/2021 3:06:53 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
1	IL16	001	IB	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:00:10 PM	1.0000	BUFFER
2	IL16	002	S-0	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:10:34 PM	1.0000	
3	IL16	003	S-1	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:31:27 PM	1.0000	0.2 PPB
4	IL16	004	S-2	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:41:51 PM	1.0000	0.5 PPB
5	IL16	005	S-3	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:52:15 PM	1.0000	1.0 PPB
6	IL16	006	S-4	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:02:39 PM	1.0000	2.0 PPB
7	IL16	007	S-5	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:13:03 PM	1.0000	5.0 PPB
8	IL16	008	S-6	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:23:27 PM	1.0000	7.5 PPB
9	IL16	009	S-7	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:33:51 PM	1.0000	10 PPB
10	IL16	010	ICV	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:44:15 PM	1.0000	3.0 PPB
11	IL16	011	ICB	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:54:39 PM	1.0000	
12	IL16	012	LOW CCV	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 6:05:04 PM	1.0000	0.2 PPB
13	IL16	013	CCV1	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 6:18:15 PM	1.0000	
14	IL16	014	CCB1	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 6:28:39 PM	1.0000	
15	IL16	015	HCL019WB	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 6:39:03 PM	1.0000	
16	IL16	016	HCL019WL	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 6:49:27 PM	1.0000	
17	IL16	017	HCL019WC	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 6:59:51 PM	1.0000	
18	IL16	018	L159-01	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 7:10:16 PM	1.0000	
19	IL16	019	L159-01M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 7:20:40 PM	1.0000	
20	IL16	020	L159-01S	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 7:31:04 PM	1.0000	
21	IL16	021	L159-03	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 7:41:29 PM	1.0000	
22	IL16	022	L159-03M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 7:56:20 PM	1.0000	
23	IL16	023	L159-04	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 8:06:44 PM	1.0000	
24	IL16	024	L159-04M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 8:17:09 PM	1.0000	
25	IL16	025	CCV3	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 8:27:33 PM	1.0000	
26	IL16	026	CCB3	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 8:37:57 PM	1.0000	
27	IL16	027	L159-23	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 8:48:21 PM	1.0000	

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Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 91

FINAL

Created: 12/16/2021 3:59:11 PM by EMAXLABS
Last Update: 12/19/2021 3:06:53 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
28	IL16	028	L159-23M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 8:58:45 PM	1.0000	
29	IL16	029	L159-23S	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 9:09:09 PM	1.0000	
30	IL16	030	L159-14	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 9:19:33 PM	1.0000	
31	IL16	031	L159-14M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 9:29:57 PM	1.0000	
32	IL16	032	L159-16	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 9:40:22 PM	1.0000	
33	IL16	033	L159-16M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 9:50:46 PM	1.0000	
34	IL16	034	L159-18	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 10:01:10 PM	1.0000	
35	IL16	035	L159-18M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 10:11:34 PM	1.0000	
36	IL16	036	L156-01	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 10:21:58 PM	1.0000	OVER RANGE
37	IL16	037	CCV5	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 10:32:23 PM	1.0000	
38	IL16	038	CCB5	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 10:42:47 PM	1.0000	
39	IL16	039	L159-20	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 10:53:11 PM	1.0000	
40	IL16	040	L159-20M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 11:03:35 PM	1.0000	
41	IL16	041	L159-21	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 11:13:59 PM	1.0000	
42	IL16	042	L159-21M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 11:24:24 PM	1.0000	
43	IL16	043	L159-22	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 11:34:48 PM	1.0000	
44	IL16	044	L159-22M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 11:45:12 PM	1.0000	
45	IL16	045	L159-02	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 11:55:36 PM	1.0000	
46	IL16	046	L159-02M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:06:01 AM	1.0000	
47	IL16	047	L159-09	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:16:25 AM	1.0000	
48	IL16	048	L159-09M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:26:49 AM	1.0000	
49	IL16	049	CCV7	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:37:13 AM	1.0000	
50	IL16	050	CCB7	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:47:37 AM	1.0000	
51	IL16	051	L159-13	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:58:01 AM	1.0000	
52	IL16	052	L159-13M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 1:08:26 AM	1.0000	
53	IL16	053	L159-15	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 1:18:50 AM	1.0000	
54	IL16	054	L159-15M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 1:29:14 AM	1.0000	

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Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 91

FINAL

Created: 12/16/2021 3:59:11 PM by EMAXLABS
Last Update: 12/19/2021 3:06:53 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
55	IL16	055	L159-17	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 1:39:39 AM	1.0000	
56	IL16	056	L159-17M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 1:50:03 AM	1.0000	
57	IL16	057	L159-19	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 2:00:27 AM	1.0000	
58	IL16	058	L159-19M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 2:10:51 AM	1.0000	
59	IL16	059	L159-24	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 2:21:16 AM	1.0000	
60	IL16	060	L159-24M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 2:31:40 AM	1.0000	
61	IL16	061	CCV9	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 2:42:04 AM	1.0000	
62	IL16	062	CCB9	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 2:52:28 AM	1.0000	
63	IL16	063	L159-23I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:02:52 AM	5.0000	1mLto5mL
64	IL16	064	L159-23M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:13:16 AM	5.0000	1mLto5mL
65	IL16	065	L159-23S	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:23:40 AM	5.0000	1mLto5mL
66	IL16	066	L159-23J	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:34:04 AM	10.0000	0.5mLto5mL
67	IL16	067	L159-23M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:44:28 AM	10.0000	0.5mLto5mL
68	IL16	068	L159-23S	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:54:53 AM	10.0000	0.5mLto5mL
69	IL16	069	CCV11	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 8:19:10 AM	1.0000	
70	IL16	070	CCB11	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 8:29:34 AM	1.0000	
71	IL16	071	L159-14I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 8:39:58 AM	5.0000	1mLto5mL
72	IL16	072	L159-14M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 8:50:22 AM	5.0000	1mLto5mL
73	IL16	073	L159-16I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 9:00:46 AM	5.0000	1mLto5mL
74	IL16	074	L159-16M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 9:11:11 AM	5.0000	1mLto5mL
75	IL16	075	L159-18I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 9:21:35 AM	5.0000	1mLto5mL
76	IL16	076	L159-18M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 9:31:59 AM	5.0000	1mLto5mL
77	IL16	077	L159-21I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 9:52:08 AM	2.0000	2.5mLto5mL
78	IL16	078	L159-21M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 10:02:32 AM	2.0000	2.5mLto5mL
79	IL16	079	L159-22I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 10:14:18 AM	2.0000	2.5mLto5mL
80	IL16	080	L159-22M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 10:24:42 AM	2.0000	2.5mLto5mL
81	IL16	081	CCV13	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 10:35:06 AM	1.0000	

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Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 91

FINAL

Created: 12/16/2021 3:59:11 PM by EMAXLABS
Last Update: 12/19/2021 3:06:53 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
82	IL16	082	CCB13	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 10:45:31 AM	1.0000	
83	IL16	083	L156-01I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 10:59:58 AM	5.0000	1mLto5mL
84	IL16	084	L159-11	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 11:10:22 AM	1.0000	
85	IL16	085	L159-11M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 11:20:46 AM	1.0000	
86	IL16	086	L159-12	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 11:31:10 AM	1.0000	
87	IL16	087	L159-12M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 11:52:51 AM	1.0000	
88	IL16	088	L159-11I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:03:16 PM	5.0000	1mLto5mL
89	IL16	089	L159-11M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:13:40 PM	5.0000	1mLto5mL
90	IL16	090	CCV15	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:24:04 PM	1.0000	
91	IL16	091	CCB15	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:34:28 PM	1.0000	

Chromeleon © Dionex Corporation, Version 6.70 SP2a Build 1871

SAMPLE PRESERVATION LOG(S)

EMAX LABORATORIES, INC.

pH ADJUSTMENT/SAMPLE PRESERVATION LOG FOR HEXAVALENT CHROMIUM

SOP ☑ EMAX-218.6 Rev. 7 ☐ EMAX-7199 Rev. 7

Matrix: W Start Date: 12/15/21 Time: 9:00 End Date: 12/15/21 Time: 19:40

Book #: PHC-026

Sample Prep ID	Lab Sample ID	Initial pH	Final pH	Notes
01	L156-01	8.50	9.28	0.040mL→40mL; Cr
02	L159-01	9.50	9.50	no adjustment needed; Cr
03	-02	9.50	9.50	
04	-03	9.49	9.49	
05	-04	9.50	9.50	
06	-05	9.50	9.50	
07	-06	9.49	9.49	
08	-07	9.50	9.50	
09	-08	9.48	9.48	
10	-09	9.50	9.50	
11	-10	9.46	9.46	
12	-11	9.38	9.38	
13	-12	9.39	9.39	
14	-13	9.50	9.50	
15	-14	9.47	9.47	
16	-15	9.50	9.50	
17	-16	9.48	9.48	
18	-17	9.50	9.50	
19	-18	9.49	9.49	
20	-19	9.49	9.49	
21	-20	9.50	9.50	
22	-21	9.46	9.46	
23	-22	9.50	9.50	
24	-23	9.49	9.49	
25	-23M	9.50	9.50	
26	-23S	9.50	9.50	
27	-24	9.48	9.48	

Standards	ID	pH
Buffer 7	SW1-02-07-30	7.00
Buffer 10	↓ -08-01	10.0
Check pH Buffer (8)		
Check pH Buffer 7.99	SW1-02-08-16	7.95
pH meter	F7	

Reagent	Standard ID #
NaOH	SWR1-03-04-02
$(NH_4)_2SO_4/NH_4OH$	
HNO_3	

Legend:

Color	Texture	Clarity	Artifacts
Bu = Blue Bl = Black	Cs = Coarse	Cr = Clear	Rk = Rocks
Bn = Brown Gn = Green	Md = Medium	Cy = Cloudy	Sl = Shale
Og = Orange Rd = Red	Fn = Fine	Td = Turbid	Vg = Vegetation
Yw = Yellow			

☑ Samples were received with preservation

Comments:

Prepared By: AS

Standard Added By: AS

Checked By: AS

AS 12/15/21

RETENTION TIME WINDOW

RETENTION TIME WINDOW

METHOD 218.6/7199

Lab Name:	EMAX	**METHOD:**	EMAX-218.6/7199
Instrument ID:	DX500IC59	**IC COLUMN:**	AS7/AG7 / AS7/NG1
		COLUMN SIZE:	4x250mm

Compound	Ical Mean RT	from	to	Retention Time Window
CHROMIUM VI	**4.21**	4.10	4.32	**0.108**

IC59L16

STANDARD LOG(S)

EMAX LABORATORIES, INC.

STANDARDS LOG FOR HEXAVALENT CHROMIUM

Method HEXAVALENT CHROMIUM **Book #:** SW6B-004

Standard ID	Name	Source	Conc. (mg/L)	Aliquot (ml)	Solvent ID	Final Vol (ml)	Final Conc. (mg/L)	Preparation Date	Expiration Date	Prepared By	Comments	Micropipette ID
SW6B-004-10-01	Cr6	SW6B-004-09-07	100ppb	0.20mL	SP2-05-06-01	100mL	0.20ppb	12/16/21	12/17/21	AS	ICAL(Buffer)	A
SW6B-004-10-				0.50			0.50					B
SW6B-004-10-				1.00			1.00					B
SW6B-004-10-				2.00			2.00					B
SW6B-004-10-				5.00			5.00					C
SW6B-004-10-				7.50			7.50					C
SW6B-004-10-				10.0			10.0					C
SW6B-004-10-02	Cr6	SW6B-004-09-08	100ppb	3.00mL	SP2-05-06-01	100mL	3.00ppb	12/16/21	12/17/21	AS	ICV(buffer)	C
SW6B-004-10-03	Cr6	SW6B-004-09-07	100ppb	0.20mL	SP2-05-06-01	100mL	0.20ppb	12/16/21	12/17/21	AS	Low CCV(buffer)	A
SW6B-004-10-04	Cr6	SW6B-004-09-07	100ppb	2.00mL	SP2-05-06-01	100mL	2.00ppb	12/16/21	12/17/21	AS	CCV(Buffer)	B
SW6B-004-10-05	Cr6	SW6B-004-09-07	100ppb	2.00mL	SP2-05-06-01	100mL	2.00ppb	12/17/21	12/18/21	AS	CCV (Buffer)	B
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												

Micropipette ID Legend: **A.** SW9A-04-052 **B.** A42762405 **C.** SW9A-04-017 **D.** SI1A-04-4 **E.** SW3-01-33 **F.** 39380025

Balance ID: _____

EMAX
LABORATORIES, INC.
3051 Fujita Street
Torrance, CA 90505
Tel: (310)-618-8889

Date: 01-11-2022
EMAX Batch No.: 21L159A

Attn: Laura Madsen

ARCADIS
1410 Rocly Ridge Dr #330
Roseville CA 95661

Subject: Laboratory Report
Project: PG&E TOPOCK-GMP

Enclosed is the Laboratory report for samples received on 12/15/21.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW-92-037-Q421	L159-05	12/14/21	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED METALS BY ICP-MS NITRATE-N BY IC
MW-92-072-Q421	L159-06	12/14/21	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED METALS BY ICP-MS NITRATE-N BY IC
MW-92-102-Q421	L159-07	12/14/21	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED METALS BY ICP-MS NITRATE-N BY IC
MW-92-122-Q421	L159-08	12/14/21	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED METALS BY ICP-MS NITRATE-N BY IC
EB-745-Q421	L159-09	12/14/21	WATER	CHROMIUM HEXAVALENT BY IC

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912021-19
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

EMAX LABORATORIES, INC.

CHAIN OF CUSTODY RECORD

21L159

Page 1 of 1

Contact us:
3051 Fujita St, Torrance, CA 90505
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Riggie Tep		Phone: 949-727-1400, ext 200 Fax:
Title: Field Tech	Phone: 916-786-3302 Fax:	
Signature: Date: 12/14/21	Sampled By: Riggie Tep	
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	
Project Name: PG&E Topock - RCM	Signature: Date: 12/14/21	
Project Number: 30110373.4Q21GW		

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE				
Geotracker		RWQCB	✓	1. Chilled		
Labspec		CalTrans		2. Headspace		
Others	✓	LEVEL III		3. Container Intact		
Specify: RWQCB		LEVEL IV		4. Seal Present		
Global ID:		Regulatory		5. IR number		
		Specify State:		6. Method of Cooling:		

Sample Temp:

Courier:

Tracking No.:

Matrix: Ground [X] Sediment; Potable [ ] Soil; NPDES [ ] Other Solid; Surface [ ]

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	125 mL poly: Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4	500mL poly: Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese,	500mL poly: Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium,	500mL poly: Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	5	MW-92-037-Q421	12/14/2021	9:04		X	X	X	X	X	E	3	P	BNS	
2	6	MW-92-072-Q421	12/14/2021	8:36		X	X	X	X	X	E	3	P	BNS	
3	7	MW-92-102-Q421	12/14/2021	8:08		X	X	X	X	X	E	3	P	BNS	
4	8	MW-92-122-Q421	12/14/2021	7:38		X	X	X	X	X	E	3	P	BNS	
5	9	EB-745-Q421	12/14/2021	10:50		X					E	1	P	BNS	
6															
7															
8															
9															
10															
11															
12															
13															
14															

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Riggie Tep	12/14/21 1230	FEDEX	12/14/21
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
		Received: Jocelyne Solis-Ramos	12/15/21 10:00
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished 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
- [x] E = Routine 5-7 Workdays

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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. Torms 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:	B	(NH4)2SO4/NH4OH	

Container Type:

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

White=Laboratory Copy

Yellow=Customer's Copy

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 21L159
☑ Fedex ☐ UPS ☐ GSO ☐ Others	775491613801, 775491614110	Recipient Jocelyne Solis-Ramos
☐ EMAX Courier ☐ Client Delivery		Date 12/15/21 Time 10:00

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☑ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note:

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☑ Other plastic bags			
Condition	☐ Custody Seal	☐ Intact	☐ Damaged			
Packaging	☐ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐ _____	
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 4.7 °C	☑ Cooler 2 0.5 °C	☐ Cooler 3 _____ °C	☐ Cooler 4 _____ °C	☐ Cooler 5 _____ °C	
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C	
Thermometer:	A - S/N ~~210191066~~ a 14/4	(B) S/N 210271396	C - S/N 210271399	D - S/N _____		

Comments: ☐ Temperature is out of range. PM was informed IMMEDIATELY.

Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1-8,10-12,14-23,9,13,24		D12	received 125ml poly for E218.6	ok
JSR 12/15 6~~5~~-8,10-12,14,16,18,20-23	11,14,17,21,24,27,31,35,	D17	containers for Nitrate/Nitrite are	R2
	39,43,46,49,52-54	D10	unpreserved - stated on label as pH <2 on COC.	R2
9	20	D1		R1

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. JSR 12/15

NOTES/OBSERVATIONS: samples 9,13,15, and 24 containers for E218.6 are not stated as ~~field~~ field-filter on label, but stated on COC.

☐ Continue to next page.

LEGEND:

Code	Description- Sample Management
(D1)	Analysis is not indicated in label
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in _____
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
(D10)	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
(D12)	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in _____
(D17)	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	_____
D23	_____
D24	_____

Code	Description-Sample Management
R1	Proceed as indicated in ☑ COC ☐ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	_____
R9	_____
R10	_____
R11	_____
R12	_____

REVIEWS:

Sample Labeling Jocelyne Solis-Ramos
Date 12/15/21 12/15/21

SRF
Date 12/15/21

PM AM
Date 12/15/21

Andy Mai

From: Andy Mai
Sent: Wednesday, December 15, 2021 10:47 AM
To: 'Madsen, Laura'
Cc: Cecilia Chavez; Raman Singh; Tyler Kosaka
Subject: RE: FedEx Shipment 775491613801: Some of your packages are scheduled for delivery tomorrow

Hi Laura,

The bottles received are unpreserved. We will run the samples for Nitrate by 300.

Thanks,
New Address Below

Andy Mai, PMP
EMAX Laboratories, Inc.
3051 Fujita St
Torrance, CA 90505
Tel: 310-618-8889 ext. 117
AMai@emaxlabs.com

EMAX is interested in your feedback; please provide your comments to: customerservice@emaxlabs.com

Note:
EMAX will be closed for the following holidays. Please contact me in advance if you will have short hold samples including BOD.

Christmas:
12/23 to 12/27

New Year:
12/31 to 01/02

From: Madsen, Laura [mailto:Laura.Madsen@arcadis.com]
Sent: Wednesday, December 15, 2021 7:24 AM
To: Andy Mai
Cc: Cecilia Chavez; Raman Singh; Tyler Kosaka
Subject: RE: FedEx Shipment 775491613801: Some of your packages are scheduled for delivery tomorrow

What bottles did they send you? We have some other wells onsite that require nitrate/nitrite. Nitrate by 300 is preferred. Do you have unpreserved sampled to report nitrate by 300?

From: Andy Mai <AMai@emaxlabs.com>
Sent: Tuesday, December 14, 2021 7:21 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: Cecilia Chavez <CChavez@emaxlabs.com>; Raman Singh <RSingh@emaxlabs.com>; Tyler Kosaka <TKosaka@emaxlabs.com>
Subject: RE: FedEx Shipment 775491613801: Some of your packages are scheduled for delivery tomorrow

Hi Laura,

Can you please confirm if Nitrate/Nitrite is needed? I don't recall providing H2SO4 bottles for the analysis.

	x	x	x	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4	125 mL poly

Also, do you know if any Nitrate samples by 300 are expected?

Thanks,
New Address Below

Andy Mai, PMP
EMAX Laboratories, Inc.
3051 Fujita St
Torrance, CA 90505
Tel: 310-618-8889 ext. 117
AMai@emaxlabs.com

EMAX is interested in your feedback; please provide your comments to: customerservice@emaxlabs.com

Note:
EMAX will be closed for the following holidays. Please contact me in advance if you will have short hold samples including BOD.

Christmas:
12/23 to 12/27

New Year:
12/31 to 01/02

From: Madsen, Laura [mailto:Laura.Madsen@arcadis.com]
Sent: Tuesday, December 14, 2021 3:53 PM
To: Andy Mai
Cc: Cecilia Chavez; Raman Singh; Tyler Kosaka
Subject: RE: FedEx Shipment 775491613801: Some of your packages are scheduled for delivery tomorrow

I don't have signed copies yet, but here are the templates. Samples for wells MW-55 and MW-56 need to be logged in as separate SDGs so we don't have to split up reports later for reporting to the private owners.

Thanks!

From: Andy Mai <AMai@emaxlabs.com>
Sent: Tuesday, December 14, 2021 5:22 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: Cecilia Chavez <CChavez@emaxlabs.com>; Raman Singh <RSingh@emaxlabs.com>; Tyler Kosaka <TKosaka@emaxlabs.com>
Subject: RE: FedEx Shipment 775491613801: Some of your packages are scheduled for delivery tomorrow

Thanks Laura! Do you have a copy of the COCs by any chance?

New Address Below

Andy Mai, PMP
EMAX Laboratories, Inc.
3051 Fujita St
Torrance, CA 90505
Tel: 310-618-8889 ext. 117

AMai@emaxlabs.com

EMAX is interested in your feedback; please provide your comments to: customerservice@emaxlabs.com

Note:
EMAX will be closed for the following holidays. Please contact me in advance if you will have short hold samples including BOD.

Christmas:
12/23 to 12/27

New Year:
12/31 to 01/02

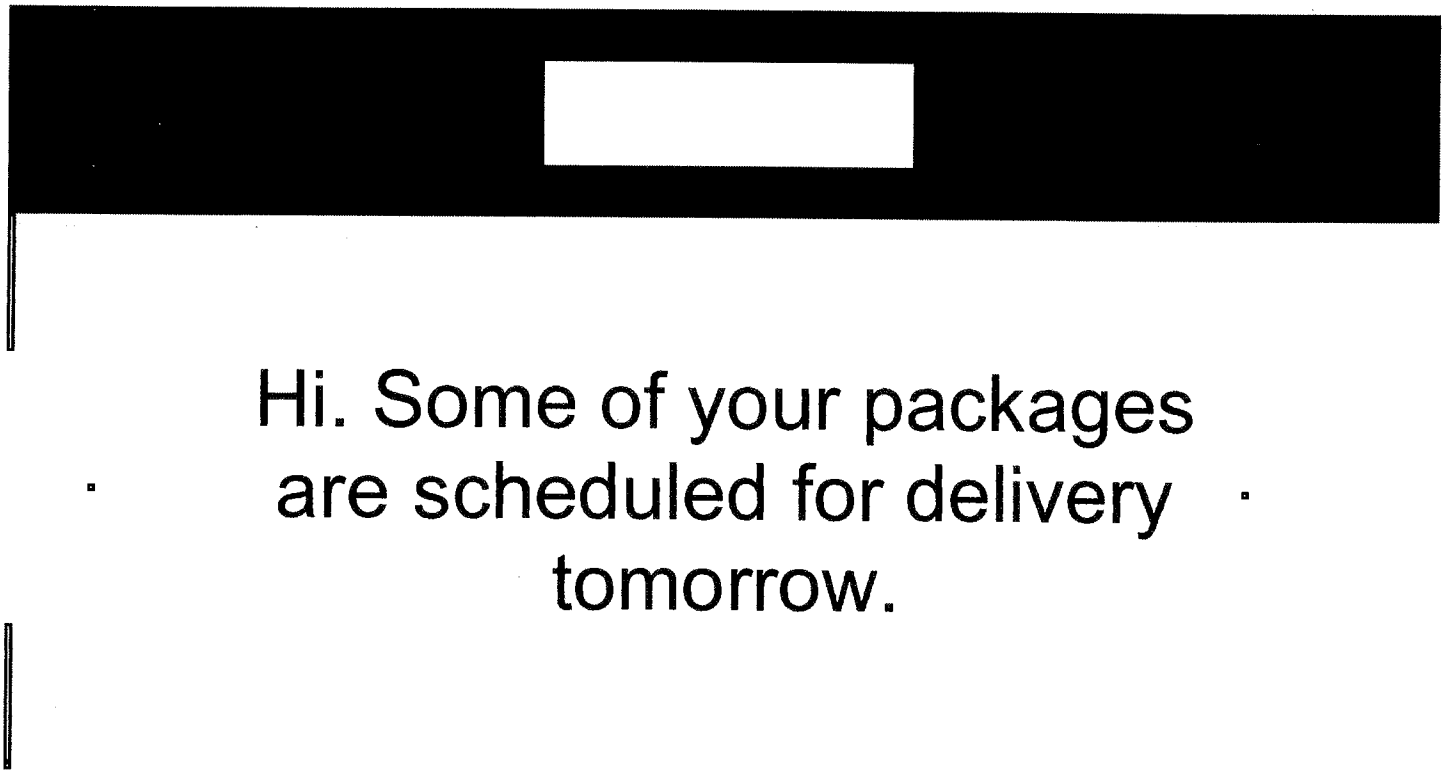
From: Madsen, Laura [mailto:Laura.Madsen@arcadis.com]
Sent: Tuesday, December 14, 2021 3:21 PM
To: Andy Mai
Subject: Fwd: FedEx Shipment 775491613801: Some of your packages are scheduled for delivery tomorrow

Hi Andy
Here is the tracking for the sample tomorrow.

Thanks
Laura

Get Outlook for iOS

From: TrackingUpdates@fedex.com <TrackingUpdates@fedex.com>
Sent: Tuesday, December 14, 2021 4:34:13 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Subject: FedEx Shipment 775491613801: Some of your packages are scheduled for delivery tomorrow



SCHEDULED DELIVERY

Wed, 12/15/2021
before 11:30am

Associated Shipments

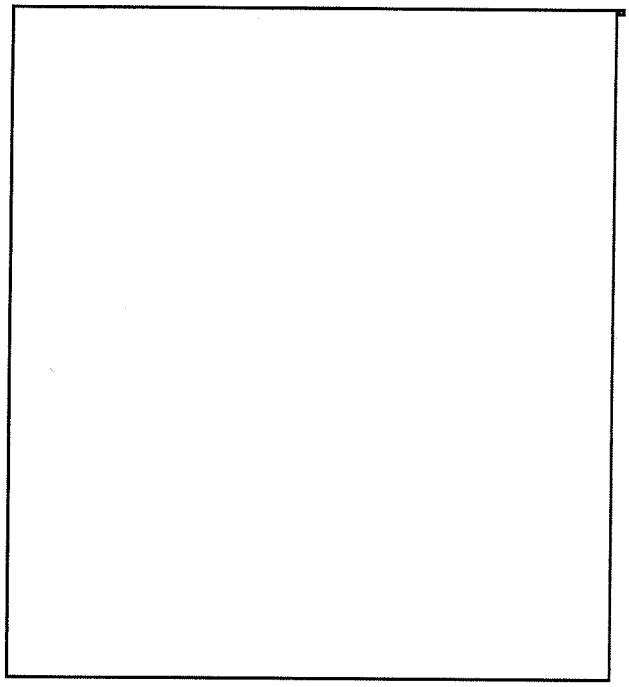
SCHEDULED DELIVERY

Wed, 12/15/2021
before 11:30am

TRACKING ID	STATUS
775491614110	☐ Picked up LAKE HAVASU CITY, AZ
775491613801	☐ Picked up LAKE HAVASU CITY, AZ

MASTER TRACKING NUMBER	775491613801
FROM	ARCADIS U.S., Inc. 8725 Rosehill Road Suite 350 Lenexa, KS, US, 66215
TO	EMAX Labs Receiving 3051 Fujita St TORRANCE, CA, US, 90505
REFERENCE	30110373.4Q21GW
SHIPPER REFERENCE	30110373.4Q21GW
SHIP DATE	Tue 12/14/2021 02:29 PM
PACKAGING TYPE	Your Packaging
ORIGIN	Lenexa, KS, US, 66215

DESTINATION	TORRANCE, CA, US, 90505
STANDARD TRANSIT	Wed, 12/15/2021 by 11:30am
NUMBER OF PIECES	2
TOTAL SHIPMENT WEIGHT	90.00 LB
SERVICE TYPE	FedEx Priority Overnight



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selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

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REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

ARCADIS

PG&E TOPOCK-GMP

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

SDG#: 21L159A

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21L159A

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

A total of four(4) water samples were received on 12/15/21 to be analyzed for Dissolved Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were satisfied.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. IML016WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. IML016WL/IML016WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

L159-08 was reported from dilution due to suspected matrix exhibited by high Sodium concentration.

LAB CHRONICLE
DISSOLVED METALS BY ICP-MS

Client : ARCADIS
Project : PG&E TOPOCK-GMP

SDG NO. : 21L159A
Instrument ID : H6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IML016WB	1	NA	12/20/2112:06	12/15/2114:33	H6L18058	H6L18056	IML016W	Method Blank
LCS1W	IML016WL	1	NA	12/20/2112:08	12/15/2114:33	H6L18059	H6L18056	IML016W	Lab Control Sample (LCS)
LCD1W	IML016WC	1	NA	12/20/2112:11	12/15/2114:33	H6L18060	H6L18056	IML016W	LCS Duplicate
MW-92-122-Q421	L159-08I	10	NA	12/20/2112:29	12/15/2114:33	H6L18067	H6L18056	IML016W	Diluted Sample
MW-92-037-Q421	L159-05	1	NA	12/20/2113:26	12/15/2114:33	H6L18089	H6L18086	IML016W	Field Sample
MW-92-072-Q421	L159-06	1	NA	12/20/2113:29	12/15/2114:33	H6L18090	H6L18086	IML016W	Field Sample
MW-92-102-Q421	L159-07	1	NA	12/20/2113:31	12/15/2114:33	H6L18091	H6L18086	IML016W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS	Date Collected: 12/14/21 09:04
Project : PG&E TOPOCK-GMP	Date Received: 12/15/21
SDG NO. : 21L159A	Date Extracted: 12/15/21 14:33
Sample ID: MW-92-037-Q421	Date Analyzed: 12/20/21 13:26
Lab Samp ID: L159-05	Dilution Factor: 1
Lab File ID: H6L18089	Matrix: WATER
Ext Btch ID: IML016W	% Moisture: NA
Calib. Ref.: H6L18086	Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	22.2	1.00	0.250
Chromium	ND	1.00	0.250
Manganese	32.7	10.0	0.500
Molybdenum	12.9	10.0	0.500
Selenium	ND	10.0	0.300

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 50ml	Final Volume:50ml
Prepared by : CKaing	Analyzed by:LYaman

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS	Date Collcctcd: 12/14/21 08:36
Project : PG&E TOPOCK-GMP	Date Received: 12/15/21
SDG NO. : 21L159A	Date Extracted: 12/15/21 14:33
Sample ID: MW-92-072-Q421	Date Analyzed: 12/20/21 13:29
Lab Samp ID: L159-06	Dilution Factor: 1
Lab File ID: H6L18090	Matrix: WATER
Ext Btch ID: IML016W	% Moisture: NA
Calib. Ref.: H6L18086	Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	17.1	1.00	0.250
Chromium	ND	1.00	0.250
Manganese	19.4	10.0	0.500
Molybdenum	19.0	10.0	0.500
Selenium	ND	10.0	0.300

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 50ml	Final Volume:50ml
Prepared by : CKaing	Analyzed by:LYaman

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	12/14/21 08:08
Project	: PG&E TOPOCK-GMP	Date Received:	12/15/21
SDG NO.	: 21L159A	Date Extracted:	12/15/21 14:33
Sample ID:	MW-92-102-Q421	Date Analyzed:	12/20/21 13:31
Lab Samp ID:	L159-07	Dilution Factor:	1
Lab File ID:	H6L18091	Matrix:	WATER
Ext Btch ID:	IML016W	% Moisture:	NA
Calib. Ref.:	H6L18086	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	18.7	1.00	0.250
Chromium	5.18	1.00	0.250
Manganese	ND	10.0	0.500
Molybdenum	33.3	10.0	0.500
Selenium	ND	10.0	0.300

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	12/14/21 07:38
Project	: PG&E TOPOCK-GMP	Date Received:	12/15/21
SDG NO.	: 21L159A	Date Extracted:	12/15/21 14:33
Sample ID:	MW-92-122-Q421	Date Analyzed:	12/20/21 12:29
Lab Samp ID:	L159-08I	Dilution Factor:	10
Lab File ID:	H6L18067	Matrix:	WATER
Ext Btch ID:	IML016W	% Moisture:	NA
Calib. Ref.:	H6L18056	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	10.4	10.0	2.50
Chromium	ND	10.0	2.50
Manganese	188	100	5.00
Molybdenum	180	100	5.00
Selenium	ND	100	3.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	NA
Project	: PG&E TOPOCK-GMP	Date Received:	NA
SDG NO.	: 21L159A	Date Extracted:	12/15/21 14:33
Sample ID:	MBLK1W	Date Analyzed:	12/20/21 12:06
Lab Samp ID:	IML016WB	Dilution Factor:	1
Lab File ID:	H6L18058	Matrix:	WATER
Ext Btch ID:	IML016W	% Moisture:	NA
Calib. Ref.:	H6L18056	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	1.00	0.250
Chromium	ND	1.00	0.250
Manganese	ND	10.0	0.500
Molybdenum	ND	10.0	0.500
Selenium	ND	10.0	0.300

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TODOCK GMP
BATCH NO. : 21L159A
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IML016WB	IML016WL	IML016WC
LAB FILE ID	: H6L18058	H6L18059	H6L18060
DATE PREPARED	: 12/15/21 14:33	12/15/21 14:33	12/15/21 14:33
DATE ANALYZED	: 12/20/21 12:06	12/20/21 12:08	12/20/21 12:11
PREP BATCH	: IML016W	IML016W	IML016W
CALIBRATION REF	: H6L18056	H6L18056	H6L18056

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Arsenic	ND	30	30.2	101	30	29.9	100	1	85-115	20
Chromium	ND	30	31.3	104	30	31.3	104	0	85-115	20
Manganese	ND	30	29.5	98	30	30.4	101	3	85-115	20
Molybdenum	ND	30	28.1	94	30	27.9	93	1	85-115	20
Selenium	ND	30	30.0	100	30	30.7	102	2	85-115	20

ICP-MS QC CHECK TABLE

QC	HIGH STD	ICV	CCV	ICSAB	ICSA
Limit%		90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	3000	25000	100000	100000
Sb	100	60	50	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	300	25	20	0
B	100	300	50	20	0
Cd	500	300	250	20	0
Ca	50000	3000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	300	25000	100000	100000
Pb	500	300	250	20	0
Mg	50000	3000	25000	100000	100000
Mn	3000	300	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
K	50000	3000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	2000	0
Ag	50	30	25	20	0
Na	50000	3000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0
Li	50	30	25	20	0

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 12|20|21 09:31

End Date: 12|20|21 13:55

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

L174
10X: 0.5mL → 5mL

L179
10X: 0.5mL → 5mL
50X: 0.1mL → 5mL

L159
10X: 0.5mL → 5mL

Book #:	AH6-010
Instrument No.:	H6
Analytical Batch:	IH6L18
Analytical Sequence:	H6L18
Method File:	EM6020
Micropipette ID:	☐ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☑ GFAA-07
Micropipette ID:	☐ 339342032
Micropipette ID:	☑ A42780077
Micropipette ID:	☐ 542761827
Micropipette ID:	☐

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B-24-13-02	MRL1 (1)	SM6B-24-10-01
S1	14-01	MRL2(0.4)	12-02
S2	14-02	MRL3(LAT)	13-01
S3	15-01	MRL4	NA
S4	15-02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SM6B-24-16-02
S7	↓	Post-Spike 1	SM6A-007-07-22
ICV	SM6B-24-01-01	Post-Spike 2	↓ 07-23
CCV	16-01	Post-Spike 3	NA
ICSA	11-02	Post-Spike 4	↓
ICSAB	12-01		
6020 TUNE SOLN.	SM6B-22-66-02		
200.8 TUNE SOLN.	66-02		

Analyzed By: LY

Date: 12|20|21

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 21L159A
Method : METHOD SW6020A
Sequence : IH6L18
InstrumentID: H6

Lab Samp ID :		ICV				ICSA			ICSAB		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		H6L18008				H6L18012			H6L18013		
DateAnalyed :		12/20/2109:45				12/20/2109:58			12/20/2110:01		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		30.60	30	1.4	102	0.33456	0	>0	20.604	20	103
Beryllium		30.72	30	2.5	102	0.0050442	0	<0.1	20.971	20	105
Boron		30.12	30	2.5	100	0.69408	0	<5.0	19.638	20	98
Sodium		32420	30000	1.2	108	107280	100000	107	107540	100000	108
Magnesium		31870	30000	1.6	106	102140	100000	102	102850	100000	103
Aluminum		31690	30000	1.0	106	102120	100000	102	103280	100000	103
Silicon		3351	3000	1.3	112*	2.9928	0	<20	218.40	200	109
Phosphorus		302.0	300	1.9	101	100450	100000	100	101980	100000	102
Potassium		32740	30000	0.6	109	106720	100000	107	109060	100000	109
Calcium		32230	30000	2.2	107	106320	100000	106	106450	100000	106
Titanium		297.0	300	0.8	99	2096.8	2000	105	2132.4	2000	107
Vanadium		309.1	300	0.3	103	0.17099	0	<0.5	20.697	20	103
Chromium	T	315.6	300	0.3	105	2.1560	0	>0.25	23.247	20	116
Manganese	T	2043	2000	2.6	102	0.28328	0	<0.5	20.432	20	102
Iron		32370	30000	0.4	108	106470	100000	106	107540	100000	108
Cobalt		309.0	300	2.1	103	0.15085	0	<0.2	20.597	20	103
Nickel		313.4	300	0.9	104	0.11989	0	<0.2	20.991	20	105
Copper		318.3	300	0.6	106	0.17108	0	<0.5	21.301	20	107
Zinc		326.3	300	2.5	109	1.8382	0	<10	22.385	20	112
Arsenic	T	305.8	300	1.1	102	0.0062643	0	<0.25	20.857	20	104
Selenium	T	313.1	300	0.4	104	0.28117	0	<0.3	21.634	20	108
Strontium		309.2	300	2.0	103	1.1272	0	>1.0	21.593	20	108
Zirconium		32.77	30	2.2	109	0.23691	0	<2.0	11.193	20	56*
Molybdenum	T	303.8	300	0.6	101	2128.6	2000	106	2152.8	2000	108
Silver		31.01	30	1.4	103	0.29977	0	>0.2	20.157	20	101
Cadmium		326.7	300	1.4	109	0.092196	0	<0.2	20.029	20	100
Tin		307.6	300	0.9	103	0.052752	0	<0.2	20.279	20	101
Antimony		59.86	60	1.0	100	0.055374	0	<0.5	20.002	20	100
Barium		308.5	300	0.9	103	0.34083	0	<0.5	20.949	20	105
Tungsten		31.99	30	1.8	107	0.18315	0	<1.0	20.439	20	102
Mercury		2.805	3	2.1	93	0.0033905	0	<0.1	2.1151	2	106
Thallium		307.3	300	3.4	102	0.035500	0	<0.2	19.855	20	99
Lead		310.4	300	1.7	103	0.071796	0	<0.1	20.247	20	101
Uranium		302.9	300	3.2	101	0.018744	0	<0.1	20.115	20	101

| Unit: ug/L
| T: Target analyte
| EV: Expected Value
| Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 21L159A
Method : METHOD SW6020A
Sequence : IH6L18
Instrument ID: H6

CCV SampleID			CCV5			CCV6			CCV8			CCV9		
CCV DataFileID			H6L18056			H6L18068			H6L18086			H6L18095		
CCV DateTime			12/20/21 12:01			12/20/21 12:32			12/20/21 13:18			12/20/21 13:42		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	23.8	95	3.3	23.2	93	1.8	23.0	92	2.4	23.6	94	1.7
Beryllium		25	25.0	100	2.3	24.1	96	0.5	22.9	92	1.8	23.4	94	2.7
Boron		50	47.3	95	3.7	50.4	101	1.4	49.2	98	2.0	50.7	101	2.0
Sodium		25000	24600	98	0.8	25000	100	0.3	25600	102	1.2	25500	102	1.2
Magnesium		25000	23900	95	2.0	25100	100	0.5	25800	103	1.2	25300	101	1.0
Aluminum		25000	23500	94	2.2	24700	99	1.3	24900	100	2.5	24700	99	2.9
Silicon		2500	2380	95	1.1	2450	98	0.6	2530	101	0.5	2470	99	2.5
Phosphorus		250	237	95	1.5	249	100	0.3	252	101	1.3	251	100	1.0
Potassium		25000	24900	99	2.6	25100	100	0.8	25200	101	1.4	25200	101	0.7
Calcium		25000	23900	96	0.8	24400	97	0.5	24800	99	0.6	24500	98	0.9
Titanium		250	235	94	1.2	239	96	1.1	238	95	2.0	236	94	1.0
Vanadium		250	251	101	2.7	251	100	0.9	252	101	1.2	249	100	0.8
Chromium	T	250	254	102	3.7	252	101	0.2	255	102	2.0	250	100	1.3
Manganese	T	1500	1450	97	1.4	1490	99	1.4	1460	97	2.3	1460	97	2.1
Iron		25000	24400	98	1.0	24600	98	0.8	25100	100	0.9	24800	99	1.9
Cobalt		250	243	97	1.3	247	99	1.3	244	98	1.4	243	97	2.1
Nickel		250	254	102	3.8	250	100	1.0	252	101	2.1	249	100	1.2
Copper		250	259	104	3.1	254	102	0.5	257	103	1.8	253	101	0.8
Zinc		250	236	95	2.0	242	97	0.8	239	96	2.0	238	95	0.9
Arsenic	T	250	247	99	1.4	246	98	0.7	247	99	0.5	245	98	0.2
Selenium	T	250	249	100	1.3	247	99	1.0	250	100	0.7	250	100	0.3
Strontium		250	242	97	2.0	246	98	0.6	244	98	2.6	243	97	2.0
Zirconium		25	23.6	95	1.2	23.8	95	1.5	23.8	95	2.9	23.4	94	2.8
Molybdenum	T	250	239	95	1.9	241	96	0.3	242	97	1.6	239	96	1.1
Silver		25	23.8	95	0.9	24.1	96	0.8	23.9	96	0.5	23.8	95	1.0
Cadmium		250	237	95	0.7	239	95	0.2	237	95	0.7	237	95	0.6
Tin		250	239	96	0.4	244	98	0.7	244	97	1.2	244	98	0.2
Antimony		50	46.7	93	2.4	47.5	95	0.7	47.0	94	0.9	47.6	95	1.0
Barium		500	480	96	1.7	484	97	0.7	491	98	0.8	489	98	1.6
Tungsten		25	23.1	92	0.7	23.6	95	0.8	23.2	93	0.4	24.3	97	1.1
Mercury		2.5	2.28	91	0.2	2.36	94	2.4	2.32	93	0.9	2.34	94	1.9
Thallium		250	240	96	1.6	247	99	1.2	244	98	1.0	245	98	0.8
Lead		250	241	96	1.7	249	99	1.9	244	98	0.6	247	99	1.4
Uranium		250	235	94	0.7	241	97	2.3	237	95	0.8	242	97	0.4

Unit: ug/L
T: Target analyte
%Rec QC Limit: 90-110
RSD QC Limit: <5
CCV EV: CCV Expected Value ug/L
Comment:

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 21L159A
Method : SW6020A
Sequence : IH6L18
Instrument ID: H6

CB SampleID	: ICB	CCB5	CCB6	CCB8	CCB9
CB DataFileID	: H6L18009	H6L18057	H6L18069	H6L18087	H6L18096
CB DateTime	: 12/20/2109:48	12/20/2112:03	12/20/2112:34	12/20/2113:21	12/20/2113:44

PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.1	>0	0.1	>0	0.3	>0	0.08	>0	0.2	>0
Beryllium		0.1	0.010	<0.1	0.006	<0.1	0.02	<0.1	0.02	<0.1	0.02	<0.1
Boron		5.0	0.4	<5.0	0.2	<5.0	2	<5.0	3	<5.0	4	<5.0
Sodium		50	1	<50	5	<50	20	<50	200	>50	200	>50
Magnesium		10	5	<10	1	<10	1	<10	3	<10	2	<10
Aluminum		20	5	<20	2	<20	1	<20	3	<20	3	<20
Silicon		20	2	<20	0.2	<20	0.2	<20	0.4	<20	2	<20
Phosphorus		25	1	<25	3	<25	5	<25	6	<25	6	<25
Potassium		20	6	<20	3	<20	6	<20	10	<20	10	<20
Calcium		25	1	<25	4	<25	4	<25	2	<25	1	<25
Titanium		0.5	0.06	<0.5	0.03	<0.5	0.006	<0.5	0.04	<0.5	0.03	<0.5
Vanadium		0.5	0.06	<0.5	0.03	<0.5	0.05	<0.5	0.1	<0.5	0.04	<0.5
Chromium	T	0.25	0.01	<0.25	0.06	<0.25	0.06	<0.25	0.05	<0.25	0.04	<0.25
Manganese	T	0.5	0.3	<0.5	0.1	<0.5	0.04	<0.5	0.2	<0.5	0.2	<0.5
Iron		10	2	<10	1.0	<10	1	<10	0.6	<10	1	<10
Cobalt		0.2	0.05	<0.2	0.02	<0.2	0.009	<0.2	0.03	<0.2	0.03	<0.2
Nickel		0.2	0.005	<0.2	0.03	<0.2	0.05	<0.2	0.03	<0.2	0.03	<0.2
Copper		0.5	0.06	<0.5	0.1	<0.5	0.1	<0.5	0.06	<0.5	0.07	<0.5
Zinc		10	0.08	<10	0.05	<10	0.006	<10	0.04	<10	0.03	<10
Arsenic	T	0.25	0.03	<0.25	0.02	<0.25	0.01	<0.25	0.02	<0.25	0.02	<0.25
Selenium	T	0.3	0.07	<0.3	0.02	<0.3	0.02	<0.3	0.02	<0.3	0.03	<0.3
Strontium		1.0	0.04	<1.0	0.008	<1.0	0.04	<1.0	0.006	<1.0	0.003	<1.0
Zirconium		2.0	0.002	<2.0	0.0001	<2.0	0.005	<2.0	0.001	<2.0	0.001	<2.0
Molybdenum	T	0.5	0.06	<0.5	0.03	<0.5	0.00007	<0.5	0.04	<0.5	0.03	<0.5
Silver		0.2	0.004	<0.2	0.003	<0.2	0.002	<0.2	0.008	<0.2	0.007	<0.2
Cadmium		0.2	0.1	<0.2	0.06	<0.2	0.03	<0.2	0.04	<0.2	0.03	<0.2
Tin		0.2	0.1	<0.2	0.02	<0.2	0.004	<0.2	0.04	<0.2	0.02	<0.2
Antimony		0.5	0.01	<0.5	0.008	<0.5	0.0009	<0.5	0.009	<0.5	0.006	<0.5
Barium		0.5	0.03	<0.5	0.02	<0.5	0.04	<0.5	0.04	<0.5	0.04	<0.5
Tungsten		1.0	0.03	<1.0	0.02	<1.0	0.008	<1.0	0.01	<1.0	0.09	<1.0
Mercury		0.1	0.02	<0.1	0.01	<0.1	0.007	<0.1	0.01	<0.1	0.01	<0.1
Thallium		0.2	0.2	<0.2	0.04	<0.2	0.00001	<0.2	0.03	<0.2	0.02	<0.2
Lead		0.1	0.08	<0.1	0.01	<0.1	0.03	<0.1	0.05	<0.1	0.04	<0.1
Uranium		0.1	0.05	<0.1	0.02	<0.1	0.004	<0.1	0.03	<0.1	0.03	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	NA
Project	: PG&E TOPOCK-GMP	Date Received:	NA
SDG NO.	: 21L159A	Date Extracted:	12/15/21 14:33
Sample ID:	LCD1W	Date Analyzed:	12/20/21 12:11
Lab Samp ID:	IML016WC	Dilution Factor:	1
Lab File ID:	H6L18060	Matrix:	WATER
Ext Btch ID:	IML016W	% Moisture:	NA
Calib. Ref.:	H6L18056	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	29.9	1.00	0.250
Chromium	31.3	1.00	0.250
Manganese	30.4	10.0	0.500
Molybdenum	27.9	10.0	0.500
Selenium	30.7	10.0	0.300

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	NA
Project	: PG&E TOPOCK-GMP	Date Received:	NA
SDG NO.	: 21L159A	Date Extracted:	12/15/21 14:33
Sample ID:	LCS1W	Date Analyzed:	12/20/21 12:08
Lab Samp ID:	IML016WL	Dilution Factor:	1
Lab File ID:	H6L18059	Matrix:	WATER
Ext Btch ID:	IML016W	% Moisture:	NA
Calib. Ref.:	H6L18056	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	30.2	1.00	0.250
Chromium	31.3	1.00	0.250
Manganese	29.5	10.0	0.500
Molybdenum	28.1	10.0	0.500
Selenium	30.0	10.0	0.300

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing	Analyzed by:	LYaman

Sample List

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b

Block List

Acquisition Order

Sequence Order	Block Name
1	Calibration Standards
2	Unknown Samples

Blocks

Calibration Standards

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		CalBlk	BLANK		1101	H6L18001.d		1	
2		CalBlk	BLANK		1101	H6L18002.d		1	
3		CalBlk	S0		1102	H6L18003.d		1	
4		CalStd	S1		1104	H6L18004.d		2	
5		CalStd	S2		1105	H6L18005.d		3	
6		CalStd	S3		1106	H6L18006.d		4	
7		CalStd	S4		1107	H6L18007.d		5	
8		ICV	ICV		1204	H6L18008.d			1
9		ICB	ICB		1102	H6L18009.d			1
10		LLCCV	MRLL2001 ✓	1/100/10 ppb	1306	H6L18010.d			1
11		LLCCV2	MRLL2002	0.4/40/4 ppb	1307	H6L18011.d			1
12		ICS-A	ICSA		1304	H6L18012.d			1
13		ICSB	ICSAB		1305	H6L18013.d			1
14		Sample	MRLL2003	500 ppb CAT	1207	H6L18014.d			1
15		CCV	CCV1		1206	H6L18015.d			1
16		CCB	CCB1		1102	H6L18016.d			1

Unknown Samples

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		Blank	L216-01		2101	H6L18017.d			1
2		Blank	IML022WB		2102	H6L18018.d			1
3		LCSW	IML022WL		2103	H6L18019.d			1
4		LCSW	IML022WC		2104	H6L18020.d			1
5		Sample	L174-05		2105	H6L18021.d			1
6		Sample	L174-15		2106	H6L18022.d			1
7		Sample	L179-10		2107	H6L18023.d			1
8		Blank	HNO3		3101	H6L18024.d			1
9		Blank	HCl		3102	H6L18025.d			1
10		CCV	CCV2		1206	H6L18026.d			1
11		CCB	CCB2		1102	H6L18027.d			1
12		Sample	L174-02 NaOH		2108	H6L18028.d			1
13		Sample	L174-03		2109	H6L18029.d			1
14		Sample	L174-11		2110	H6L18030.d			1
15		Sample	L174-02I		2111	H6L18031.d			10
16		Sample	L174-03I		2112	H6L18032.d			10
17		Sample	L174-11I		2201	H6L18033.d			10
18		CCV	CCV3		1206	H6L18034.d			1
19		CCB	CCB3		1102	H6L18035.d			1
20		Sample	L179-01I		2202	H6L18036.d			10

Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
21		Sample	L179-02I		2203	H6L18037.d			10
22		Sample	L179-03M	mn2nf	2204	H6L18038.d			10
23		Sample	L179-03S		2205	H6L18039.d			10
24		Sample	L179-03A		2206	H6L18040.d			10
25		Sample	L179-03I		2207	H6L18041.d			10
26		Sample	L179-03J		2208	H6L18042.d			50
27		Sample	L179-04I		2209	H6L18043.d			10
28		Sample	L179-05I		2210	H6L18044.d			10
29		Sample	L179-06I		2211	H6L18045.d			10
30		CCV	CCV4		1206	H6L18046.d			1
31		CCB	CCB4		1102	H6L18047.d			1
32		Sample	L179-07I		2212	H6L18048.d			10
33		Sample	L179-08I		2301	H6L18049.d			10
34		Sample	L179-09I		2302	H6L18050.d			10
35		Sample	L179-03M		2303	H6L18051.d			50
36		Sample	L179-03S		2304	H6L18052.d			50
37		Sample	L179-03A		2305	H6L18053.d			50
38		Sample	L179-03K		2306	H6L18054.d			50
39		Sample	L179-03J		2307	H6L18055.d			250
40		CCV	CCV5		1206	H6L18056.d			1
41		CCB	CCB5		1102	H6L18057.d			1
42		Blank	IML016WB		2308	H6L18058.d			1
43		LCSW	IML016WL		2309	H6L18059.d			1
44		LCSW	IML016WC		2310	H6L18060.d			1
45		Sample	L159-01I	ok@1x	2311	H6L18061.d			10
46		Sample	L159-03I		2312	H6L18062.d			10
47		Sample	L159-04I		2401	H6L18063.d			10
48		Sample	L159-05I	ok@1x	2402	H6L18064.d			10
49		Sample	L159-06I		2403	H6L18065.d			10
50		Sample	L159-07I		2404	H6L18066.d			10
51		Sample	L159-08I		2405	H6L18067.d			10
52		CCV	CCV6		1206	H6L18068.d			1
53		CCB	CCB6		1102	H6L18069.d			1
54		Sample	L159-10I		2406	H6L18070.d			10
55		Sample	L159-11I		2407	H6L18071.d			10
56		Sample	L159-12I		2408	H6L18072.d			10
57		Sample	L159-14I		2409	H6L18073.d			10
58		Sample	L159-16I		2410	H6L18074.d			10
59		Sample	L159-18I		2411	H6L18075.d			10
60		Sample	L159-20I	ok@1x	2412	H6L18076.d			10
61		Sample	L159-21I		2501	H6L18077.d			10
62		Sample	L159-22I		2502	H6L18078.d			10
63		CCV	CCV7		1206	H6L18079.d			1
64		CCB	CCB7		1102	H6L18080.d			1
65		Sample	L159-23M		2503	H6L18081.d			10
66		Sample	L159-23S		2504	H6L18082.d			10
67		Sample	L159-23A		2505	H6L18083.d			10
68		Sample	L159-23I		2506	H6L18084.d			10
69		Sample	L159-23J		2507	H6L18085.d			50
70		CCV	CCV8		1206	H6L18086.d			1
71		CCB	CCB8		1102	H6L18087.d			1
72		Sample	L159-01		2508	H6L18088.d			1

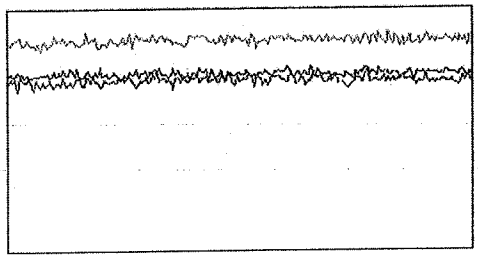
Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
73		Sample	L159-05		2509	H6L18089.d			1
74		Sample	L159-06		2510	H6L18090.d			1
75		Sample	L159-07		2511	H6L18091.d			1
76		Sample	L159-20		2512	H6L18092.d			1
77		Sample	L174-05	UNDIG	3101	H6L18093.d			1
78		Sample	L174-15	UNDIG	3102	H6L18094.d			1
79		CCV	CCV9		1206	H6L18095.d			1
80		CCB	CCB9		1102	H6L18096.d			1
81		LLCCV	MRLL2004 ✓	1/100/10 ppb	1306	H6L18097.d			1
82		LLCCV2	MRLL2005	0.4/40/4 ppb	1307	H6L18098.d			1
83		ICS-A	ICSA2		1304	H6L18099.d			1
84		ICSB	ICSAB2		1305	H6L18100.d			1

Performance Report

Operator Name	LYaman
Acq. Date-Time	2021-12-20 08:47:57
Instrument Name	G8421A SG19253823
Sample Introduction	ISIS
Nebulizer Type	MicroMist
Ion Lens Model	x-Lens
Tune Parameters	Standard Tune

Sensitivity



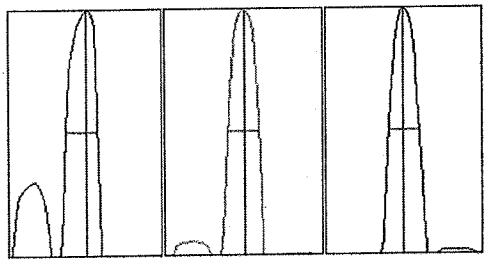
Mass	Range	Count	RSD%	Background
7	5000	3523	2.150	0.150
89	20000	17432	1.642	0.300
205	20000	14647	1.629	1.300

Sampling Period [sec]	0.311
Integration Time [sec]	0.1

Oxide/Doubly Charged Ratio

Oxide	156 / 140 1.131 %
Doubly Charged	70 / 140 1.310 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
7	3496.45	7.05	0.64	0.76
89	17444.73	89.05	0.60	0.74
205	14471.17	205.00	0.60	0.79

Integration Time [sec]	0.1
Acquisition Time [sec]	22.74

Tune Parameters

Plasma Parameters

RF Power	1550 W	Option Gas	---	Makeup Gas	0.00 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Auxiliary Gas	0.90 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C	Plasma Gas	15.0 L/min
Nebulizer Gas	1.07 L/min				

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.0 V	Deflect	12.4 V
Extract 2	-150.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-70 V	Cell Exit	-50 V		

Performance Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

QP Bias	-3.0 V

Hardware Settings

Torch

Torch H	0.5 mm	Torch H (Hot)	---	Torch H (Cool)	---
Torch V	-0.2 mm	Torch V (Hot)	---	Torch V (Cool)	---

Plasma Correction

Nebulizer Gas Offset	0.02 L/min	Makeup Gas (Hot)	---	Makeup Gas (Cool)	---
		Sample Depth (Hot)	---		

Resolution/Axis

Mass Gain	122	Axis Gain	0.9991		
Mass Offset	126	Axis Offset	0.04		

EM

Discriminator	3.6 mV	Analog HV	2119 V	Pulse HV	969 V

Performance Report

Meter

Name	Value	Unit
Nebulizer Gas	1.07	L/min
MU./Dil. Gas	0.00	L/min
Plasma Gas	15.00	L/min
Aux Gas	0.90	L/min
Ar Gas Tank Press	7.46E+2	kPa
+5V (Press Gage)	5.0	V
Ar AMFC Temp	25.0	°C
Nebulizer Gas(DP)	5.93E+0	kPa
MU./Dil. Gas(DP)	-1.54E-1	kPa
Aux Gas(DP)	1.23E+1	kPa
Plasma Gas(DP)	1.10E+1	kPa
Nebulizer Gas(BP)	3.65E+2	kPa
MU./Dil. Gas(BP)	-3.70E+0	kPa
Aux Gas(BP)	5.68E+1	kPa
Plasma Gas(BP)	3.94E+1	kPa
S/C Temp (H)	16.0	°C
S/C Temp (L)	2.0	°C
Peltier Voltage	2.5	V
IF/BK Press	2.39E+2	Pa
Analyzer Press	7.26E-5	Pa
IG HV	178	V
IG Emission	4.96	µA
TMP Revolution	100.0	%
TMP Rev (RAW)	100.0	%
TMP Current	2.55	A
PWR AMP Drain I	0.2	A
PWR AMP Bias	4.18	V
OctP RF (Avg)	204.0	V
OctP RF Set	4.0	V
OctP FET Bias Set	3.97	V
OctP RF(+)	176.2	V
OctP RF(-)	231.1	V
OctP Bias	-8.0	V
Cell Temp.	65.0	°C
Cell Heater Volt.	4.7	V
+U Voltage	174.3	V

Name	Value	Unit
-U Voltage	-180.9	V
V Voltage	766.4	V
QPRF Fader	0.5	V
Pickup Temp	55.0	°C
PWR Amp Temp	0.1	V
+600V	609.9	V
-120V	-132.7	V
-720V	-738.8	V
Prefilter Bias	-5.12	V
Pickup Heater I	0.10	A
QP PS +48V	47.6	V
QP PS +48V I	0.00	A
Analog HV	-2123	V
Pulse HV	978	V
EM Gate	-46.8	V
Pulse Gate	217.0	V
EM Entrance	0.2	V
EM HV Gain	-753.3	V
Inner Pole	-300.3	V
Outer Pole	20.0	V
Analog -5V	-5.1	V
Analog +15V	14.5	V
Analog -15V	-14.4	V
Analog +5V	5.2	V
Shunt C Pos	1.2	V
Drain Volt.(max)	62.8	V
RF PS +48V	47.7	V
Forward Power	1549	W
Reflected Power	6	W
Plasma Freq.	26.64	MHz
Drain I 1	11.22	A
Drain I 2	10.77	A
Drain I 3	10.64	A
Drain I 4	9.99	A
Temp Sensor	2.8	V
Driver I	5.57	A

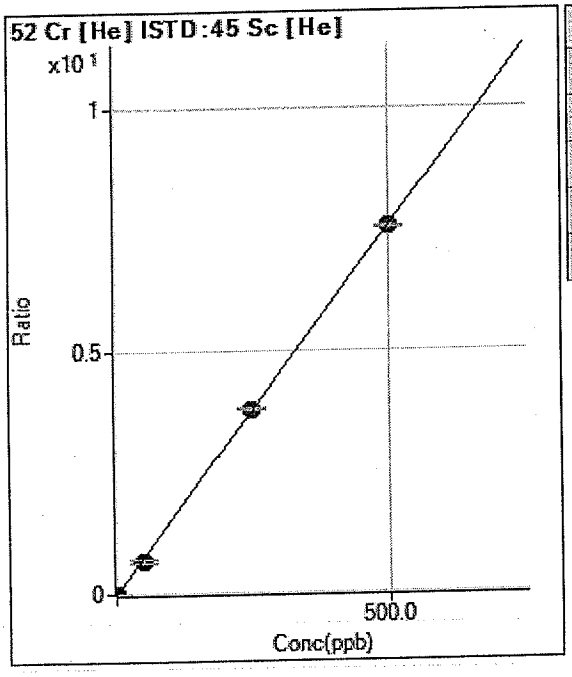
Name	Value	Unit
Igniter	0.0	V
Driver Voltage Set	6.5	V
Unbalance Current	0.43	A
PWM Threshold Set	0.2	V
Driver Voltage	5.1	V
PWM Threshold	0.2	V
Phase Detector	0.0	mV
H2 Gas	0.00	mL/min
He Gas	0.00	mL/min
H2 Gas Press	1.70E+2	kPa
He Gas Press	1.34E+0	kPa
ORS AMFC Temp	25.2	°C
Atmospheric Press	1.02E+2	kPa
Extract 1	-0.1	V
Extract 2	-150.2	V
Omega Bias	-70.1	V
Omega Lens	9.0	V
Cell Entrance	-30.0	V
Cell Exit	-50.2	V
Deflect	12.4	V
Plate Bias	-35.0	V
HV+530V	524	V
HV+240V	237	V
HV-360V	-357	V
Inlet Temp	24.8	°C
Internal Temp	31.0	°C
+24V	23.6	V
Water Temp	17.7	°C
Water RF/WC/IF	1.42	L/min
ISIS 3 Pump Speed	0.0	%
Valve Position		
Tune/ISTD Valve		

Performance Report History

Sensitivity

Batch Folder: D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b\
Analysis File: IH6L18.batch.bin
DA Date-Time: 2021-12-20 09:45:04
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

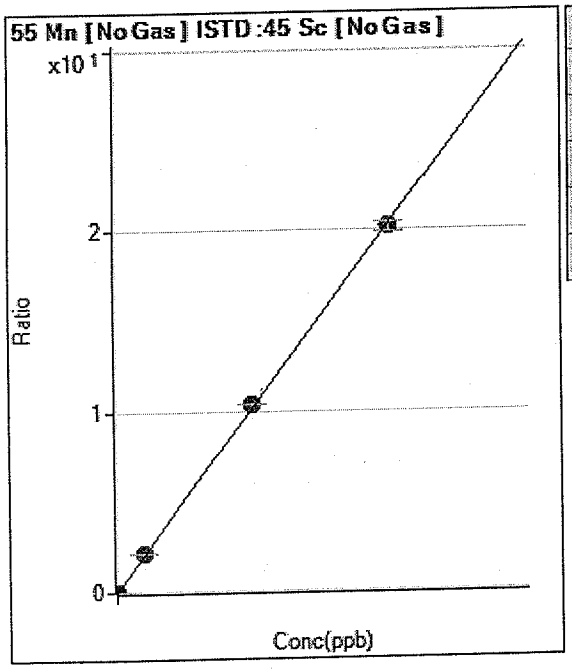
Level	Standard Data File	Sample Name	Acq. Date-Time
1	H6L18003.d	S0	2021-12-20 09:31:27
2	H6L18004.d	S1	2021-12-20 09:34:19
3	H6L18005.d	S2	2021-12-20 09:37:10
4	H6L18006.d	S3	2021-12-20 09:40:22
5	H6L18007.d	S4	2021-12-20 09:43:12



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1998.82	0.0038	P	3.5
2	☐	0.500	0.561	6466.20	0.0123	P	1.8
3	☐	50.000	44.020	349519.73	0.6690	P	10.8
4	☐	250.000	252.524	1945931.13	3.8195	A	0.6
5	☐	500.000	499.336	3815051.00	7.5489	A	0.7

y = 0.0151 * x + 0.0038
R = 0.9999
DL = 0.02674
BEC = 0.2534

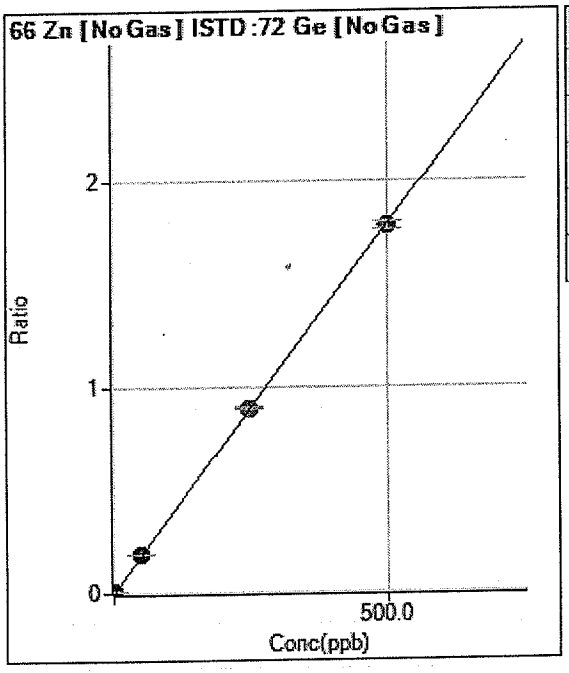
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13642.13	0.0030	P	0.8
2	☐	0.500	0.435	27508.95	0.0059	P	1.1
3	☐	300.000	314.448	9822338.00	2.1349	A	1.5
4	☐	1500.000	1531.868	47122873.33	10.3890	A	0.8
5	☐	3000.000	2982.621	91385648.00	20.2250	A	2.9

y = 0.0068 * x + 0.0030
R = 0.9999
DL = 0.01101
BEC = 0.4358

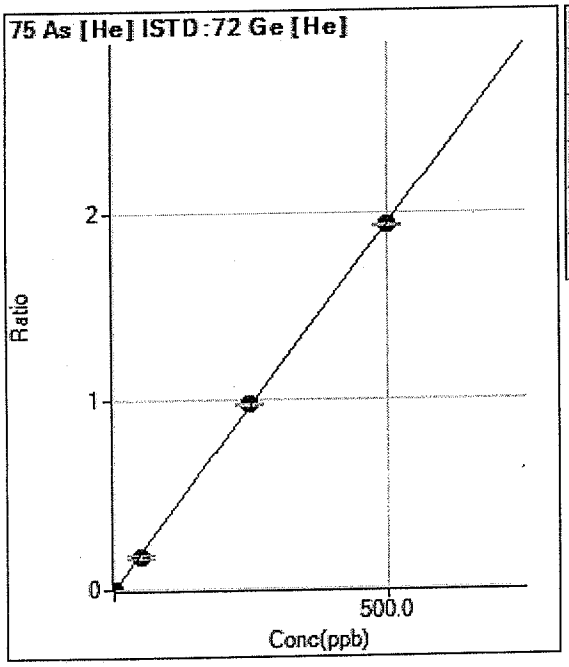
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1404.74	0.0012	P	2.6
2	☐	1.000	1.270	6942.44	0.0057	P	4.2
3	☐	50.000	51.885	225455.75	0.1862	P	1.2
4	☐	250.000	252.063	1064321.54	0.9001	M	1.5
5	☐	500.000	498.779	2079903.21	1.7800	A	2.3

y = 0.0036 * x + 0.0012
R = 1.0000
DL = 0.02597
BEC = 0.3303

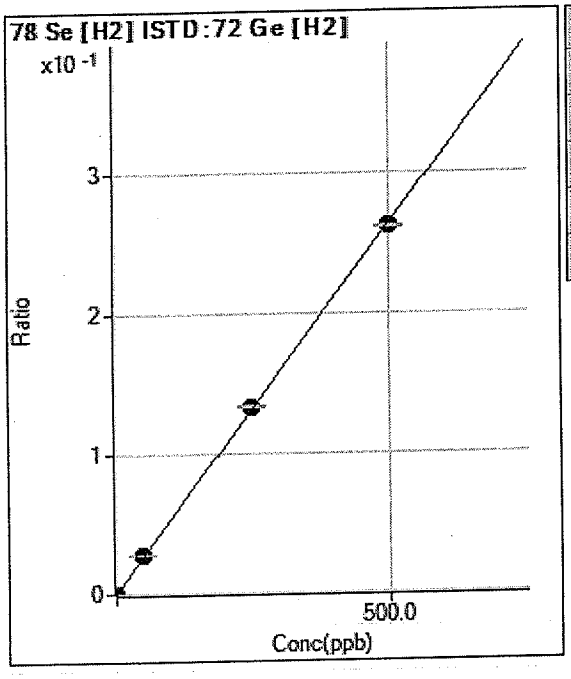
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	325.00	0.0009	P	2.3
2	☐	0.500	0.540	1054.04	0.0030	P	2.9
3	☐	50.000	45.204	60525.31	0.1758	P	9.5
4	☐	250.000	252.777	329262.09	0.9785	P	1.4
5	☐	500.000	499.091	647342.75	1.9311	P	0.7

y = 0.0039 * x + 9.4351E-004
R = 0.9999
DL = 0.01714
BEC = 0.244

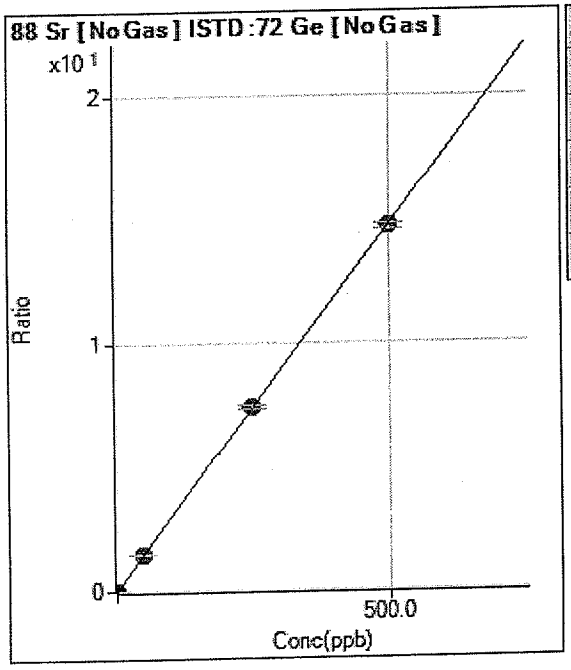
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	45.33	0.0000	P	7.8
2	☐	0.500	0.477	277.33	0.0003	P	3.3
3	☐	50.000	51.559	24859.54	0.0272	P	0.6
4	☐	250.000	254.190	120540.78	0.1338	P	0.3
5	☐	500.000	497.749	232809.80	0.2620	P	0.5

y = 5.2621E-004 * x + 4.9564E-005
R = 0.9999
DL = 0.02212
BEC = 0.09419

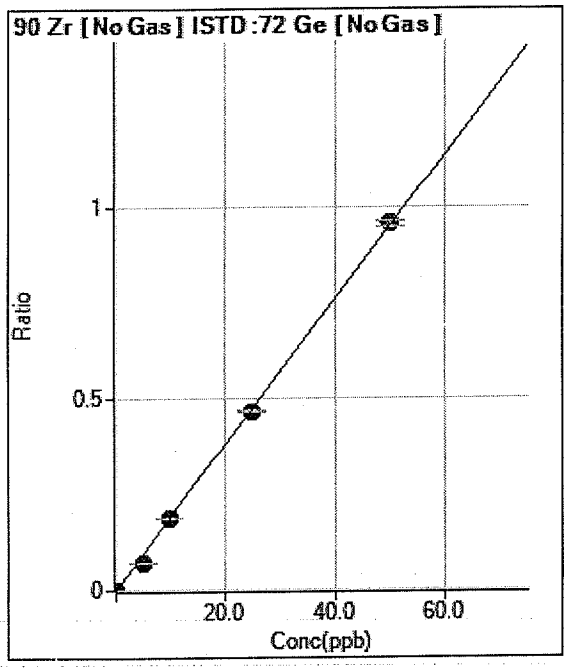
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4404.06	0.0037	P	5.2
2	☐	0.500	0.479	21725.41	0.0179	P	0.9
3	☐	50.000	50.633	1816154.44	1.5000	A	1.9
4	☐	250.000	251.383	8789459.37	7.4328	A	1.2
5	☐	500.000	499.245	17246535.98	14.7578	A	1.4

y = 0.0296 * x + 0.0037
R = 1.0000
DL = 0.01932
BEC = 0.125

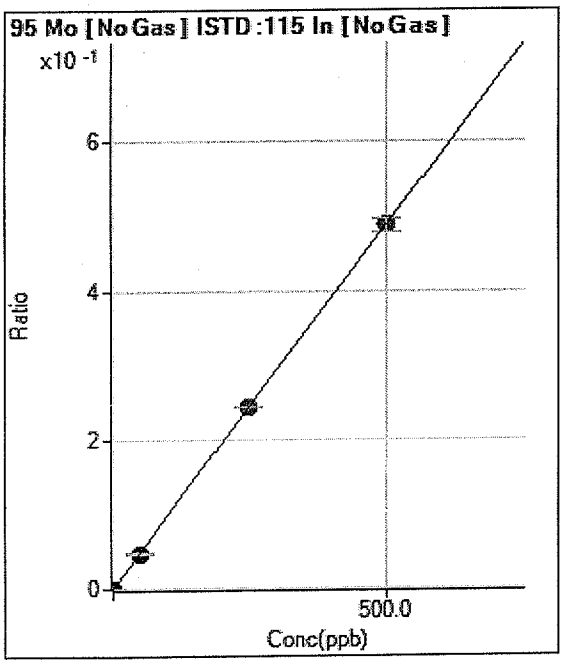
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	243.33	0.0002	P	15.1
2	☐	5.000	3.754	86881.40	0.0714	P	1.8
3	☐	10.000	9.808	225548.63	0.1863	P	0.8
4	☐	25.000	24.609	552354.52	0.4671	P	1.4
5	☐	50.000	50.359	1116750.97	0.9556	A	1.7

y = 0.0190 * x + 2.0396E-004
R = 0.9997
DL = 0.004884
BEC = 0.01075

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	230.00	0.0000	P	9.3
2	☐	0.500	0.475	3734.97	0.0005	P	0.7
3	☐	50.000	48.998	358043.90	0.0479	P	1.8
4	☐	250.000	249.264	1762797.29	0.2435	A	0.4
5	☐	500.000	500.468	3434479.52	0.4888	A	3.5

y = 9.7658E-004 * x + 3.0764E-005
R = 1.0000
DL = 0.008789
BEC = 0.0315

Weight: <None>
Min Conc: 0

US EPA Tune Check Report

Operator Name	LYaman
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq. Date-Time	2021-12-20 09:03:02
Report Comment	---
Instrument Name	G8421A SG19253823

[No Gas]

Sensitivity

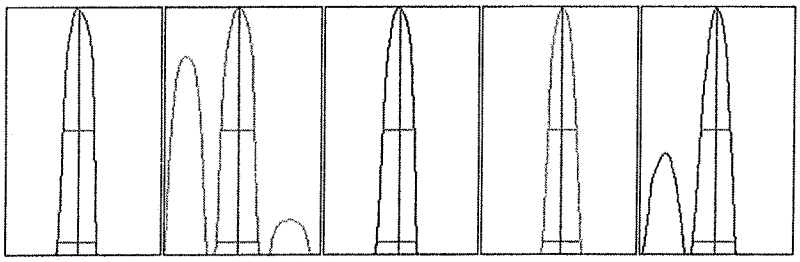
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	22850	228502.18			2.415	5.000
24	10.00	106787	1067869.31			1.118	5.000
59	10.00	230703	2307033.48			1.419	5.000
115	10.00	337398	3373982.77			0.390	5.000
208	10.00	184153	1841531.32			2.115	5.000

Mass	RSD% (Flag)
9	
24	
59	
115	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	22927	23365	21909	23005	23045
24	107524	106817	105018	106415	108160
59	232747	229770	225366	233271	232364
115	336499	338622	336094	338994	336782
208	184256	184840	177569	186883	187219

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	39134.21	8.95	8.90 - 9.10	
24	174412.91	23.95	23.90 - 24.10	
59	387572.59	59.00	58.90 - 59.10	
115	635012.80	115.05	114.90 - 115.10	
208	328679.48	208.00	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.61	0.735	0.900	
24	0.64	0.785	0.900	
59	0.62	0.778	0.900	
115	0.56	0.735	0.900	
208	0.59	0.820	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	153.699999999999
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	HMI	Nebulizer Gas	0.61 L/min	Dilution Gas	0.36 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.10 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.4 V	Deflect	13.6 V
Extract 2	-195.0 V	Cell Entrance	-36 V	Plate Bias	-50 V
Omega Bias	-100 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	122	Axis Gain	0.9991	QP Bias	-3.0 V
Mass Offset	126	Axis Offset	0.04		

Hardware Settings

Torch

Torch H	0.5 mm	Torch V	-0.2 mm		

EM

Discriminator	3.6 mV	Analog HV	2119 V	Pulse HV	969 V

Calibration Blank Report

Sample Name	BLANK
File Name	H6L18002.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\lH6L18.b
Acq Time	2021-12-20 09:27:40
Sample Type	CalBlk
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	101758.91	1.5
Be	9	6	No Gas	121.11	20.3
B	11	6	No Gas	5186.52	4.1
Na	23	45	H2	563658.77	0.4
Mg	24	45	No Gas	78697.54	18.5
Al	27	45	No Gas	75009.96	23.8
Si	28	45	H2	20759.59	2.8
P	31	45	No Gas	23475.14	0.6
K	39	45	He	109025.18	1.5
Ca	40	45	H2	158074.05	0.4
Ti	47	45	No Gas	274.67	10.6
V	51	45	He	4878.20	3.4
Cr	52	45	He	1995.48	0.2
Mn	55	45	No Gas	18772.36	13.3
Fe	56	45	H2	57612.43	2.8
Co	59	45	No Gas	1305.40	25.6
Ni	60	45	He	386.01	7.8
Cu	63	45	He	2606.92	2.4
Zn	66	72	No Gas	2672.26	4.5
As	75	72	He	319.67	3.1
Se	78	72	H2	51.00	18.7
Sr	88	72	No Gas	4320.70	7.7
Zr	90	72	No Gas	363.34	26.7
Mo	95	115	No Gas	792.25	15.6
Mo	98	115	No Gas	1373.40	9.5
[Cd]	106	115	No Gas	41.00	21.3
Ag	107	115	No Gas	215.56	11.8
[Cd]	108	115	No Gas	26.67	27.6
Cd	111	115	No Gas	390.72	22.5
Sn	118	115	No Gas	2223.52	3.2
Sn	118	115	H2	1966.82	2.6
Sb	123	115	No Gas	310.00	6.5
Ba	137	115	No Gas	824.47	22.5
W	182	159	No Gas	880.04	3.4
Hg	201	159	No Gas	63.17	9.2

Calibration Blank Report

Name	Mass	ISTD	Tune	CPS	RSD
Hg	201	159	He	35.83	16.1
Tl	205	159	No Gas	5649.08	12.8
Pb	206	159	No Gas	1906.82	8.1
Pb	207	159	No Gas	1650.12	18.5
Pb	208	159	No Gas	7360.86	11.4
Th	232	159	No Gas	55.56	9.2
U	238	159	No Gas	2983.70	10.3

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD
Li	6	No Gas	1738581.79	0.8
Sc	45	No Gas	4636170.50	0.4
Sc	45	H2	2981901.92	0.3
Sc	45	He	523296.98	1.0
Ge	72	No Gas	1200611.92	0.9
Ge	72	H2	919312.46	1.2
Ge	72	He	347706.79	1.0
In	115	No Gas	7571626.34	0.6
Tb	159	No Gas	10033512.66	0.3
Tb	159	He	6768676.33	0.3

Calibration Blank Report

Sample Name	S0
File Name	H6L18003.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 09:31:27
Sample Type	CalBlk
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	98939.96	1.3
Be	9	6	No Gas	96.67	24.9
B	11	6	No Gas	3734.94	0.1
Na	23	45	H2	566965.23	0.3
Mg	24	45	No Gas	61568.07	0.9
Al	27	45	No Gas	44317.13	0.6
Si	28	45	H2	12972.72	1.1
P	31	45	No Gas	22607.70	0.3
K	39	45	He	110700.46	1.9
Ca	40	45	H2	141134.47	0.6
Ti	47	45	No Gas	196.00	8.0
V	51	45	He	5503.10	0.7
Cr	52	45	He	1998.82	3.3
Mn	55	45	No Gas	13642.13	1.3
Fe	56	45	H2	56354.46	0.5
Co	59	45	No Gas	790.02	5.1
Ni	60	45	He	376.01	6.6
Cu	63	45	He	2534.91	3.7
Zn	66	72	No Gas	1404.74	2.1
As	75	72	He	325.00	2.2
Se	78	72	H2	45.33	7.7
Sr	88	72	No Gas	4404.06	4.7
Zr	90	72	No Gas	243.33	15.6
Mo	95	115	No Gas	230.00	10.4
Mo	98	115	No Gas	328.89	5.6
[Cd]	106	115	No Gas	16.00	22.5
Ag	107	115	No Gas	142.22	8.2
[Cd]	108	115	No Gas	16.67	3.5
Cd	111	115	No Gas	137.34	3.1
Sn	118	115	No Gas	1508.98	1.7
Sn	118	115	H2	1381.18	5.4
Sb	123	115	No Gas	218.89	3.2
Ba	137	115	No Gas	475.56	8.2
W	182	159	No Gas	526.68	12.6
Hg	201	159	No Gas	30.33	23.6

Calibration Blank Report

Name	Mass	ISTD	Tune	CPS	RSD
Hg	201	159	He	23.50	9.3
Tl	205	159	No Gas	2107.96	2.0
Pb	206	159	No Gas	1206.73	8.9
Pb	207	159	No Gas	1170.06	12.9
Pb	208	159	No Gas	4882.60	3.1
Th	232	159	No Gas	36.67	24.0
U	238	159	No Gas	1057.82	4.4

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD
Li	6	No Gas	1681799.59	0.8
Sc	45	No Gas	4617155.50	0.6
Sc	45	H2	2972542.08	1.0
Sc	45	He	522068.73	0.6
Ge	72	No Gas	1192516.67	0.5
Ge	72	H2	914687.13	0.4
Ge	72	He	344471.49	0.6
In	115	No Gas	7470718.61	1.2
Tb	159	No Gas	10030832.66	0.8
Tb	159	He	6703669.67	0.1

Calibration Standard Report

Sample Name	S1
File Name	H6L18004.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 09:34:19
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	104316.18	1.0
Be	9	6	No Gas	1501.19	3.8
B	11	6	No Gas	5545.55	1.4
Na	23	45	H2	778355.67	0.6
Mg	24	45	No Gas	641342.33	0.6
Al	27	45	No Gas	796257.96	0.6
Si	28	45	H2	158564.99	0.8
P	31	45	No Gas	43841.68	0.3
K	39	45	He	151214.69	2.4
Ca	40	45	H2	665444.29	1.0
Ti	47	45	No Gas	1182.05	3.4
V	51	45	He	9620.71	0.7
Cr	52	45	He	6466.20	1.6
Mn	55	45	No Gas	27508.95	0.7
Fe	56	45	H2	927687.56	0.3
Co	59	45	No Gas	14975.54	1.2
Ni	60	45	He	1999.48	1.8
Cu	63	45	He	7107.86	1.5
Zn	66	72	No Gas	6942.44	4.1
As	75	72	He	1054.04	2.7
Se	78	72	H2	277.33	2.9
Sr	88	72	No Gas	21725.41	1.0
Zr	90	72	No Gas	86881.40	2.3
Mo	95	115	No Gas	3734.97	1.4
Ag	107	115	No Gas	11174.73	1.8
Cd	111	115	No Gas	2115.17	1.7
Sn	118	115	No Gas	7329.82	1.9
Sb	123	115	No Gas	7056.35	0.2
Ba	137	115	No Gas	3082.59	4.4
W	182	159	No Gas	3773.91	4.1
Hg	201	159	He	104.17	5.6
Tl	205	159	No Gas	17472.22	0.6
Pb	208	159	No Gas	26319.94	1.4
U	238	159	No Gas	22623.09	1.1

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1679740.17	0.5	1681799.59	99.88	60	120	
Sc	45	No Gas	4657751.50	0.7	4617155.5	100.88	60	120	
Sc	45	H2	2989746.33	0.6	2972542.08	100.58	60	120	
Sc	45	He	525749.11	0.8	522068.73	100.7	60	120	
Ge	72	No Gas	1216162.42	0.5	1192516.67	101.98	60	120	
Ge	72	H2	922635.98	0.7	914687.13	100.87	60	120	
Ge	72	He	347631.94	0.4	344471.49	100.92	60	120	
In	115	No Gas	7544400.20	1.7	7470718.61	100.99	60	120	
Tb	159	No Gas	10007535.43	0.4	10030832.66	99.77	60	120	
Tb	159	He	6743614.67	0.7	6703669.67	100.6	60	120	

Calibration Standard Report

Sample Name	S2
File Name	H6L18005.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 09:37:10
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	144724.57	0.5
Be	9	6	No Gas	14605.45	1.9
B	11	6	No Gas	23612.06	0.4
Na	23	45	H2	25520269.33	0.3
Mg	24	45	No Gas	60488078.67	0.1
Al	27	45	No Gas	77292122.18	0.9
Si	28	45	H2	750169.42	1.1
P	31	45	No Gas	65500.63	0.5
K	39	45	He	3795074.00	5.4
Ca	40	45	H2	52255470.67	0.6
Ti	47	45	No Gas	95026.89	0.7
V	51	45	He	303321.25	10.2
Cr	52	45	He	349519.73	11.0
Mn	55	45	No Gas	9822338.00	0.8
Fe	56	45	H2	86013061.33	0.6
Co	59	45	No Gas	1394270.42	1.6
Ni	60	45	He	137084.43	9.8
Cu	63	45	He	372519.17	9.2
Zn	66	72	No Gas	225455.75	0.6
As	75	72	He	60525.31	9.2
Se	78	72	H2	24859.54	0.5
Sr	88	72	No Gas	1816154.44	1.6
Zr	90	72	No Gas	225548.63	1.3
Mo	95	115	No Gas	358043.90	1.2
Ag	107	115	No Gas	96519.16	0.9
Cd	111	115	No Gas	194706.62	0.8
Sn	118	115	No Gas	568236.56	0.9
Sb	123	115	No Gas	133798.51	0.8
Ba	137	115	No Gas	560117.63	0.9
W	182	159	No Gas	71947.35	1.1
Hg	201	159	He	833.03	9.5
Tl	205	159	No Gas	1624055.18	0.9
Pb	208	159	No Gas	2252373.06	0.8
U	238	159	No Gas	2214088.80	0.1

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1664426.57	1.8	1681799.59	98.97	60	120	
Sc	45	No Gas	4601236.83	1.0	4617155.5	99.66	60	120	
Sc	45	H2	2991077.58	1.0	2972542.08	100.62	60	120	
Sc	45	He	522379.78	0.5	522068.73	100.06	60	120	
Ge	72	No Gas	1210803.62	0.9	1192516.67	101.53	60	120	
Ge	72	H2	914621.44	0.5	914687.13	99.99	60	120	
Ge	72	Ho	344433.99	0.4	344471.49	99.99	60	120	
In	115	No Gas	7478194.31	0.6	7470718.61	100.1	60	120	
Tb	159	No Gas	9945204.05	0.8	10030832.66	99.15	60	120	
Tb	159	He	6725855.00	1.3	6703669.67	100.33	60	120	

Calibration Standard Report

Sample Name	S3
File Name	H6L18006.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 09:40:22
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	326344.31	0.1
Be	9	6	No Gas	70524.93	1.0
B	11	6	No Gas	95993.03	1.5
Na	23	45	H2	123035170.67	1.0
Mg	24	45	No Gas	291556522.67	0.9
Al	27	45	No Gas	373379834.44	0.8
Si	28	45	H2	3621294.42	0.3
P	31	45	No Gas	229397.46	1.1
K	39	45	He	19411746.67	0.7
Ca	40	45	H2	255630970.67	1.2
Ti	47	45	No Gas	459864.71	1.2
V	51	45	He	1690209.13	0.4
Cr	52	45	He	1945931.13	0.8
Mn	55	45	No Gas	47122873.33	0.2
Fe	56	45	H2	415448864.00	0.4
Co	59	45	No Gas	6584687.50	0.8
Ni	60	45	He	748352.56	0.4
Cu	63	45	He	1977090.62	0.2
Zn	66	72	No Gas	1064321.54	1.1
As	75	72	He	329262.09	0.9
Se	78	72	H2	120540.78	0.6
Sr	88	72	No Gas	8789459.37	1.6
Zr	90	72	No Gas	552354.52	1.9
Mo	95	115	No Gas	1762797.29	0.7
Ag	107	115	No Gas	452154.36	0.8
Cd	111	115	No Gas	934988.36	0.7
Sn	118	115	No Gas	2745558.78	0.9
Sb	123	115	No Gas	643787.44	1.0
Ba	137	115	No Gas	2721794.34	1.0
W	182	159	No Gas	347694.07	1.4
Hg	201	159	He	4316.24	0.9
Tl	205	159	No Gas	7915878.02	1.7
Pb	208	159	No Gas	10895716.33	1.7
U	238	159	No Gas	10918644.29	0.5

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1641726.41	0.8	1681799.59	97.62	60	120	
Sc	45	No Gas	4536029.83	0.8	4617155.5	98.24	60	120	
Sc	45	H2	2927173.00	0.7	2972542.08	98.47	60	120	
Sc	45	He	509471.38	0.4	522068.73	97.59	60	120	
Ge	72	No Gas	1182488.00	0.5	1192516.67	99.16	60	120	
Ge	72	H2	900860.34	0.5	914687.13	98.49	60	120	
Ge	72	He	336511.44	0.6	344471.49	97.69	60	120	
In	115	No Gas	7240632.16	0.2	7470718.61	96.92	60	120	
Tb	159	No Gas	9854102.66	0.8	10030832.66	98.24	60	120	
Tb	159	He	6686996.67	0.4	6703669.67	99.75	60	120	

Calibration Standard Report

Sample Name	S4
File Name	H6L18007.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 09:43:12
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	545962.98	0.7
Be	9	6	No Gas	136248.55	0.6
B	11	6	No Gas	187752.70	2.2
Na	23	45	H2	240634330.67	0.7
Mg	24	45	No Gas	575142528.00	1.0
Al	27	45	No Gas	743650735.58	0.4
Si	28	45	H2	7131920.50	1.0
P	31	45	No Gas	430219.14	1.1
K	39	45	He	37365458.67	0.0
Ca	40	45	H2	510337728.00	0.6
Ti	47	45	No Gas	904086.65	1.5
V	51	45	He	3321727.25	0.4
Cr	52	45	He	3815051.00	0.8
Mn	55	45	No Gas	91385648.00	0.4
Fe	56	45	H2	820021525.33	1.5
Co	59	45	No Gas	12866352.67	0.3
Ni	60	45	He	1443844.12	0.7
Cu	63	45	He	3819041.08	0.7
Zn	66	72	No Gas	2079903.21	0.4
As	75	72	He	647342.75	1.1
Se	78	72	H2	232809.80	0.5
Sr	88	72	No Gas	17246535.98	0.8
Zr	90	72	No Gas	1116750.97	0.3
Mo	95	115	No Gas	3434479.52	0.6
Ag	107	115	No Gas	885497.46	1.1
Cd	111	115	No Gas	1838145.10	1.2
Sn	118	115	No Gas	5383608.67	1.0
Sb	123	115	No Gas	1294402.62	0.8
Ba	137	115	No Gas	5303564.23	0.9
W	182	159	No Gas	687264.00	1.5
Hg	201	159	He	8334.61	0.6
Tl	205	159	No Gas	15381341.61	0.7
Pb	208	159	No Gas	21054625.52	0.9
U	238	159	No Gas	21428186.93	1.9

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1661591.82	0.6	1681799.59	98.8	60	120	
Sc	45	No Gas	4520766.50	2.7	4617155.5	97.91	60	120	
Sc	45	H2	2961326.00	1.1	2972542.08	99.62	60	120	
Sc	45	He	505384.25	0.6	522068.73	96.8	60	120	
Ge	72	No Gas	1168851.12	2.0	1192516.67	98.02	60	120	
Ge	72	H2	888716.37	0.9	914687.13	97.16	60	120	
Ge	72	He	335219.72	0.3	344471.49	97.31	60	120	
In	115	No Gas	7031530.03	2.9	7470718.61	94.12	60	120	
Tb	159	No Gas	9813047.39	1.7	10030832.66	97.83	60	120	
Tb	159	He	6667528.17	0.8	6703669.67	99.46	60	120	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	H6L18008.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 09:45:57
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	30.599	ppb	1.4	377068.12	30	102	90	110	
Be	9	6	No Gas	30.719	ppb	2.5	85231.86	30	102.4	90	110	
B	11	6	No Gas	30.123	ppb	2.5	59799.31	30	100.41	90	110	
Na	23	45	H2	32417.818	ppb	1.2	155666250.67	30000	108.06	90	110	
Mg	24	45	No Gas	31875.001	ppb	1.6	367174410.67	30000	106.25	90	110	
Al	27	45	No Gas	31693.386	ppb	1.0	470946819.65	30000	105.64	90	110	
Si	28	45	H2	3351.392	ppb	1.3	4761265.33	3000	111.71	90	110	> +/- 10%
P	31	45	No Gas	302.035	ppb	1.9	268945.23	300	100.68	90	110	
K	39	45	He	32741.873	ppb	0.6	24237109.33	30000	109.14	90	110	
Ca	40	45	H2	32224.878	ppb	2.2	326504000.00	30000	107.42	90	110	
Ti	47	45	No Gas	296.978	ppb	0.8	538069.23	300	98.99	90	110	
V	51	45	He	309.060	ppb	0.3	2023362.92	300	103.02	90	110	
Cr	52	45	He	315.568	ppb	0.3	2373052.08	300	105.19	90	110	
Mn	55	45	No Gas	2042.900	ppb	2.6	62530294.67	2000	102.14	90	110	
Fe	56	45	H2	32370.900	ppb	0.4	528336693.33	30000	107.9	90	110	
Co	59	45	No Gas	308.982	ppb	2.1	7977774.17	300	102.99	90	110	
Ni	60	45	He	313.360	ppb	0.9	894827.48	300	104.45	90	110	
Cu	63	45	He	318.305	ppb	0.6	2404540.92	300	106.1	90	110	
Zn	66	72	No Gas	326.346	ppb	2.5	1359874.83	300	108.78	90	110	
As	75	72	He	305.826	ppb	1.1	393936.81	300	101.94	90	110	
Se	78	72	H2	313.113	ppb	0.4	144259.95	300	104.37	90	110	
Sr	88	72	No Gas	309.216	ppb	2.0	10670763.47	300	103.07	90	110	
Zr	90	72	No Gas	32.765	ppb	2.2	725838.06	30	109.22	90	110	
Mo	95	115	No Gas	303.854	ppb	0.6	2116723.67	300	101.28	90	110	
Ag	107	115	No Gas	31.014	ppb	1.4	556568.54	30	103.38	90	110	
Cd	111	115	No Gas	326.723	ppb	1.4	1216441.94	300	108.91	90	110	
Sn	118	115	No Gas	307.633	ppb	0.9	3355558.06	300	102.54	90	110	
Sb	123	115	No Gas	59.863	ppb	1.0	781082.83	60	99.77	90	110	
Ba	137	115	No Gas	308.505	ppb	0.9	1659856.56	300	102.84	90	110	
W	182	159	No Gas	31.994	ppb	1.8	441031.54	30	106.65	90	110	
Hg	201	159	He	2.879	ppb	0.7	4829.26	3	95.97	90	110	
Tl	205	159	No Gas	307.303	ppb	3.4	9512200.45	300	102.43	90	110	
Pb	208	159	No Gas	310.420	ppb	1.7	13168156.47	300	103.47	90	110	
U	238	159	No Gas	302.936	ppb	3.2	13117526.98	300	100.98	90	110	

Initial Calibration Verification (ICV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1674235.26	0.7	1681799.59	99.55	60	120	
Sc	45	No Gas	4514002.33	2.5	4617155.5	97.77	60	120	
Sc	45	H2	2931455.58	1.1	2972542.08	98.62	60	120	
Sc	45	He	497270.40	0.8	522068.73	95.25	60	120	
Ge	72	No Gas	1167121.38	0.7	1192516.67	97.87	60	120	
Ge	72	H2	875296.58	0.2	914687.13	95.69	60	120	
Ge	72	He	332851.39	1.6	344471.49	96.63	60	120	
In	115	No Gas	7132202.32	2.5	7470718.61	95.47	60	120	
Tb	159	No Gas	9818962.11	0.8	10030832.66	97.89	60	120	
Tb	159	He	6658266.33	0.7	6703669.67	99.32	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	ICB
File Name	H6L18009.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 09:48:34
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	100473.98	0.4	
Be	9	6	No Gas	0.010	ppb	80.5	127.78	0.08	
B	11	6	No Gas	0.383	ppb	38.4	4580.75	4	
Na	23	45	H2	1.419	ppb	60.4	561881.69	40	
Mg	24	45	No Gas	4.876	ppb	51.5	116352.27	10	
Al	27	45	No Gas	4.624	ppb	54.4	111956.64	15	
Si	28	45	H2	2.063	ppb	9.6	15604.08	8	
P	31	45	No Gas	1.167	ppb	40.2	23099.18	10	
K	39	45	He	6.469	ppb	49.1	111758.47	20	
Ca	40	45	H2	1.347	ppb	9.3	151739.23	25	
Ti	47	45	No Gas	0.060	ppb	31.1	301.33	0.5	
V	51	45	He	<0.000	ppb	N/A	4939.56	0.5	
Cr	52	45	He	0.014	ppb	66.9	2033.49	0.2	
Mn	55	45	No Gas	0.331	ppb	52.7	23463.61	0.2	>LOD
Fe	56	45	H2	2.141	ppb	7.8	89860.86	10	
Co	59	45	No Gas	0.047	ppb	56.0	1980.16	0.15	
Ni	60	45	He	0.005	ppb	120.1	378.01	0.2	
Cu	63	45	He	0.061	ppb	24.7	2916.31	0.4	
Zn	66	72	No Gas	0.077	ppb	27.7	1707.44	2	
As	75	72	He	0.029	ppb	31.5	353.34	0.2	
Se	78	72	H2	0.067	ppb	14.8	75.67	0.2	
Sr	88	72	No Gas	0.041	ppb	49.0	5765.71	0.2	
Zr	90	72	No Gas	0.002	ppb	134.3	293.34	2	
Mo	95	115	No Gas	0.062	ppb	36.9	680.02	0.2	
Ag	107	115	No Gas	0.004	ppb	35.4	217.78	0.08	
Cd	111	115	No Gas	0.118	ppb	32.7	596.78	0.2	
Sn	118	115	No Gas	0.142	ppb	24.5	3129.27	0.2	
Sb	123	115	No Gas	0.014	ppb	45.9	414.45	0.4	
Ba	137	115	No Gas	0.033	ppb	59.2	661.13	0.2	
W	182	159	No Gas	0.026	ppb	53.4	896.70	0.3	
Hg	201	159	He	0.009	ppb	50.3	39.33	0.1	
Tl	205	159	No Gas	0.166	ppb	34.5	7321.13	0.1	>LOD
Pb	208	159	No Gas	0.085	ppb	31.2	8542.30	0.1	
U	238	159	No Gas	0.048	ppb	31.1	3183.76	0.05	

12/21/2021

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1731267.50	1.1	1681799.59	102.94	60	120	
Sc	45	No Gas	4522834.00	1.2	4617155.5	97.96	60	120	
Sc	45	H2	2910461.67	0.4	2972542.08	97.91	60	120	
Sc	45	He	504197.13	0.9	522068.73	96.58	60	120	
Ge	72	No Gas	1174925.38	0.5	1192516.67	98.52	60	120	
Ge	72	H2	892443.85	0.6	914687.13	97.57	60	120	
Ge	72	He	334653.97	0.8	344471.49	97.15	60	120	
In	115	No Gas	7465011.02	1.3	7470718.61	99.92	60	120	
Tb	159	No Gas	10025575.71	1.5	10030832.66	99.95	60	120	
Tb	159	He	6714826.50	0.2	6703669.67	100.17	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA
File Name	H6L18012.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq TIme	2021-12-20 09:58:42
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.335	ppb	55.6	98501.40	2	-50	50	
Be	9	6	No Gas	<0.000	ppb	N/A	80.00	0.4	-50	50	
B	11	6	No Gas	0.694	ppb	18.4	4858.62	10	-50	50	
Na	23	45	H2	107281.187	ppb	1.0	514477418.67	100000	80	120	
Mg	24	45	No Gas	102135.518	ppb	2.7	1175944234.67	100000	80	120	
Al	27	45	No Gas	102116.818	ppb	3.5	1516954857.40	100000	80	120	
Si	28	45	H2	2.993	ppb	3.9	17053.11	50	-50	50	
P	31	45	No Gas	100453.631	ppb	3.9	82105213.33	100000	80	120	
K	39	45	He	106717.275	ppb	1.7	80293162.67	100000	80	120	
Ca	40	45	H2	106315.779	ppb	0.9	1078242944.00	100000	80	120	
Ti	47	45	No Gas	2096.825	ppb	2.4	3796868.42	2000	80	120	
V	51	45	He	<0.000	ppb	N/A	4205.98	1	-50	50	
Cr	52	45	He	2.156	ppb	1.8	18457.75	1	-50	50	> +/- 20%
Mn	55	45	No Gas	0.283	ppb	1.6	21992.99	1	-50	50	
Fe	56	45	H2	106468.997	ppb	0.4	1739605973.33	100000	80	120	
Co	59	45	No Gas	0.151	ppb	3.6	4664.80	0.75	-50	50	
Ni	60	45	He	0.120	ppb	1.8	714.02	1	-50	50	
Cu	63	45	He	0.171	ppb	3.1	3777.86	2	-50	50	
Zn	66	72	No Gas	1.838	ppb	1.9	8944.96	20	-50	50	
As	75	72	He	<0.000	ppb	N/A	308.67	1	-50	50	
Se	78	72	H2	0.281	ppb	14.1	172.67	1	-50	50	
Sr	88	72	No Gas	1.127	ppb	3.1	42811.73	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.237	ppb	6.0	5437.80	10	-50	50	
Mo	95	115	No Gas	2128.611	ppb	1.3	14359760.82	2000	80	120	
Ag	107	115	No Gas	0.300	ppb	2.9	5342.19	0.4	-50	50	> +/- 20%
Cd	111	115	No Gas	0.092	ppb	16.3	459.72	1	-50	50	
Sn	118	115	No Gas	0.053	ppb	24.2	1953.48	1	-50	50	
Ba	137	115	No Gas	0.341	ppb	8.4	2215.75	1	-50	50	
W	182	159	No Gas	0.183	ppb	13.5	3037.05	1	-50	50	
Hg	201	159	He	0.002	ppb	110.9	26.17	0.5	-50	50	
Tl	205	159	No Gas	<0.000	ppb	N/A	965.60	0.5	-50	50	
Pb	208	159	No Gas	0.072	ppb	24.1	7828.74	0.5	-50	50	
U	238	159	No Gas	<0.000	ppb	N/A	224.45	0.25	-50	50	

12/20/21

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1624519.80	2.7	1681799.59	96.59	60	120	
Sc	45	No Gas	4511505.17	2.0	4617155.5	97.71	60	120	
Sc	45	H2	2934778.83	0.3	2972542.08	98.73	60	120	
Sc	45	He	507006.08	0.9	522068.73	97.11	60	120	
Ge	72	No Gas	1156562.21	1.8	1192516.67	96.98	60	120	
Ge	72	H2	874673.81	0.8	914687.13	95.63	60	120	
Ge	72	He	335900.38	1.2	344471.49	97.51	60	120	
In	115	No Gas	6906591.94	1.9	7470718.61	92.45	60	120	
Tb	159	No Gas	9822091.56	0.6	10030832.66	97.92	60	120	
Tb	159	He	6649310.67	0.5	6703669.67	99.19	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB
File Name	H6L18013.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\LI\H6L18.b
Acq Time	2021-12-20 10:01:19
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	20.604	ppb	1.5	282553.37	20	80	120	
Be	9	6	No Gas	20.971	ppb	2.2	57512.88	20	80	120	
B	11	6	No Gas	19.638	ppb	1.5	39788.52	20	80	120	
Na	23	45	H2	107537.866	ppb	1.6	526256192.00	100000	80	120	
Mg	24	45	No Gas	102852.696	ppb	1.6	1209457408.00	100000	80	120	
Al	27	45	No Gas	103278.247	ppb	2.5	1567203549.98	100000	80	120	
Si	28	45	H2	218.402	ppb	1.7	329197.08	200	80	120	
P	31	45	No Gas	101977.949	ppb	1.2	85112674.67	100000	80	120	
K	39	45	He	109061.423	ppb	1.4	81642549.33	100000	80	120	
Ca	40	45	H2	106449.369	ppb	0.7	1101765205.33	100000	80	120	
Ti	47	45	No Gas	2132.446	ppb	2.0	3943908.25	2000	80	120	
V	51	45	He	20.697	ppb	1.0	142402.06	20	80	120	
Cr	52	45	He	23.247	ppb	0.6	179114.79	20	80	120	
Mn	55	45	No Gas	20.432	ppb	0.7	651947.27	20	80	120	
Fe	56	45	H2	107535.882	ppb	1.7	1792898517.33	100000	80	120	
Co	59	45	No Gas	20.597	ppb	1.0	543556.44	20	80	120	
Ni	60	45	He	20.991	ppb	0.7	61141.32	20	80	120	
Cu	63	45	He	21.301	ppb	1.0	165507.11	20	80	120	
Zn	66	72	No Gas	22.385	ppb	1.0	96156.04	20	80	120	
As	75	72	He	20.857	ppb	0.3	27130.19	20	80	120	
Se	78	72	H2	21.634	ppb	0.5	10110.12	20	80	120	
Sr	88	72	No Gas	21.593	ppb	1.8	761892.70	20	80	120	
Zr	90	72	No Gas	11.193	ppb	1.7	252294.65	20	80	120	> +/- 20%
Mo	95	115	No Gas	2152.766	ppb	1.7	14979561.07	2000	80	120	
Ag	107	115	No Gas	20.157	ppb	1.7	361472.37	20	80	120	
Cd	111	115	No Gas	20.029	ppb	0.9	74593.17	20	80	120	
Sn	118	115	No Gas	20.279	ppb	0.3	222296.83	20	80	120	
Sb	123	115	No Gas	20.002	ppb	0.8	260764.53	20	80	120	
Ba	137	115	No Gas	20.949	ppb	0.9	112985.26	20	80	120	
W	182	159	No Gas	20.439	ppb	1.1	284491.45	20	80	120	
Hg	201	159	He	2.145	ppb	1.1	3626.19	2	80	120	
Tl	205	159	No Gas	19.855	ppb	0.7	622122.58	20	80	120	
Pb	208	159	No Gas	20.247	ppb	1.6	871272.74	20	80	120	
U	238	159	No Gas	20.115	ppb	2.2	879870.83	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1653842.16	2.2	1681799.59	98.34	60	120	
Sc	45	No Gas	4607611.83	2.6	4617155.5	99.79	60	120	
Sc	45	H2	2995072.67	1.3	2972542.08	100.76	60	120	
Sc	45	He	504413.44	0.5	522068.73	96.62	60	120	
Ge	72	No Gas	1186960.04	1.5	1192516.67	99.53	60	120	
Ge	72	H2	884262.75	0.5	914687.13	96.67	60	120	
Ge	72	He	332459.95	0.5	344471.49	96.51	60	120	
In	115	No Gas	7124132.97	1.6	7470718.61	95.36	60	120	
Tb	159	No Gas	9909383.22	1.0	10030832.66	98.79	60	120	
Tb	159	He	6697999.83	0.3	6703669.67	99.92	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV1
File Name	H6L18015.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 10:06:32
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.634	ppb	0.8	310861.22	25	94.54	90	110	
Be	9	6	No Gas	23.931	ppb	1.6	65829.28	25	95.72	90	110	
B	11	6	No Gas	46.474	ppb	2.5	89448.72	50	92.95	90	110	
Na	23	45	H2	25022.353	ppb	0.8	121140920.00	25000	100.09	90	110	
Mg	24	45	No Gas	24469.398	ppb	2.4	285391936.00	25000	97.88	90	110	
Al	27	45	No Gas	24294.411	ppb	3.2	365569447.89	25000	97.18	90	110	
Si	28	45	H2	2481.660	ppb	0.3	3554166.83	2500	99.27	90	110	
P	31	45	No Gas	242.028	ppb	1.1	222648.94	250	96.81	90	110	
K	39	45	He	24997.219	ppb	0.4	18786315.33	25000	99.99	90	110	
Ca	40	45	H2	24516.077	ppb	0.5	250230224.00	25000	98.06	90	110	
Ti	47	45	No Gas	238.124	ppb	1.9	436885.68	250	95.25	90	110	
V	51	45	He	248.383	ppb	0.5	1649765.33	250	99.35	90	110	
Cr	52	45	He	250.354	ppb	0.4	1909142.46	250	100.14	90	110	
Mn	55	45	No Gas	1480.214	ppb	1.2	45878165.33	1500	98.68	90	110	
Fe	56	45	H2	24734.592	ppb	0.6	406601450.67	25000	98.94	90	110	
Co	59	45	No Gas	247.670	ppb	1.2	6474350.17	250	99.07	90	110	
Ni	60	45	He	248.788	ppb	0.6	720380.63	250	99.52	90	110	
Cu	63	45	He	255.491	ppb	0.4	1957235.33	250	102.2	90	110	
Zn	66	72	No Gas	239.775	ppb	1.4	1023139.42	250	95.91	90	110	
As	75	72	He	247.442	ppb	0.6	322603.06	250	98.98	90	110	
Se	78	72	H2	249.113	ppb	0.8	117039.44	250	99.65	90	110	
Sr	88	72	No Gas	244.014	ppb	0.7	8621589.94	250	97.61	90	110	
Zr	90	72	No Gas	24.046	ppb	0.3	545396.82	25	96.18	90	110	
Mo	95	115	No Gas	239.600	ppb	2.9	1720796.25	250	95.84	90	110	
Ag	107	115	No Gas	23.515	ppb	1.9	435162.00	25	94.06	90	110	
Cd	111	115	No Gas	236.849	ppb	1.6	908919.24	250	94.74	90	110	
Sn	118	115	No Gas	240.147	ppb	1.6	2700927.25	250	96.06	90	110	
Sb	123	115	No Gas	46.354	ppb	1.1	623465.01	50	92.71	90	110	
Ba	137	115	No Gas	479.838	ppb	2.3	2661085.31	500	95.97	90	110	
W	182	159	No Gas	23.664	ppb	0.9	334102.48	25	94.66	90	110	
Hg	201	159	He	2.460	ppb	1.4	4183.87	2.5	98.4	90	110	
Tl	205	159	No Gas	244.187	ppb	2.6	7738295.53	250	97.67	90	110	
Pb	208	159	No Gas	245.397	ppb	1.1	10658730.14	250	98.16	90	110	
U	238	159	No Gas	237.646	ppb	2.1	10535033.47	250	95.06	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1659269.00	1.9	1681799.59	98.66	60	120	
Sc	45	No Gas	4569922.33	1.1	4617155.5	98.98	60	120	
Sc	45	H2	2952344.00	1.1	2972542.08	99.32	60	120	
Sc	45	He	504175.81	0.6	522068.73	96.57	60	120	
Ge	72	No Gas	1194886.84	1.8	1192516.67	100.2	60	120	
Ge	72	H2	892579.79	1.5	914687.13	97.58	60	120	
Ge	72	He	336801.37	0.7	344471.49	97.77	60	120	
In	115	No Gas	7352597.37	0.7	7470718.61	98.42	60	120	
Tb	159	No Gas	10053323.21	0.6	10030832.66	100.22	60	120	
Tb	159	He	6746505.83	0.5	6703669.67	100.64	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB1
File Name	H6L18016.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 10:09:09
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	97446.48	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	76.67	0.08	
B	11	6	No Gas	0.084	ppb	139.8	3891.65	4	
Na	23	45	H2	<0.000	ppb	N/A	532809.85	40	
Mg	24	45	No Gas	<0.000	ppb	N/A	43863.16	10	
Al	27	45	No Gas	<0.000	ppb	N/A	28146.31	15	
Si	28	45	H2	1.031	ppb	18.3	14316.70	8	
P	31	45	No Gas	<0.000	ppb	N/A	22052.82	10	
K	39	45	He	6.671	ppb	54.9	111972.01	20	
Ca	40	45	H2	<0.000	ppb	N/A	95124.73	25	
Ti	47	45	No Gas	<0.000	ppb	N/A	174.67	0.5	
V	51	45	He	0.061	ppb	8.4	5723.19	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1726.11	0.2	
Mn	55	45	No Gas	<0.000	ppb	N/A	12547.21	0.2	
Fe	56	45	H2	<0.000	ppb	N/A	32942.27	10	
Co	59	45	No Gas	<0.000	ppb	N/A	505.35	0.15	
Ni	60	45	He	<0.000	ppb	N/A	275.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	2027.49	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	1296.73	2	
As	75	72	He	0.005	ppb	174.6	324.33	0.2	
Se	78	72	H2	<0.000	ppb	N/A	43.00	0.2	
Sr	88	72	No Gas	<0.000	ppb	N/A	3088.14	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	193.33	2	
Mo	95	115	No Gas	0.006	ppb	134.1	272.23	0.2	
Ag	107	115	No Gas	<0.000	ppb	N/A	123.33	0.08	
Cd	111	115	No Gas	0.024	ppb	73.3	233.99	0.2	
Sn	118	115	No Gas	0.017	ppb	51.3	1714.56	0.2	
Sb	123	115	No Gas	<0.000	ppb	N/A	216.67	0.4	
Ba	137	115	No Gas	<0.000	ppb	N/A	267.78	0.2	
W	182	159	No Gas	0.001	ppb	1825.9	536.68	0.3	
Hg	201	159	He	0.006	ppb	23.4	33.67	0.1	
Tl	205	159	No Gas	0.023	ppb	94.6	2844.79	0.1	
Pb	208	159	No Gas	0.005	ppb	233.8	5090.43	0.1	
U	238	159	No Gas	<0.000	ppb	N/A	826.70	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1682475.00	1.1	1681799.59	100.04	60	120	
Sc	45	No Gas	4556689.83	1.7	4617155.5	98.69	60	120	
Sc	45	H2	2944126.58	0.7	2972542.08	99.04	60	120	
Sc	45	He	504609.00	0.9	522068.73	96.66	60	120	
Ge	72	No Gas	1180088.54	1.1	1192516.67	98.96	60	120	
Ge	72	H2	894029.77	1.0	914687.13	97.74	60	120	
Ge	72	He	336614.81	1.1	344471.49	97.72	60	120	
In	115	No Gas	7507755.60	0.5	7470718.61	100.5	60	120	
Tb	159	No Gas	10045834.60	1.9	10030832.66	100.15	60	120	
Tb	159	He	6772768.50	0.7	6703669.67	101.03	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV5
File Name	H6L18056.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 12:01:04
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.795	ppb	3.3	309853.63	25	95.18	90	110	
Be	9	6	No Gas	25.019	ppb	2.3	68265.29	25	100.08	90	110	
B	11	6	No Gas	47.272	ppb	3.7	90181.89	50	94.54	90	110	
Na	23	45	H2	24612.496	ppb	0.8	119379120.00	25000	98.45	90	110	
Mg	24	45	No Gas	23867.286	ppb	2.0	279810154.67	25000	95.47	90	110	
Al	27	45	No Gas	23496.373	ppb	2.2	355394981.37	25000	93.99	90	110	
Si	28	45	H2	2382.778	ppb	1.1	3419016.83	2500	95.31	90	110	
P	31	45	No Gas	237.273	ppb	1.5	219853.36	250	94.91	90	110	
K	39	45	He	24863.852	ppb	2.6	18237988.00	25000	99.46	90	110	
Ca	40	45	H2	23945.521	ppb	0.8	244842416.00	25000	95.78	90	110	
Ti	47	45	No Gas	235.048	ppb	1.2	433457.47	250	94.02	90	110	
V	51	45	He	251.371	ppb	2.7	1629408.45	250	100.55	90	110	
Cr	52	45	He	254.390	ppb	3.7	1892997.83	250	101.76	90	110	
Mn	55	45	No Gas	1452.868	ppb	1.4	45265617.33	1500	96.86	90	110	
Fe	56	45	H2	24404.035	ppb	1.0	401867488.00	25000	97.62	90	110	
Co	59	45	No Gas	242.572	ppb	1.3	6374158.83	250	97.03	90	110	
Ni	60	45	He	254.311	ppb	3.8	718560.29	250	101.72	90	110	
Cu	63	45	He	259.084	ppb	3.1	1937030.04	250	103.63	90	110	
Zn	66	72	No Gas	236.357	ppb	2.0	1012655.96	250	94.54	90	110	
As	75	72	He	246.990	ppb	1.4	314171.51	250	98.8	90	110	
Se	78	72	H2	249.253	ppb	1.3	118882.54	250	99.7	90	110	
Sr	88	72	No Gas	242.095	ppb	2.0	8588082.99	250	96.84	90	110	
Zr	90	72	No Gas	23.640	ppb	1.2	538329.17	25	94.56	90	110	
Mo	95	115	No Gas	238.670	ppb	1.9	1704811.80	250	95.47	90	110	
Ag	107	115	No Gas	23.771	ppb	0.9	437520.94	25	95.08	90	110	
Cd	111	115	No Gas	237.129	ppb	0.7	905029.11	250	94.85	90	110	
Sn	118	115	No Gas	238.839	ppb	0.4	2671507.81	250	95.54	90	110	
Sb	123	115	No Gas	46.736	ppb	2.4	625200.15	50	93.47	90	110	
Ba	137	115	No Gas	480.020	ppb	1.7	2647594.55	500	96	90	110	
W	182	159	No Gas	23.082	ppb	0.7	330322.22	25	92.33	90	110	
Hg	201	159	He	2.468	ppb	1.4	4148.86	2.5	98.72	90	110	
Tl	205	159	No Gas	239.836	ppb	1.6	7704224.97	250	95.93	90	110	
Pb	208	159	No Gas	240.990	ppb	1.7	10609524.84	250	96.4	90	110	
U	238	159	No Gas	234.851	ppb	0.7	10552332.36	250	93.94	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1646309.80	0.6	1681799.59	97.89	60	120	
Sc	45	No Gas	4593429.00	1.3	4617155.5	99.49	60	120	
Sc	45	H2	2957642.25	1.1	2972542.08	99.5	60	120	
Sc	45	He	492304.28	2.7	522068.73	94.3	60	120	
Ge	72	No Gas	1199693.38	0.6	1192516.67	100.6	60	120	
Ge	72	H2	890802.79	0.4	914687.13	97.39	60	120	
Ge	72	He	328633.81	1.6	344471.49	95.4	60	120	
In	115	No Gas	7312581.69	1.0	7470718.61	97.88	60	120	
Tb	159	No Gas	10189339.60	1.6	10030832.66	101.58	60	120	
Tb	159	He	6668943.83	1.7	6703669.67	99.48	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB5
File Name	H6L18057.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 12:03:41
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	98404.22	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	80.00	0.08	
B	11	6	No Gas	0.154	ppb	152.1	4048.37	4	
Na	23	45	H2	<0.000	ppb	N/A	536248.94	40	
Mg	24	45	No Gas	1.472	ppb	162.0	77341.18	10	
Al	27	45	No Gas	1.909	ppb	121.8	71769.44	15	
Si	28	45	H2	<0.000	ppb	N/A	12559.66	8	
P	31	45	No Gas	3.128	ppb	16.4	24818.14	10	
K	39	45	He	3.488	ppb	132.5	107869.08	20	
Ca	40	45	H2	<0.000	ppb	N/A	99250.38	25	
Ti	47	45	No Gas	0.029	ppb	89.7	246.00	0.5	
V	51	45	He	<0.000	ppb	N/A	5065.60	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1462.75	0.2	
Mn	55	45	No Gas	0.148	ppb	97.5	17945.68	0.2	
Fe	56	45	H2	<0.000	ppb	N/A	39462.27	10	
Co	59	45	No Gas	0.019	ppb	124.2	1274.07	0.15	
Ni	60	45	He	<0.000	ppb	N/A	260.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1606.10	0.4	
Zn	66	72	No Gas	0.049	ppb	56.7	1592.10	2	
As	75	72	He	0.020	ppb	63.4	334.67	0.2	
Se	78	72	H2	0.016	ppb	75.5	51.33	0.2	
Sr	88	72	No Gas	<0.000	ppb	N/A	4057.31	0.2	
Zr	90	72	No Gas	0.000	ppb	2815.2	243.33	2	
Mo	95	115	No Gas	0.030	ppb	80.1	448.90	0.2	
Ag	107	115	No Gas	0.003	ppb	57.5	198.89	0.08	
Cd	111	115	No Gas	0.064	ppb	54.4	390.47	0.2	
Sn	118	115	No Gas	0.023	ppb	113.3	1791.24	0.2	
Sb	123	115	No Gas	0.008	ppb	76.2	335.56	0.4	
Ba	137	115	No Gas	0.018	ppb	225.8	581.13	0.2	
W	182	159	No Gas	0.018	ppb	59.6	786.70	0.3	
Hg	201	159	He	0.002	ppb	31.5	27.83	0.1	
Tl	205	159	No Gas	0.044	ppb	86.0	3496.10	0.1	
Pb	208	159	No Gas	0.012	ppb	192.6	5383.81	0.1	
U	238	159	No Gas	0.024	ppb	78.9	2091.31	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
LI	6	No Gas	1694105.23	1.6	1681799.59	100.73	60	120	
Sc	45	No Gas	4543941.67	1.8	4617155.5	98.41	60	120	
Sc	45	H2	2929881.25	0.5	2972542.08	98.56	60	120	
Sc	45	He	496677.86	0.7	522068.73	95.14	60	120	
Ge	72	No Gas	1178864.33	1.3	1192516.67	98.86	60	120	
Ge	72	H2	887350.00	1.5	914687.13	97.01	60	120	
Ge	72	He	328289.62	1.2	344471.49	95.3	60	120	
In	115	No Gas	7571171.87	2.3	7470718.61	101.34	60	120	
Tb	159	No Gas	10035568.21	2.1	10030832.66	100.05	60	120	
Tb	159	He	6755638.67	0.2	6703669.67	100.78	60	120	

Blank Report

Sample Name	IML016WB
File Name	H6L18058.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 12:06:17
Sample Type	Blank
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	99348.30	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	50.00	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	3681.60	4	
Na	23	45	H2	113.256	ppb	1.9	1101908.04	40	>1/2LOQ
Mg	24	45	No Gas	21.860	ppb	2.9	315280.92	10	>1/2LOQ
Al	27	45	No Gas	<0.000	ppb	N/A	34780.13	15	
Si	28	45	H2	<0.000	ppb	N/A	11771.65	8	
P	31	45	No Gas	3.626	ppb	18.0	25330.40	10	
K	39	45	He	8.179	ppb	37.4	112060.80	20	
Ca	40	45	H2	70.124	ppb	1.4	850137.19	25	>1/2LOQ
Ti	47	45	No Gas	0.045	ppb	12.6	275.33	0.5	
V	51	45	He	<0.000	ppb	N/A	5157.64	0.5	
Cr	52	45	He	0.007	ppb	147.6	1970.14	0.2	
Mn	55	45	No Gas	<0.000	ppb	N/A	11324.70	0.2	
Fe	56	45	H2	<0.000	ppb	N/A	36745.94	10	
Co	59	45	No Gas	<0.000	ppb	N/A	248.00	0.15	
Ni	60	45	He	0.029	ppb	10.9	442.68	0.2	
Cu	63	45	He	0.011	ppb	28.1	2512.23	0.4	
Zn	66	72	No Gas	0.684	ppb	6.1	4293.35	2	
As	75	72	He	<0.000	ppb	N/A	273.00	0.2	
Se	78	72	H2	<0.000	ppb	N/A	27.33	0.2	
Sr	88	72	No Gas	0.890	ppb	2.2	35622.91	0.2	>1/2LOQ
Zr	90	72	No Gas	<0.000	ppb	N/A	203.33	2	
Mo	95	115	No Gas	<0.000	ppb	N/A	101.11	0.2	
Ag	107	115	No Gas	0.056	ppb	2.5	1220.06	0.08	
Cd	111	115	No Gas	<0.000	ppb	N/A	99.97	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	1165.61	0.2	
Sb	123	115	No Gas	0.002	ppb	111.6	256.67	0.4	
Ba	137	115	No Gas	0.112	ppb	13.1	1122.27	0.2	
W	182	159	No Gas	0.004	ppb	102.6	580.02	0.3	
Hg	201	159	He	0.002	ppb	22.2	26.67	0.1	
Tl	205	159	No Gas	<0.000	ppb	N/A	963.37	0.1	
Pb	208	159	No Gas	<0.000	ppb	N/A	3666.89	0.1	
U	238	159	No Gas	<0.000	ppb	N/A	256.67	0.05	

Blank Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1711411.80	1.3	1681799.59	101.76	60	120	
Sc	45	No Gas	4561872.67	0.6	4617155.5	98.8	60	120	
Sc	45	H2	2933927.42	1.5	2972542.08	98.7	60	120	
Sc	45	He	499855.00	1.0	522068.73	95.75	60	120	
Ge	72	No Gas	1187021.62	1.3	1192516.67	99.54	60	120	
Ge	72	H2	896671.08	0.4	914687.13	98.03	60	120	
Ge	72	He	333441.86	0.9	344471.49	96.8	60	120	
In	115	No Gas	7585099.38	1.5	7470718.61	101.53	60	120	
Tb	159	No Gas	10053163.49	1.4	10030832.66	100.22	60	120	
Tb	159	He	6723264.67	0.3	6703669.67	100.29	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IML016WL
File Name	H6L18059.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 12:08:51
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	28.771	ppb	3.6	369570.06	30	95.9	85	115	
Be	9	6	No Gas	29.374	ppb	3.1	83564.41	30	97.91	83	121	
B	11	6	No Gas	25.798	ppb	5.5	53056.95	30	85.99	85	115	
Na	23	45	H2	3198.450	ppb	1.2	15784552.00	3000	106.62	85	117	
Mg	24	45	No Gas	3082.176	ppb	0.5	36242202.67	3000	102.74	83	118	
Al	27	45	No Gas	2962.541	ppb	0.4	44912129.33	3000	98.75	84	117	
Si	28	45	H2	1.449	ppb	14.8	14771.85	3000	0.05	85	115	FAIL
P	31	45	No Gas	3.894	ppb	20.5	25761.86	300	1.3	85	115	FAIL
K	39	45	He	3147.244	ppb	2.6	2406763.17	3000	104.91	87	115	
Ca	40	45	H2	3171.254	ppb	1.1	32101282.00	3000	105.71	87	118	
Ti	47	45	No Gas	28.907	ppb	2.0	53570.43	30	96.36	85	115	
V	51	45	He	30.348	ppb	3.5	201841.43	30	101.16	86	115	
Cr	52	45	He	31.286	ppb	2.5	235192.88	30	104.29	85	116	
Mn	55	45	No Gas	29.464	ppb	1.8	932870.08	30	98.21	87	115	
Fe	56	45	H2	3112.412	ppb	0.9	50597876.00	3000	103.75	87	118	
Co	59	45	No Gas	29.811	ppb	0.6	785255.66	30	99.37	86	115	
Ni	60	45	He	31.909	ppb	3.3	90739.84	30	106.36	85	117	
Cu	63	45	He	33.021	ppb	2.2	249719.90	30	110.07	85	118	
Zn	66	72	No Gas	59.050	ppb	2.2	254681.30	60	98.42	83	119	
As	75	72	He	30.188	ppb	2.4	39050.30	30	100.63	84	116	
Se	78	72	H2	30.043	ppb	0.8	14316.93	30	100.14	80	120	
Sr	88	72	No Gas	31.060	ppb	1.6	1108259.75	30	103.53	85	115	
Zr	90	72	No Gas	0.011	ppb	40.4	490.01	30	0.04	85	115	FAIL
Mo	95	115	No Gas	28.067	ppb	2.3	204558.49	30	93.56	85	115	
Ag	107	115	No Gas	29.369	ppb	2.3	550979.98	30	97.9	85	117	
Cd	111	115	No Gas	28.524	ppb	2.3	111103.99	30	95.08	87	115	
Sn	118	115	No Gas	28.409	ppb	3.1	325274.91	30	94.7	85	115	
Sb	123	115	No Gas	28.197	ppb	2.1	384599.66	30	93.99	85	117	
Ba	137	115	No Gas	28.886	ppb	1.3	162828.36	30	96.29	86	114	
W	182	159	No Gas	0.018	ppb	39.9	780.03	30	0.06	85	115	FAIL
Hg	201	159	He	<0.000	ppb	N/A	23.17	2.5	0	82	119	FAIL
Tl	205	159	No Gas	29.881	ppb	1.4	942102.26	30	99.6	82	116	
Pb	208	159	No Gas	30.098	ppb	1.1	1302115.12	30	100.33	88	115	
U	238	159	No Gas	28.891	ppb	2.0	1272554.50	30	96.3	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1716523.08	1.0	1681799.59	102.06	60	120	
Sc	45	No Gas	4600693.00	2.1	4617155.5	99.64	60	120	
Sc	45	H2	2917068.33	1.0	2972542.08	98.13	60	120	
Sc	45	He	493748.49	2.8	522068.73	94.58	60	120	
Ge	72	No Gas	1202366.95	1.6	1192516.67	100.83	60	120	
Ge	72	H2	902815.81	0.4	914687.13	98.7	60	120	
Ge	72	He	331961.00	2.9	344471.49	96.37	60	120	
In	115	No Gas	7454007.25	1.1	7470718.61	99.78	60	120	
Tb	159	No Gas	9982564.33	2.4	10030832.66	99.52	60	120	
Tb	159	He	6642683.33	2.0	6703669.67	99.09	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IML016WC
File Name	H6L18060.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 12:11:26
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.447	ppb	0.8	369901.58	30	98.16	85	115	
Be	9	6	No Gas	30.042	ppb	0.9	84093.08	30	100.14	83	121	
B	11	6	No Gas	26.813	ppb	2.8	54145.58	30	89.38	85	115	
Na	23	45	H2	3207.727	ppb	0.8	15708282.33	3000	106.92	85	117	
Mg	24	45	No Gas	3145.696	ppb	1.7	35994185.33	3000	104.86	83	118	
Al	27	45	No Gas	3011.324	ppb	1.4	44429667.67	3000	100.38	84	117	
Si	28	45	H2	1.552	ppb	19.0	14802.56	3000	0.05	85	115	FAIL
P	31	45	No Gas	4.261	ppb	29.6	25361.11	300	1.42	85	115	FAIL
K	39	45	He	3101.490	ppb	1.1	2400700.58	3000	103.38	87	115	
Ca	40	45	H2	3159.091	ppb	1.6	31733074.67	3000	105.3	87	118	
Ti	47	45	No Gas	29.318	ppb	2.4	52850.20	30	97.73	85	115	
V	51	45	He	30.105	ppb	0.3	202614.56	30	100.35	86	115	
Cr	52	45	He	31.317	ppb	0.2	238148.39	30	104.39	85	116	
Mn	55	45	No Gas	30.389	ppb	1.4	935796.56	30	101.3	87	115	
Fe	56	45	H2	3136.465	ppb	1.9	50595581.33	3000	104.55	87	118	
Co	59	45	No Gas	30.643	ppb	1.7	785441.92	30	102.14	86	115	
Ni	60	45	He	31.449	ppb	1.1	90482.18	30	104.83	85	117	
Cu	63	45	He	32.208	ppb	1.4	246431.39	30	107.36	85	118	
Zn	66	72	No Gas	59.804	ppb	0.7	254797.08	60	99.67	83	119	
As	75	72	He	29.880	ppb	0.9	39026.89	30	99.6	84	116	
Se	78	72	H2	30.674	ppb	0.6	14445.40	30	102.25	80	120	
Sr	88	72	No Gas	31.554	ppb	1.1	1111945.75	30	105.18	85	115	
Zr	90	72	No Gas	0.009	ppb	16.1	446.68	30	0.03	85	115	FAIL
Mo	95	115	No Gas	27.936	ppb	0.3	202826.78	30	93.12	85	115	
Ag	107	115	No Gas	29.702	ppb	0.8	555136.25	30	99.01	85	117	
Cd	111	115	No Gas	28.696	ppb	0.6	111330.85	30	95.65	87	115	
Sn	118	115	No Gas	28.335	ppb	0.9	323123.38	30	94.45	85	115	
Sb	123	115	No Gas	28.512	ppb	0.5	387369.97	30	95.04	85	117	
Ba	137	115	No Gas	28.966	ppb	0.9	162661.83	30	96.55	86	114	
W	182	159	No Gas	0.016	ppb	28.8	743.36	30	0.05	85	115	FAIL
Hg	201	159	He	<0.000	ppb	N/A	19.17	2.5	-0.12	82	119	FAIL
Tl	205	159	No Gas	30.467	ppb	3.0	949027.53	30	101.56	82	116	
Pb	208	159	No Gas	30.476	ppb	2.9	1302772.32	30	101.59	88	115	
U	238	159	No Gas	29.338	ppb	3.0	1276780.75	30	97.79	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1689571.48	3.7	1681799.59	100.46	60	120	
Sc	45	No Gas	4479557.17	4.6	4617155.5	97.02	60	120	
Sc	45	H2	2894777.50	1.0	2972542.08	97.38	60	120	
Sc	45	He	499223.97	0.3	522068.73	95.62	60	120	
Ge	72	No Gas	1187934.79	3.1	1192516.67	99.62	60	120	
Ge	72	H2	892231.33	0.6	914687.13	97.54	60	120	
Ge	72	He	334999.66	0.2	344471.49	97.25	60	120	
In	115	No Gas	7426006.96	2.5	7470718.61	99.4	60	120	
Tb	159	No Gas	9869886.00	3.9	10030832.66	98.4	60	120	
Tb	159	He	6686139.17	0.9	6703669.67	99.74	60	120	

Sample Report

Sample Name	L159-08I
File Name	H6L18067.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 12:29:32
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	691.491	69.149	ppb	2.3	735994.05	50	>LDR
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	58.89	50	
B	11	6	No Gas	2601.304	260.130	ppb	3.9	493377.08	100	>LDR
Na	23	45	H2	3196334.740	319633.474	ppb	0.8	1556739114.67	50000	>LDR
Mg	24	45	No Gas	4399.779	439.978	ppb	2.1	5171687.50	50000	
Al	27	45	No Gas	<0.000	<0.000	ppb	N/A	23823.73	50000	
Si	28	45	H2	7250.147	725.015	ppb	1.3	1058236.08	5000	
P	31	45	No Gas	236.855	23.686	ppb	2.2	41807.49	500	
K	39	45	He	29320.815	2932.081	ppb	1.2	2313271.58	50000	
Ca	40	45	H2	72817.243	7281.724	ppb	1.2	75188157.33	50000	
Ti	47	45	No Gas	0.342	0.034	ppb	57.0	255.33	500	
V	51	45	He	3.210	0.321	ppb	1.6	7490.05	500	
Cr	52	45	He	<0.000	<0.000	ppb	N/A	1590.76	500	
Mn	55	45	No Gas	187.808	18.781	ppb	1.4	593166.40	3000	
Fe	56	45	H2	159.014	15.901	ppb	1.2	320594.96	50000	
Co	59	45	No Gas	<0.000	<0.000	ppb	N/A	374.67	500	
Ni	60	45	He	<0.000	<0.000	ppb	N/A	275.33	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1952.14	500	
Zn	66	72	No Gas	0.888	0.089	ppb	15.6	1764.12	500	
As	75	72	He	10.397	1.040	ppb	1.1	1671.77	500	
Se	78	72	H2	<0.000	<0.000	ppb	N/A	37.67	500	
Sr	88	72	No Gas	1921.758	192.176	ppb	1.8	6707686.26	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	193.33	50	
Mo	95	115	No Gas	180.170	18.017	ppb	0.8	124313.64	500	
Ag	107	115	No Gas	0.023	0.002	ppb	25.1	174.44	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	20.93	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	851.14	500	
Sb	123	115	No Gas	<0.000	<0.000	ppb	N/A	196.67	100	
Ba	137	115	No Gas	95.123	9.512	ppb	0.9	51038.93	1000	
W	182	159	No Gas	4.108	0.411	ppb	3.6	6044.80	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	202.22	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1771.17	500	
U	238	159	No Gas	0.278	0.028	ppb	10.0	2193.53	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1692453.61	2.0	1681799.59	100.63	60	120	
Sc	45	No Gas	4552078.83	2.0	4617155.5	98.59	60	120	
Sc	45	H2	2982772.17	0.5	2972542.08	100.34	60	120	
Sc	45	He	507571.91	1.0	522068.73	97.22	60	120	
Ge	72	No Gas	1180070.75	1.6	1192516.67	98.96	60	120	
Ge	72	H2	892655.69	0.1	914687.13	97.59	60	120	
Ge	72	He	336744.14	0.6	344471.49	97.76	60	120	
In	115	No Gas	7052300.41	1.7	7470718.61	94.4	60	120	
Tb	159	No Gas	9618314.34	1.4	10030832.66	95.89	60	120	
Tb	159	He	6499256.83	1.2	6703669.67	96.95	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV6
File Name	H6L18068.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 12:32:08
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.214	ppb	1.8	330563.06	25	92.86	90	110	
Be	9	6	No Gas	24.074	ppb	0.5	71274.37	25	96.3	90	110	
B	11	6	No Gas	50.401	ppb	1.4	104072.76	50	100.8	90	110	
Na	23	45	H2	24987.184	ppb	0.3	120610597.33	25000	99.95	90	110	
Mg	24	45	No Gas	25119.360	ppb	0.5	291237973.33	25000	100.48	90	110	
Al	27	45	No Gas	24693.849	ppb	1.3	369406914.49	25000	98.78	90	110	
Si	28	45	H2	2448.421	ppb	0.6	3496178.17	2500	97.94	90	110	
P	31	45	No Gas	248.853	ppb	0.3	226953.03	250	99.54	90	110	
K	39	45	He	25103.797	ppb	0.8	18549640.67	25000	100.42	90	110	
Ca	40	45	H2	24367.513	ppb	0.5	247968320.00	25000	97.47	90	110	
Ti	47	45	No Gas	239.386	ppb	1.1	436622.92	250	95.75	90	110	
V	51	45	He	250.575	ppb	0.9	1636394.96	250	100.23	90	110	
Cr	52	45	He	251.865	ppb	0.2	1888552.29	250	100.75	90	110	
Mn	55	45	No Gas	1486.118	ppb	1.4	45796256.00	1500	99.07	90	110	
Fe	56	45	H2	24567.085	ppb	0.8	402612757.33	25000	98.27	90	110	
Co	59	45	No Gas	246.664	ppb	1.3	6410886.50	250	98.67	90	110	
Ni	60	45	He	250.045	ppb	1.0	711915.89	250	100.02	90	110	
Cu	63	45	He	253.866	ppb	0.5	1912259.12	250	101.55	90	110	
Zn	66	72	No Gas	241.977	ppb	0.8	1016961.25	250	96.79	90	110	
As	75	72	He	246.044	ppb	0.7	315324.76	250	98.42	90	110	
Se	78	72	H2	247.375	ppb	1.0	115046.83	250	98.95	90	110	
Sr	88	72	No Gas	245.681	ppb	0.6	8549289.66	250	98.27	90	110	
Zr	90	72	No Gas	23.820	ppb	1.5	532003.18	25	95.28	90	110	
Mo	95	115	No Gas	240.996	ppb	0.3	1684749.00	250	96.4	90	110	
Ag	107	115	No Gas	24.118	ppb	0.8	434454.87	25	96.47	90	110	
Cd	111	115	No Gas	238.516	ppb	0.2	891057.63	250	95.41	90	110	
Sn	118	115	No Gas	244.089	ppb	0.7	2672155.38	250	97.64	90	110	
Sb	123	115	No Gas	47.530	ppb	0.7	622335.32	50	95.06	90	110	
Ba	137	115	No Gas	483.831	ppb	0.7	2611858.86	500	96.77	90	110	
W	182	159	No Gas	23.639	ppb	0.8	326252.85	25	94.56	90	110	
Hg	201	159	He	2.437	ppb	1.8	4139.68	2.5	97.48	90	110	
Tl	205	159	No Gas	246.727	ppb	1.2	7642177.75	250	98.69	90	110	
Pb	208	159	No Gas	248.640	ppb	1.9	10554662.02	250	99.46	90	110	
U	238	159	No Gas	241.342	ppb	2.3	10454245.42	250	96.54	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1786184.11	1.1	1681799.59	106.21	60	120	
Sc	45	No Gas	4543073.33	1.8	4617155.5	98.4	60	120	
Sc	45	H2	2943360.58	0.4	2972542.08	99.02	60	120	
Sc	45	He	495739.21	0.5	522068.73	94.96	60	120	
Ge	72	No Gas	1177016.25	2.9	1192516.67	98.7	60	120	
Ge	72	H2	883494.77	0.5	914687.13	96.59	60	120	
Ge	72	He	331066.56	0.3	344471.49	96.11	60	120	
In	115	No Gas	7157757.45	2.3	7470718.61	95.81	60	120	
Tb	159	No Gas	9829081.83	3.5	10030832.66	97.99	60	120	
Tb	159	He	6735519.83	0.7	6703669.67	100.48	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB6
File Name	H6L18069.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 12:34:45
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	103955.73	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	45.56	0.08	
B	11	6	No Gas	2.049	ppb	11.9	8153.48	4	
Na	23	45	H2	22.914	ppb	4.2	668005.92	40	
Mg	24	45	No Gas	<0.000	ppb	N/A	43985.13	10	
Al	27	45	No Gas	<0.000	ppb	N/A	28114.97	15	
Si	28	45	H2	<0.000	ppb	N/A	12553.00	8	
P	31	45	No Gas	4.745	ppb	31.0	26467.18	10	
K	39	45	He	5.995	ppb	47.0	111492.21	20	
Ca	40	45	H2	<0.000	ppb	N/A	98314.87	25	
Ti	47	45	No Gas	<0.000	ppb	N/A	183.33	0.5	
V	51	45	He	<0.000	ppb	N/A	5014.92	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1488.08	0.2	
Mn	55	45	No Gas	<0.000	ppb	N/A	12365.64	0.2	
Fe	56	45	H2	<0.000	ppb	N/A	35220.61	10	
Co	59	45	No Gas	<0.000	ppb	N/A	553.35	0.15	
Ni	60	45	He	<0.000	ppb	N/A	228.00	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1636.77	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	1368.74	2	
As	75	72	He	0.012	ppb	83.2	325.67	0.2	
Se	78	72	H2	<0.000	ppb	N/A	35.67	0.2	
Sr	88	72	No Gas	<0.000	ppb	N/A	2931.44	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	136.67	2	
Mo	95	115	No Gas	0.000	ppb	5490.3	227.78	0.2	
Ag	107	115	No Gas	<0.000	ppb	N/A	106.67	0.08	
Cd	111	115	No Gas	0.031	ppb	43.4	255.94	0.2	
Sn	118	115	No Gas	0.004	ppb	192.1	1540.09	0.2	
Sb	123	115	No Gas	<0.000	ppb	N/A	204.45	0.4	
Ba	137	115	No Gas	<0.000	ppb	N/A	254.45	0.2	
W	182	159	No Gas	0.008	ppb	109.8	636.69	0.3	
Hg	201	159	He	0.004	ppb	16.1	29.67	0.1	
Tl	205	159	No Gas	<0.000	ppb	N/A	2112.41	0.1	
Pb	208	159	No Gas	<0.000	ppb	N/A	3771.34	0.1	
U	238	159	No Gas	<0.000	ppb	N/A	886.70	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1813116.11	1.3	1681799.59	107.81	60	120	
Sc	45	No Gas	4603069.33	3.2	4617155.5	99.69	60	120	
Sc	45	H2	2928093.67	0.8	2972542.08	98.5	60	120	
Sc	45	He	504653.32	0.2	522068.73	96.66	60	120	
Ge	72	No Gas	1184869.71	2.1	1192516.67	99.36	60	120	
Ge	72	H2	880619.12	0.7	914687.13	96.28	60	120	
Ge	72	He	328529.46	0.6	344471.49	95.37	60	120	
In	115	No Gas	7393608.39	2.4	7470718.61	98.97	60	120	
Tb	159	No Gas	10083647.10	2.0	10030832.66	100.53	60	120	
Tb	159	He	6729501.33	0.4	6703669.67	100.39	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV8
File Name	H6L18086.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 13:18:54
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	22.973	ppb	2.4	351313.52	25	91.89	90	110	
Be	9	6	No Gas	22.906	ppb	1.8	72595.42	25	91.62	90	110	
B	11	6	No Gas	49.199	ppb	2.0	108837.23	50	98.4	90	110	
Na	23	45	H2	25564.676	ppb	1.2	121647472.00	25000	102.26	90	110	
Mg	24	45	No Gas	25774.436	ppb	1.2	300682986.67	25000	103.1	90	110	
Al	27	45	No Gas	24877.396	ppb	2.5	374438101.09	25000	99.51	90	110	
Si	28	45	H2	2528.715	ppb	0.5	3559738.42	2500	101.15	90	110	
P	31	45	No Gas	252.005	ppb	1.3	230980.34	250	100.8	90	110	
K	39	45	He	25216.298	ppb	1.4	18577144.67	25000	100.87	90	110	
Ca	40	45	H2	24809.890	ppb	0.6	248921152.00	25000	99.24	90	110	
Ti	47	45	No Gas	237.653	ppb	2.0	436150.84	250	95.06	90	110	
V	51	45	He	251.689	ppb	1.2	1638728.17	250	100.68	90	110	
Cr	52	45	He	255.468	ppb	2.0	1909602.42	250	102.19	90	110	
Mn	55	45	No Gas	1455.696	ppb	2.3	45131609.33	1500	97.05	90	110	
Fe	56	45	H2	25112.970	ppb	0.9	405781184.00	25000	100.45	90	110	
Co	59	45	No Gas	244.389	ppb	1.4	6391003.50	250	97.76	90	110	
Ni	60	45	He	251.879	ppb	2.1	714922.50	250	100.75	90	110	
Cu	63	45	He	256.877	ppb	1.8	1929014.83	250	102.75	90	110	
Zn	66	72	No Gas	239.347	ppb	2.0	1009188.06	250	95.74	90	110	
As	75	72	He	246.957	ppb	0.5	316125.65	250	98.78	90	110	
Se	78	72	H2	249.642	ppb	0.7	114457.87	250	99.86	90	110	
Sr	88	72	No Gas	244.421	ppb	2.6	8532114.94	250	97.77	90	110	
Zr	90	72	No Gas	23.817	ppb	2.9	533719.60	25	95.27	90	110	
Mo	95	115	No Gas	242.248	ppb	1.6	1696022.19	250	96.9	90	110	
Ag	107	115	No Gas	23.929	ppb	0.5	431663.66	25	95.72	90	110	
Cd	111	115	No Gas	237.303	ppb	0.7	887768.29	250	94.92	90	110	
Sn	118	115	No Gas	243.539	ppb	1.2	2670257.60	250	97.42	90	110	
Sb	123	115	No Gas	47.024	ppb	0.9	616620.89	50	94.05	90	110	
Ba	137	115	No Gas	490.720	ppb	0.8	2652577.95	500	98.14	90	110	
W	182	159	No Gas	23.170	ppb	0.4	324346.54	25	92.68	90	110	
Hg	201	159	He	2.439	ppb	1.7	4110.51	2.5	97.56	90	110	
Tl	205	159	No Gas	244.404	ppb	1.0	7679606.92	250	97.76	90	110	
Pb	208	159	No Gas	244.320	ppb	0.6	10521701.08	250	97.73	90	110	
U	238	159	No Gas	237.293	ppb	0.8	10429990.42	250	94.92	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1912033.48	1.6	1681799.59	113.69	60	120	
Sc	45	No Gas	4571751.33	1.4	4617155.5	99.02	60	120	
Sc	45	H2	2902105.42	0.8	2972542.08	97.63	60	120	
Sc	45	He	494325.07	1.8	522068.73	94.69	60	120	
Ge	72	No Gas	1180618.04	0.8	1192516.67	99	60	120	
Ge	72	H2	870976.81	0.4	914687.13	95.22	60	120	
Ge	72	He	330683.38	0.8	344471.49	96	60	120	
In	115	No Gas	7167801.98	1.7	7470718.61	95.95	60	120	
Tb	159	No Gas	9967802.38	0.9	10030832.66	99.37	60	120	
Tb	159	He	6685321.00	1.8	6703669.67	99.73	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB8
File Name	H6L18087.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 13:21:31
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	112365.53	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	60.00	0.08	
B	11	6	No Gas	3.059	ppb	7.5	10814.16	4	
Na	23	45	H2	224.885	ppb	1.1	1608844.13	40	>LOD
Mg	24	45	No Gas	2.836	ppb	92.6	93731.54	10	
Al	27	45	No Gas	3.120	ppb	80.0	90459.06	15	
Si	28	45	H2	0.411	ppb	58.3	13159.57	8	
P	31	45	No Gas	6.018	ppb	8.8	27366.93	10	
K	39	45	He	14.239	ppb	29.3	116251.91	20	
Ca	40	45	H2	<0.000	ppb	N/A	117326.99	25	
Tl	47	45	No Gas	0.036	ppb	63.5	259.33	0.5	
V	51	45	He	<0.000	ppb	N/A	4398.71	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1510.75	0.2	
Mn	55	45	No Gas	0.212	ppb	75.0	20043.40	0.2	>LOD
Fe	56	45	H2	0.565	ppb	17.5	63752.96	10	
Co	59	45	No Gas	0.034	ppb	83.6	1652.12	0.15	
Ni	60	45	He	<0.000	ppb	N/A	279.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1948.14	0.4	
Zn	66	72	No Gas	0.041	ppb	83.2	1559.43	2	
As	75	72	He	0.021	ppb	56.0	340.00	0.2	
Se	78	72	H2	0.019	ppb	24.5	51.67	0.2	
Sr	88	72	No Gas	0.006	ppb	473.4	4535.25	0.2	
Zr	90	72	No Gas	0.001	ppb	435.7	263.34	2	
Mo	95	115	No Gas	0.044	ppb	68.3	535.57	0.2	
Ag	107	115	No Gas	0.008	ppb	56.0	288.89	0.08	
Cd	111	115	No Gas	0.036	ppb	82.0	270.40	0.2	
Sn	118	115	No Gas	0.037	ppb	78.6	1891.25	0.2	
Sb	123	115	No Gas	0.009	ppb	42.8	340.01	0.4	
Ba	137	115	No Gas	0.037	ppb	129.0	666.69	0.2	
W	182	159	No Gas	0.010	ppb	65.8	670.02	0.3	
Hg	201	159	He	0.005	ppb	95.8	32.00	0.1	
Tl	205	159	No Gas	0.027	ppb	126.5	2940.39	0.1	
Pb	208	159	No Gas	0.048	ppb	52.9	6920.79	0.1	
U	238	159	No Gas	0.034	ppb	57.3	2541.40	0.05	

LY 12/20/21

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1923971.27	1.0	1681799.59	114.4	60	120	
Sc	45	No Gas	4572323.17	1.6	4617155.5	99.03	60	120	
Sc	45	H2	2884193.50	0.4	2972542.08	97.03	60	120	
Sc	45	He	498607.54	0.2	522068.73	95.51	60	120	
Ge	72	No Gas	1177108.33	1.4	1192516.67	98.71	60	120	
Ge	72	H2	870957.75	0.2	914687.13	95.22	60	120	
Ge	72	He	331836.19	1.2	344471.49	96.33	60	120	
In	115	No Gas	7335200.84	1.5	7470718.61	98.19	60	120	
Tb	159	No Gas	9986029.05	1.7	10030832.66	99.55	60	120	
Tb	159	He	6794976.00	0.3	6703669.67	101.36	60	120	

Sample Report

Sample Name	L159-05
File Name	H6L18089.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 13:26:42
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	160.260	160.260	ppb	0.3	1644123.06	50	>LDR
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	34.44	50	
B	11	6	No Gas	502.417	502.417	ppb	1.6	991223.29	100	>LDR
Na	23	45	H2	307381.404	307381.404	ppb	10.9	1577594112.00	50000	>LDR
Mg	24	45	No Gas	1484.299	1484.299	ppb	4.7	16931946.67	50000	
Al	27	45	No Gas	9.045	9.045	ppb	4.5	175540.82	50000	
Si	28	45	H2	10219.123	10219.123	ppb	11.3	15535061.67	5000	>LDR
P	31	45	No Gas	237.080	237.080	ppb	4.9	213090.69	500	
K	39	45	He	5819.406	5819.406	ppb	6.7	4312065.83	50000	
Ca	40	45	H2	10943.645	10943.645	ppb	10.5	119048056.00	50000	
Ti	47	45	No Gas	0.836	0.836	ppb	7.6	1682.77	500	
V	51	45	He	0.591	0.591	ppb	17.4	8930.91	500	
Cr	52	45	He	0.103	0.103	ppb	12.2	2633.59	500	
Mn	55	45	No Gas	32.712	32.712	ppb	5.2	1001116.33	3000	
Fe	56	45	H2	11.440	11.440	ppb	15.2	259622.43	50000	
Co	59	45	No Gas	<0.000	<0.000	ppb	N/A	571.34	500	
Ni	60	45	He	0.019	0.019	ppb	100.1	402.68	500	
Cu	63	45	He	0.085	0.085	ppb	37.6	2997.00	500	
Zn	66	72	No Gas	0.808	0.808	ppb	3.0	4728.83	500	
As	75	72	He	22.176	22.176	ppb	4.9	28618.58	500	
Se	78	72	H2	0.004	0.004	ppb	310.7	48.00	500	
Sr	88	72	No Gas	236.804	236.804	ppb	3.3	8149427.18	500	
Zr	90	72	No Gas	0.043	0.043	ppb	6.0	1193.39	50	
Mo	95	115	No Gas	12.884	12.884	ppb	2.5	88295.69	500	
Ag	107	115	No Gas	0.057	0.057	ppb	7.7	1140.05	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	9.95	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1288.96	500	
Sb	123	115	No Gas	0.018	0.018	ppb	24.1	441.12	100	
Ba	137	115	No Gas	70.285	70.285	ppb	4.0	371277.59	1000	
W	182	159	No Gas	1.540	1.540	ppb	5.2	20843.89	50	
Hg	201	159	He	0.000	0.000	ppb	697.8	23.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	343.34	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	4209.18	500	
U	238	159	No Gas	0.002	0.002	ppb	113.5	1087.83	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1767574.73	3.7	1681799.59	105.1	60	120	
Sc	45	No Gas	4464220.42	6.4	4617155.5	96.69	60	120	
Sc	45	H2	3169112.50	11.3	2972542.08	106.61	60	120	
Sc	45	He	489178.63	5.7	522068.73	93.7	60	120	
Ge	72	No Gas	1165022.17	4.5	1192516.67	97.69	60	120	
Ge	72	H2	932596.69	7.4	914687.13	101.96	60	120	
Ge	72	He	330456.20	3.7	344471.49	95.93	60	120	
In	115	No Gas	7005623.27	4.7	7470718.61	93.77	60	120	
Tb	159	No Gas	9436659.90	4.2	10030832.66	94.08	60	120	
Tb	159	He	6418291.50	5.3	6703669.67	95.74	60	120	

Sample Report

Sample Name	L159-06
File Name	H6L18090.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 13:29:17
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	184.266	184.266	ppb	3.2	1910161.94	50	>LDR
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	47.78	50	
B	11	6	No Gas	612.981	612.981	ppb	3.6	1231269.67	100	>LDR
Na	23	45	H2	478190.996	478190.996	ppb	0.7	2303348906.67	50000	>LDR
Mg	24	45	No Gas	1726.352	1726.352	ppb	3.3	20086671.33	50000	
Al	27	45	No Gas	6.263	6.263	ppb	3.8	137386.29	50000	
Si	28	45	H2	11429.274	11429.274	ppb	0.4	16310203.33	5000	>LDR
P	31	45	No Gas	61.355	61.355	ppb	1.5	72767.39	500	
K	39	45	He	9238.306	9238.306	ppb	1.4	6999667.00	50000	
Ca	40	45	H2	21692.201	21692.201	ppb	0.4	221270970.67	50000	
Ti	47	45	No Gas	0.537	0.537	ppb	5.7	1173.39	500	
V	51	45	He	6.788	6.788	ppb	2.3	50173.53	500	
Cr	52	45	He	0.063	0.063	ppb	16.4	2406.88	500	
Mn	55	45	No Gas	19.383	19.383	ppb	3.0	610957.85	3000	
Fe	56	45	H2	0.451	0.451	ppb	7.1	63334.20	50000	
Co	59	45	No Gas	0.003	0.003	ppb	110.7	844.03	500	
Ni	60	45	He	0.365	0.365	ppb	6.1	1418.74	500	
Cu	63	45	He	0.340	0.340	ppb	4.6	5040.94	500	
Zn	66	72	No Gas	0.882	0.882	ppb	1.3	5044.94	500	
As	75	72	He	17.082	17.082	ppb	0.9	22170.49	500	
Se	78	72	H2	0.554	0.554	ppb	5.0	300.00	500	
Sr	88	72	No Gas	485.286	485.286	ppb	1.7	16747717.11	500	>LDR
Zr	90	72	No Gas	0.011	0.011	ppb	27.6	480.01	50	
Mo	95	115	No Gas	19.012	19.012	ppb	0.6	129894.74	500	
Ag	107	115	No Gas	0.057	0.057	ppb	10.7	1141.16	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	103.39	500	
Sn	118	115	No Gas	0.040	0.040	ppb	43.9	1837.91	500	
Sb	123	115	No Gas	0.100	0.100	ppb	4.8	1482.31	100	
Ba	137	115	No Gas	75.031	75.031	ppb	0.5	395586.69	1000	
W	182	159	No Gas	3.382	3.382	ppb	2.8	45097.15	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	21.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	535.57	500	
Pb	208	159	No Gas	0.121	0.121	ppb	4.7	9486.96	500	
U	238	159	No Gas	4.378	4.378	ppb	1.5	182507.37	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1800621.46	1.9	1681799.59	107.07	60	120	
Sc	45	No Gas	4546351.83	0.8	4617155.5	98.47	60	120	
Sc	45	H2	2950156.00	0.6	2972542.08	99.25	60	120	
Sc	45	He	503451.59	1.1	522068.73	96.43	60	120	
Ge	72	No Gas	1167315.92	1.3	1192516.67	97.89	60	120	
Ge	72	H2	879242.10	0.6	914687.13	96.12	60	120	
Ge	72	He	330895.11	0.4	344471.49	96.06	60	120	
In	115	No Gas	6983987.54	1.9	7470718.61	93.48	60	120	
Tb	159	No Gas	9404989.07	1.4	10030832.66	93.76	60	120	
Tb	159	He	6521463.67	0.9	6703669.67	97.28	60	120	

Sample Report

Sample Name	L159-07
File Name	H6L18091.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 13:31:53
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	231.711	231.711	ppb	2.0	2382507.13	50	>LDR
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	32.22	50	
B	11	6	No Gas	807.365	807.365	ppb	3.2	1625972.78	100	>LDR
Na	23	45	H2	758840.852	758840.852	ppb	1.3	3682735616.00	50000	>LDR
Mg	24	45	No Gas	1293.458	1293.458	ppb	2.2	14990338.67	50000	
Al	27	45	No Gas	9.377	9.377	ppb	2.8	183067.72	50000	
Si	28	45	H2	11820.661	11820.661	ppb	0.3	16998719.33	5000	>LDR
P	31	45	No Gas	30.326	30.326	ppb	2.1	46989.98	500	
K	39	45	He	10090.945	10090.945	ppb	2.2	7749796.17	50000	
Ca	40	45	H2	20830.340	20830.340	ppb	0.2	214122160.00	50000	
Ti	47	45	No Gas	2.306	2.306	ppb	133.3	4397.64	500	
V	51	45	He	15.420	15.420	ppb	1.3	108845.76	500	
Cr	52	45	He	5.176	5.176	ppb	0.9	41921.30	500	
Mn	55	45	No Gas	0.986	0.986	ppb	1.1	43619.40	3000	
Fe	56	45	H2	<0.000	<0.000	ppb	N/A	42307.32	50000	
Co	59	45	No Gas	<0.000	<0.000	ppb	N/A	705.35	500	
Ni	60	45	He	0.003	0.003	ppb	314.2	376.67	500	
Cu	63	45	He	0.102	0.102	ppb	9.5	3274.40	500	
Zn	66	72	No Gas	0.813	0.813	ppb	5.1	4706.82	500	
As	75	72	He	18.650	18.650	ppb	1.5	24438.74	500	
Se	78	72	H2	0.966	0.966	ppb	6.7	488.01	500	
Sr	88	72	No Gas	456.475	456.475	ppb	1.0	15572134.94	500	>LDR
Zr	90	72	No Gas	0.002	0.002	ppb	104.5	276.67	50	
Mo	95	115	No Gas	33.318	33.318	ppb	2.7	222460.04	500	
Ag	107	115	No Gas	0.054	0.054	ppb	5.8	1061.15	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	22.93	500	
Sn	118	115	No Gas	0.028	0.028	ppb	80.5	1669.00	500	
Sb	123	115	No Gas	0.087	0.087	ppb	5.6	1288.95	100	
Ba	137	115	No Gas	92.528	92.528	ppb	1.0	477029.20	1000	
W	182	159	No Gas	8.609	8.609	ppb	1.1	112854.66	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	20.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	1626.77	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	2911.25	500	
U	238	159	No Gas	5.542	5.542	ppb	1.3	228457.83	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1806456.54	1.0	1681799.59	107.41	60	120	
Sc	45	No Gas	4523318.33	1.2	4617155.5	97.97	60	120	
Sc	45	H2	2972989.50	1.3	2972542.08	100.02	60	120	
Sc	45	He	511010.93	1.2	522068.73	97.88	60	120	
Ge	72	No Gas	1153968.00	0.8	1192516.67	96.77	60	120	
Ge	72	H2	874434.83	0.9	914687.13	95.6	60	120	
Ge	72	He	334485.37	0.9	344471.49	97.1	60	120	
In	115	No Gas	6830613.44	0.6	7470718.61	91.43	60	120	
Tb	159	No Gas	9308406.02	0.6	10030832.66	92.8	60	120	
Tb	159	He	6433627.33	0.4	6703669.67	95.97	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV9
File Name	H6L18095.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 13:42:20
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.562	ppb	1.7	345309.27	25	94.25	90	110	
Be	9	6	No Gas	23.396	ppb	2.7	71632.88	25	93.58	90	110	
B	11	6	No Gas	50.745	ppb	2.0	108320.78	50	101.49	90	110	
Na	23	45	H2	25543.038	ppb	1.2	119880368.00	25000	102.17	90	110	
Mg	24	45	No Gas	25286.964	ppb	1.0	290161248.00	25000	101.15	90	110	
Al	27	45	No Gas	24743.154	ppb	2.9	366286674.54	25000	98.97	90	110	
Si	28	45	H2	2472.236	ppb	2.5	3432271.83	2500	98.89	90	110	
P	31	45	No Gas	250.533	ppb	1.0	225993.84	250	100.21	90	110	
K	39	45	He	25154.911	ppb	0.7	18432701.33	25000	100.62	90	110	
Ca	40	45	H2	24520.686	ppb	0.9	242651280.00	25000	98.08	90	110	
Ti	47	45	No Gas	236.083	ppb	1.0	426151.20	250	94.43	90	110	
V	51	45	He	249.369	ppb	0.8	1614959.58	250	99.75	90	110	
Cr	52	45	He	249.760	ppb	1.3	1857084.79	250	99.9	90	110	
Mn	55	45	No Gas	1459.052	ppb	2.1	44492297.33	1500	97.27	90	110	
Fe	56	45	H2	24775.369	ppb	1.9	394806890.67	25000	99.1	90	110	
Co	59	45	No Gas	242.937	ppb	2.1	6248409.67	250	97.17	90	110	
Ni	60	45	He	248.983	ppb	1.2	702979.23	250	99.59	90	110	
Cu	63	45	He	253.223	ppb	0.8	1891551.50	250	101.29	90	110	
Zn	66	72	No Gas	237.943	ppb	0.9	990190.10	250	95.18	90	110	
As	75	72	He	244.923	ppb	0.2	312187.55	250	97.97	90	110	
Se	78	72	H2	250.068	ppb	0.3	114587.25	250	100.03	90	110	
Sr	88	72	No Gas	242.557	ppb	2.0	8356644.67	250	97.02	90	110	
Zr	90	72	No Gas	23.425	ppb	2.8	518102.15	25	93.7	90	110	
Mo	95	115	No Gas	239.154	ppb	1.1	1650059.55	250	95.66	90	110	
Ag	107	115	No Gas	23.805	ppb	1.0	423203.65	25	95.22	90	110	
Cd	111	115	No Gas	236.872	ppb	0.6	873264.08	250	94.75	90	110	
Sn	118	115	No Gas	243.857	ppb	0.2	2634705.31	250	97.54	90	110	
Sb	123	115	No Gas	47.571	ppb	1.0	614727.29	50	95.14	90	110	
Ba	137	115	No Gas	488.666	ppb	1.6	2603461.77	500	97.73	90	110	
W	182	159	No Gas	24.310	ppb	1.1	333740.57	25	97.24	90	110	
Hg	201	159	He	2.433	ppb	2.0	4091.50	2.5	97.32	90	110	
Tl	205	159	No Gas	245.042	ppb	0.8	7551416.64	250	98.02	90	110	
Pb	208	159	No Gas	246.575	ppb	1.4	10414446.62	250	98.63	90	110	
U	238	159	No Gas	241.762	ppb	0.4	10421629.86	250	96.7	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1847172.74	0.9	1681799.59	109.83	60	120	
Sc	45	No Gas	4496537.33	0.7	4617155.5	97.39	60	120	
Sc	45	H2	2862533.92	1.5	2972542.08	96.3	60	120	
Sc	45	He	491631.47	1.1	522068.73	94.17	60	120	
Ge	72	No Gas	1165349.50	1.7	1192516.67	97.72	60	120	
Ge	72	H2	870471.73	0.3	914687.13	95.17	60	120	
Ge	72	He	329272.68	1.1	344471.49	95.59	60	120	
In	115	No Gas	7063588.88	1.4	7470718.61	94.55	60	120	
Tb	159	No Gas	9775934.06	1.4	10030832.66	97.46	60	120	
Tb	159	He	6669427.17	1.2	6703669.67	99.49	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB9
File Name	H6L18096.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\H6L18.b
Acq Time	2021-12-20 13:44:57
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.156	ppb	37.4	114128.45	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	48.89	0.08	
B	11	6	No Gas	4.299	ppb	8.4	13385.27	4	>LOD
Na	23	45	H2	222.815	ppb	0.2	1627166.83	40	>LOD
Mg	24	45	No Gas	2.484	ppb	45.0	91396.75	10	
Al	27	45	No Gas	2.912	ppb	39.5	89098.80	15	
Si	28	45	H2	1.533	ppb	8.5	14983.40	8	
P	31	45	No Gas	6.448	ppb	4.1	28195.91	10	
K	39	45	He	13.513	ppb	31.9	118134.48	20	
Ca	40	45	H2	<0.000	ppb	N/A	125145.27	25	
Ti	47	45	No Gas	0.026	ppb	11.9	246.67	0.5	
V	51	45	He	0.040	ppb	31.1	5634.49	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1606.76	0.2	
Mn	55	45	No Gas	0.205	ppb	34.1	20184.39	0.2	>LOD
Fe	56	45	H2	1.282	ppb	8.0	76586.46	10	
Co	59	45	No Gas	0.034	ppb	31.2	1688.78	0.15	
Ni	60	45	He	<0.000	ppb	N/A	292.00	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1929.47	0.4	
Zn	66	72	No Gas	0.034	ppb	50.5	1552.09	2	
As	75	72	He	0.024	ppb	63.8	344.67	0.2	
Se	78	72	H2	0.028	ppb	36.6	57.33	0.2	
Sr	88	72	No Gas	<0.000	ppb	N/A	4311.82	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	220.00	2	
Mo	95	115	No Gas	0.032	ppb	34.1	463.34	0.2	
Ag	107	115	No Gas	0.007	ppb	28.8	281.12	0.08	
Cd	111	115	No Gas	0.029	ppb	51.9	248.93	0.2	
Sn	118	115	No Gas	0.023	ppb	35.7	1777.90	0.2	
Sb	123	115	No Gas	0.006	ppb	51.4	303.34	0.4	
Ba	137	115	No Gas	0.043	ppb	40.3	717.80	0.2	
W	182	159	No Gas	0.094	ppb	14.1	1856.82	0.3	
Hg	201	159	He	0.005	ppb	53.5	32.17	0.1	
Tl	205	159	No Gas	0.016	ppb	106.6	2629.18	0.1	
Pb	208	159	No Gas	0.043	ppb	46.7	6746.30	0.1	
U	238	159	No Gas	0.032	ppb	22.0	2455.81	0.05	

LY 12/20/21

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1912358.29	0.8	1681799.59	113.71	60	120	
Sc	45	No Gas	4649764.17	0.9	4617155.5	100.71	60	120	
Sc	45	H2	2934799.58	0.4	2972542.08	98.73	60	120	
Sc	45	He	509062.38	0.4	522068.73	97.51	60	120	
Ge	72	No Gas	1196186.96	1.1	1192516.67	100.31	60	120	
Ge	72	H2	888331.50	0.7	914687.13	97.12	60	120	
Ge	72	He	332485.97	1.3	344471.49	96.52	60	120	
In	115	No Gas	7479189.87	1.3	7470718.61	100.11	60	120	
Tb	159	No Gas	10052705.15	1.1	10030832.66	100.22	60	120	
Tb	159	He	6791825.33	0.5	6703669.67	101.32	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA2
File Name	H6L18099.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 13:52:43
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.475	ppb	35.4	107399.35	2	-50	50	
Be	9	6	No Gas	<0.000	ppb	N/A	36.67	0.4	-50	50	
B	11	6	No Gas	3.628	ppb	6.8	10937.59	10	-50	50	
Na	23	45	H2	107907.511	ppb	0.7	507608096.00	100000	80	120	
Mg	24	45	No Gas	105487.671	ppb	2.1	1200448938.67	100000	80	120	
Al	27	45	No Gas	105182.727	ppb	2.7	1544405043.65	100000	80	120	
Si	28	45	H2	4.870	ppb	121.8	19317.40	50	-50	50	
P	31	45	No Gas	102486.173	ppb	2.6	82798282.67	100000	80	120	
K	39	45	He	106046.352	ppb	0.6	76747104.00	100000	80	120	
Ca	40	45	H2	106660.445	ppb	1.0	1061093461.33	100000	80	120	
Ti	47	45	No Gas	2115.587	ppb	2.0	3786264.58	2000	80	120	
V	51	45	He	<0.000	ppb	N/A	4855.53	1	-50	50	
Cr	52	45	He	2.134	ppb	0.5	17594.62	1	-50	50	> +/- 20%
Mn	55	45	No Gas	0.377	ppb	3.8	24596.77	1	-50	50	
Fe	56	45	H2	107301.067	ppb	1.4	1719701888.00	100000	80	120	
Co	59	45	No Gas	0.132	ppb	2.5	4129.96	0.75	-50	50	
Ni	60	45	He	0.107	ppb	11.5	651.35	1	-50	50	
Cu	63	45	He	0.079	ppb	16.0	2953.66	2	-50	50	
Zn	66	72	No Gas	1.926	ppb	4.6	9379.91	20	-50	50	
As	75	72	He	0.056	ppb	26.2	373.34	1	-50	50	
Se	78	72	H2	0.264	ppb	12.4	161.33	1	-50	50	
Sr	88	72	No Gas	1.096	ppb	3.8	42055.96	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.203	ppb	10.4	4730.86	10	-50	50	
Mo	95	115	No Gas	2097.927	ppb	1.8	14241131.10	2000	80	120	
Ag	107	115	No Gas	0.298	ppb	1.0	5347.76	0.4	-50	50	> +/- 20%
Cd	111	115	No Gas	0.047	ppb	65.8	297.83	1	-50	50	
Sn	118	115	No Gas	0.018	ppb	12.8	1598.99	1	-50	50	
Ba	137	115	No Gas	0.347	ppb	6.6	2263.53	1	-50	50	
W	182	159	No Gas	0.173	ppb	4.6	2923.68	1	-50	50	
Hg	201	159	He	<0.000	ppb	N/A	20.50	0.5	-50	50	
Tl	205	159	No Gas	<0.000	ppb	N/A	456.68	0.5	-50	50	
Pb	208	159	No Gas	0.057	ppb	12.4	7267.51	0.5	-50	50	
U	238	159	No Gas	<0.000	ppb	N/A	195.56	0.25	-50	50	

12/20/21

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1748977.60	0.8	1681799.59	103.99	60	120	
Sc	45	No Gas	4460106.83	2.4	4617155.5	96.6	60	120	
Sc	45	H2	2878852.50	0.7	2972542.08	96.85	60	120	
Sc	45	He	487643.91	0.9	522088.73	93.41	60	120	
Ge	72	No Gas	1165766.38	0.8	1192516.67	97.76	60	120	
Ge	72	H2	856473.37	0.6	914687.13	93.64	60	120	
Ge	72	He	322036.29	0.7	344471.49	93.49	60	120	
In	115	No Gas	6950917.20	1.7	7470718.61	93.04	60	120	
Tb	159	No Gas	9895214.61	0.7	10030832.66	98.65	60	120	
Tb	159	He	6585961.33	0.5	6703669.67	98.24	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB2
File Name	H6L18100.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\L\IH6L18.b
Acq Time	2021-12-20 13:55:20
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6L18003.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	20.528	ppb	2.8	297814.28	20	80	120	
Be	9	6	No Gas	20.820	ppb	4.1	60309.08	20	80	120	
B	11	6	No Gas	22.567	ppb	1.7	47718.61	20	80	120	
Na	23	45	H2	109542.263	ppb	0.8	516773237.33	100000	80	120	
Mg	24	45	No Gas	106443.719	ppb	1.8	1231202389.33	100000	80	120	
Al	27	45	No Gas	106566.824	ppb	1.8	1590369149.63	100000	80	120	
Si	28	45	H2	220.131	ppb	1.6	319792.19	200	80	120	
P	31	45	No Gas	103412.973	ppb	2.4	84907757.33	100000	80	120	
K	39	45	He	108040.393	ppb	0.5	78614373.33	100000	80	120	
Ca	40	45	H2	107789.497	ppb	1.0	1075434240.00	100000	80	120	
Ti	47	45	No Gas	2152.719	ppb	2.5	3916157.00	2000	80	120	
V	51	45	He	21.084	ppb	0.6	140916.74	20	80	120	
Cr	52	45	He	23.510	ppb	0.6	176047.03	20	80	120	
Mn	55	45	No Gas	20.769	ppb	1.0	651703.19	20	80	120	
Fe	56	45	H2	108296.210	ppb	1.7	1740675029.33	100000	80	120	
Co	59	45	No Gas	20.601	ppb	1.6	534891.40	20	80	120	
Ni	60	45	He	21.317	ppb	0.7	60349.84	20	80	120	
Cu	63	45	He	21.491	ppb	1.1	162276.33	20	80	120	
Zn	66	72	No Gas	22.637	ppb	1.8	95943.60	20	80	120	
As	75	72	He	21.037	ppb	0.4	26768.13	20	80	120	
Se	78	72	H2	22.000	ppb	0.7	9976.02	20	80	120	
Sr	88	72	No Gas	22.087	ppb	2.2	768888.76	20	80	120	
Zr	90	72	No Gas	11.090	ppb	2.4	246679.62	20	80	120	> +/- 20%
Mo	95	115	No Gas	2127.121	ppb	3.1	14743864.97	2000	80	120	
Ag	107	115	No Gas	19.987	ppb	1.1	357033.99	20	80	120	
Cd	111	115	No Gas	20.298	ppb	0.7	75303.92	20	80	120	
Sn	118	115	No Gas	20.325	ppb	2.1	221961.66	20	80	120	
Sb	123	115	No Gas	20.261	ppb	0.9	263133.33	20	80	120	
Ba	137	115	No Gas	21.251	ppb	1.7	114177.03	20	80	120	
W	182	159	No Gas	20.444	ppb	1.4	285035.70	20	80	120	
Hg	201	159	He	2.131	ppb	2.3	3588.68	2	80	120	
Tl	205	159	No Gas	20.043	ppb	2.1	629051.26	20	80	120	
Pb	208	159	No Gas	20.467	ppb	1.3	882080.76	20	80	120	
U	238	159	No Gas	20.235	ppb	1.5	886549.78	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1747300.89	1.1	1681799.59	103.89	60	120	
Sc	45	No Gas	4532741.17	1.1	4617155.5	98.17	60	120	
Sc	45	H2	2887125.42	0.3	2972542.08	97.13	60	120	
Sc	45	He	490296.26	0.8	522068.73	93.91	60	120	
Ge	72	No Gas	1171294.29	1.1	1192516.67	98.22	60	120	
Ge	72	H2	858038.56	0.9	914687.13	93.81	60	120	
Ge	72	He	325251.21	0.2	344471.49	94.42	60	120	
In	115	No Gas	7096704.44	1.0	7470718.61	94.99	60	120	
Tb	159	No Gas	9925132.11	0.8	10030832.66	98.95	60	120	
Tb	159	He	6672354.67	0.9	6703669.67	99.53	60	120	

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS METALS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # SMSA-05-01-02

ALL SAMPLES PH<2

Book #: EIM-089
Batch: IML071W
Matrix: WATER
Digestor ID: E

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	

Start	Temp	End	Temp
	91.4 °C		93.7 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A-007-07-22	.15
LCS-2	↓ -07-23	.15
MS	SAMPLE SPIKED WITH LCS	1,2
Blank Soil (Bead)	N/A	N/A
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SW1A-011-02-06	.5+1.0
HCl	SW1A-009-17-09	.25+.25
H_2O_2	N/A	N/A
HNO_3(1:1)	↓	↓
Au	SM6A-007-07-25	.1
pH Strip (0-14)	HC160347	N/A

Digestate Location	METALS
Extract Location	N/A
☑ Reagent Water ID:	SW1A-011-05-06
☑ Thermometer ID:	21G02426/E12
☑ Pipette ID:	7427663331
☐ Pipette ID:	
☐ Pipette ID:	
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask	
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask	

Prepared By: CK
Standard Added By: CK Witnessed By: TH
Extract Rcvd By: TH Checked By: CK

EMAX LABORATORIES

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
21IML016W01	IML016WB	50	ml	12/15/21 13:30	50	50	50	1	
21IML016W02	IML016WL	50	ml	12/15/21 13:30	50	50	50	1	
21IML016W03	IML016WC	50	ml	12/15/21 13:30	50	50	50	1	
21IML016W04	L159-01	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W05	L159-03	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W06	L159-04	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W07	L159-05	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W08	L159-06	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W09	L159-07	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W10	L159-08	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W11	L159-10	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W12	L159-11	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W13	L159-12	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W14	L159-14	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W15	L159-16	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W16	L159-18	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W17	L159-20	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W18	L159-21	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W19	L159-22	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W20	L159-23	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W21	L159-23M	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED
21IML016W22	L159-23S	50	ml	12/15/21 13:30	50	50	50	1	DISSOLVED

CK 12-15-21

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 12/15/21 14:33 Prepared By: CKaing

☑ Digestion Ended @ 12/15/21 17:05 Checked By: CK

Comments: Date 12-15-21

SOP EMAX-6020 Rev. 13

STANDARD LOGS

EMAX LABORATORIES, INC.

STANDARDS LOG FOR ICP-MS

Book No: SM6B-24

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
ICAL3	SM6A-23-01-04	1000	0.25	0.5
AM	SM6A-007-07-25	L	1.0	2.0

EMAX LABORATORIES, INC.

STANDARDS LOG FOR ICP-MS

Book No: SM6B-24

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
ICAL1	SM6A-23-01-02	10	0.025	0.0005
ICAL2	↓ 01-03	↓	↓	↓
ICAL3	↓ 01-04	1000	↓	0.05
W	SM6B-22-63-01 LY 01/06/22	1.0	0.25	0.0005
Zn	↓ 62-~~02~~01	↓	↓	0.001
Zr	SM6A-007-05-06	100	0.025	0.005
P	↓ 06-03	↓	0.125	0.025
Si	SM6A-23-01-08	1000	0.05	0.1
Hg	SM6B-24-10-02	0.25	0.1	0.00005
Au	SM6A-007-07-25	1000	1.0	2.0
				LY 12/09/21

Standard ID	SM6B-24-14-01
Name	S1 (6020)
Final Volume (mL)	500
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Preservative #1	HNO3
ID	SWIA-011-02-05
Volume (mL)	15
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	5
Prep. Date	12/09/21
Exp. Date	02/04/22
Prepared By	LY

Micropipette ID:

☑ 339362028	☑ ICP-06
☐ A42780077	☑ GFAA-07
☐	☐

Comments:

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
ICAL4	SM6A-23-01-05	mixed	5.0	mixed
ICAL5	↓ 01-06	↓	↓	↓
Zr	SM6A-007-05-06	~~1000~~ LY 12/09/21	0.05	0.01
W	SM6A-23-01-09	↓	0.025	0.005
Hg	SM6B-24-11-01	2.5	0.1	0.0005
Au	SM6A-007-07-25	1000	1.0	2.0
				LY 12/09/21

Standard ID	SM6B-24-14-02
Name	S2 (6020)
Final Volume (mL)	500
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Preservative #1	HNO3
ID	SWIA-011-02-05
Volume (mL)	15
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	5
Prep. Date	12/09/21
Exp. Date	02/04/22
Prepared By	LY

Micropipette ID:

☑ 339362028	☑ ICP-06
☑ A42780077	☐ GFAA-07
☐	☐

Comments:

EMAX LABORATORIES, INC.

STANDARDS LOG FOR ICP-MS

Book No: SM6B-24

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
ICAL4	SM6A-23-01-05	mixed	25	mixed
ICAL5	↓ 01-06	↓	↓	↓
Zr	SM6A-007-05-06	100	0.125	0.025
W	SM6A-23-01-09	↓	↓	↓
Hg	SM6B-24-11-01	2.5	0.5	0.0025
Au	SM6A-007-07-25	1000	1.0	2.0
				LY 12/09/21

Standard ID	SM6B-24-15-01
Name	S3 (6020)
Final Volume (mL)	500
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Preservative #1	HNO3
ID	SWIA-011-02-05
Volume (mL)	15
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	5
Prep. Date	12/09/21
Exp. Date	02/04/22
Prepared By	LY

Micropipette ID:

☑ 339362028	☑ ICP-06
☑ A42780077	☐ GFAA-07
☐	☐

Comments:

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
ICAL4	SM6A-23-01-05	mixed	5.0	mixed
ICAL5	↓ 01-06	↓	↓	↓
Zr	SM6A-007-05-06	100	0.25	0.05
W	SM6A-23-01-09	↓	↓	↓
Hg	SM6B-24-11-01	2.5	1.0	0.005
Au	SM6A-007-07-25	1000	↓	2.0
				LY 12/09/21

Standard ID	SM6B-24-15-02
Name	S4 (6020)
Final Volume (mL)	500
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Preservative #1	HNO3
ID	SWIA-011-02-05
Volume (mL)	15
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	5
Prep. Date	12/09/21
Exp. Date	02/04/22
Prepared By	LY

Micropipette ID:

☑ 339362028	☐ ICP-06
☑ A42780077	☐ GFAA-07
☐	☐

Comments:

EMAX LABORATORIES, INC.

STANDARDS LOG FOR ICP-MS

Book No: SM6B-24

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
ICAL4	SM6A-23-01-05	mixed	25	mixed
ICAL5	↓ 01-06	↓	↓	↓
Zr	SM6A-007-05-06	100	0.125	0.025
W	SM6A-23-01-09	↓	↓	↓
Hg	SM6B-24-11-01	2.5	0.5	0.0025
Au	SM6A-007-07-25	1000	1.0	2.0
				LY 12/09/21

Standard ID	SM6B-24-16-01
Name	CCV (6020)
Final Volume (mL)	500
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Preservative #1	HNO3
ID	SWIA-011-02-05
Volume (mL)	15
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	5
Prep. Date	12/09/21
Exp. Date	02/04/22
Prepared By	LY

Micropipette ID:

☑ 339362028	☑ ICP-06
☑ A42780077	☐ GFAA-07
☐	☐

Comments:

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
internal stnd.	SM6A-007-07-17	100	1.0	2.0
Triton X-100	↓ 07-16	NA	0.05	NA
				LY 12/13/21

Standard ID	SM6B-24-16-02
Name	ICTD
Final Volume (mL)	50
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Preservative #1	HNO3
ID	SWIA-011-02-05
Volume (mL)	1.5
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	0.5
Prep. Date	12/13/21
Exp. Date	03/13/22
Prepared By	LY

Micropipette ID:

☑ 339362028	☑ ICP-06
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☐	☐

Comments:

EMAX LABORATORIES, INC.

STANDARDS LOG FOR ICP-MS

Book No: SM6B-24

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
Al	SM1A-018-17-05	10,000	1.5	30
Ca	17-06			
Fe	17-07			
Mg	17-09			
K	17-08			
Na	17-02			
Si	SM6A-007-07-19	1000		3.0
Mn	SM1A-018-14-06		1.0	2.0
P	SM6A-007-07-10		0.15	0.3
Ti	SM1A-018-15-03			
V	15-05			
Cr	14-04			
Co	13-06			
Ni	14-08			
Cu	14-05			
Zn	17-10			
As	13-09			
Se	14-09			
Sr	15-04			
Mo	14-07			

Standard ID	SM6B-24-01-01
Name	ICV
Final Volume (mL)	500
Solvent	Reagent Water
Solvent ID	SW1A-011-03-02
Preservative #1	HNO_3
ID	SW1A-011-02-05
Volume (mL)	15
Preservative #2	HCl
ID	SW1A-009-17-09
Volume (mL)	5
Prep. Date	11/19/21
Exp. Date	12/16/21 *
Prepared By	LY

Micropipette ID:

☒ 339362028	☒ ICP-06
☒ A42780077	☒ GFAA-07
☐	☐

Comments:

LY 11/19/21

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
Cd	SM1A-018-14-02	1000	0.15	0.3
Sn	15-02			
Ba	13-10			
Tl	15-01			
Pb	14-03			
U	15-07			
Sb	13-08		0.03	0.06
Li	18-01		0.015	0.03
Be	14-01			
B	15-06			
Ag	14-10			
Zr	SM6A-23-01-01	100	0.15	
W	SM6A-007-05-16	1000	0.015	
Hg	07-15	10	0.15	0.003
Au	07-~~21~~25	1000	1.0	2.0
	LY 11/19/21			
				LY 11/19/21

Standard ID	SM6B-24-01-~~02~~ 01
Name	ICV cont.
Final Volume (mL)	500
Solvent	Reagent Water
Solvent ID	SW1A-011-03-02
Preservative #1	HNO_3
ID	SW1A-011-02-05
Volume (mL)	15
Preservative #2	HCl
ID	SW1A-009-17-09
Volume (mL)	5
Prep. Date	11/19/21
Exp. Date	12/16/21 *
Prepared By	LY

Micropipette ID:

☒ 339362028	☒ ICP-06
☒ A42780077	☒ GFAA-07
☐	☐

Comments:

* to re-certified
new expiration date
06/14/22
LY 12/14/21

EMAX LABORATORIES, INC.

STANDARDS LOG FOR ICP-MS

Book No: SM6B-24

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
Hg	SM6A-007-06-05	100	1.25	2.5
AM	↓ 07-25	1000	0.1	2.0
				LY 12/03/21

Standard ID	SM6B-24-11-01
Name	Hg@2.5ppm
Final Volume (mL)	50
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Preservative #1	HNO3
ID	SWIA-011-02-05
Volume (mL)	1.5
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	0.5
Prep. Date	12/03/21
Exp. Date	03/03/22
Prepared By	LY LY 01/10/22

Micropipette ID:

☐ 339362028	☑ ICP-06
☑ A42780077	☐ GFAA-07
☐	☐

Comments:

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
ICSA	SM6A-007-07-24	Mixed	5.0	Mixed
AM	↓ 07-25	1000	0.1	2.0
				LY 12/07/21

Standard ID	SM6B-24-11-02
Name	ICSA
Final Volume (mL)	50
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Preservative #1	HNO3
ID	SWIA-011-02-05
Volume (mL)	1.5
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	0.5
Prep. Date	12/07/21
Exp. Date	12/21/21
Prepared By	LY

Micropipette ID:

☐ 339362028	☑ ICP-06
☑ A42780077	☐ GFAA-07
☐	☐

Comments:

EMAX LABORATORIES, INC.

STANDARDS LOG FOR ICP-MS

Book No: SM6B-24

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
ICSA	SM6A-007-07-24	mixed	5.0	mixed
ICAL1	SM6A-23-01-02	10	0.1	0.02
ICAL2	↓ 01-03	↓	↓	↓
Zr	SM6A-007-05-06	100	0.01	↓
W	SM6A-23-01-09	↓	↓	↓
Si	↓ 01-08	1000	↓	0.2
Hg	SM6B-~~22~~ 24-11-01	2.5	0.04	0.002
Au	SM6A-007-07-25	1000	0.1	2.0
				LH 12/10 07/21

Standard ID	SM6B-24-12-01
Name	ICSAB
Final Volume (mL)	50
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Preservative #1	HNO3
ID	SWIA-011-02-05
Volume (mL)	1.5
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	0.5
Prep. Date	~~12/10/21~~ 12/07/21
Exp. Date	12/21/21 LH 12/07/21
Prepared By	LH

Micropipette ID:

☑ 339362028	☑ ICP-06
☑ A42780077	☑ GFAA-07
☐	☐

Comments:

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
MIX 7A	SM6B-22-72-02	1/100	0.2	0.0004/0.04
Zn	↓ 62-01	1.0	1.75	0.0035
Au	SM6A-007-07-25	1000	1.0	2.0
				LH 12/07/21

Standard ID	SM6B-24-12-02
Name	MRL2
Final Volume (mL)	500
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Preservative #1	HNO3
ID	SWIA-011-02-05
Volume (mL)	~~1.5~~ 15 LH 12/07/21
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	5
Prep. Date	12/07/21
Exp. Date	~~03/07/22~~ 02/04/22
Prepared By	LH LH 12/07/21

Micropipette ID:

☑ 339362028	☐ ICP-06
☑ A42780077	☐ GFAA-07
☐	☐

Comments:

EMAX LABORATORIES, INC.

STANDARDS LOG FOR ICP-MS

Book No: SM6B-22

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
ICAL4	SM6A-23-01-05	Mixed	25	Mixed
ICAL5	↓ 01-06	↓	↓	↓
Zr	SM6A-007-05-06	100	0.125	0.025
W	SM6A-23-01-09	↓	↓	↓
Hg	SM6B-22-44-02	2.5	0.5	0.0025
Au	SM6A-007-07-25	1000	1.0	2.0
				LY 11/04/21

Standard ID	SM6B-22-66-01
Name	CCV (6020)
Final Volume (mL)	500
Solvent	Reagent Water
Solvent ID	SWIA-011-03-02
Preservative #1	HNO_3
ID	SWIA-011-02-06
Volume (mL)	15
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	5
Prep. Date	11/04/21
Exp. Date	05/04/22
Prepared By	LY

Micropipette ID:

- ☒ 339362028 ☐ ICP-06
- ☒ A42780077 ☐ GFAA-07
- ☐ ☐

Comments:

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
Tune Soln 3	SM6A-23-01-11	10	8.0	1.6
				LY 11/05/21

Standard ID	SM6B-22-66-02
Name	EPA Tune
Final Volume (mL)	50
Solvent	Reagent Water
Solvent ID	SWIA-011-03-02
Preservative #1	HNO_3
ID	SWIA-011-02-06
Volume (mL)	1.5
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	0.5
Prep. Date	11/05/21
Exp. Date	02/05/22
Prepared By	LY

Micropipette ID:

- ☐ 339362028 ☐ ICP-06
- ☒ A42780077 ☐ GFAA-07
- ☐ ☐

Comments:

EMAX LABORATORIES, INC.

STANDARDS LOG FOR ICP-MS

Book No: SM6B-24

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
ICAL1	SM6A-23-01-02	10	0.1	0.001
ICAL2	↓ 01-03	↓	↓	↓
ICAL3	↓ 01-04	1000	↓	0.1
Zn	SM1A-018-17-10	↓	0.009	0.01
B	↓ 15-06	↓	↓	↓
Sr	SM6B-24-09-02	1.0	1.0	0.002
P	SM6A-007-06-03	100	0.5	0.05
Zr	↓ 05-06	↓	0.05	0.005
W	SM6A-23-01-09 LY 12/03/21	↓	0.02	0.002
Si	SM6A ~~-007-06-04~~ 01-08	1000	0.1	0.1
Hg	SM6B-24-10-02	0.25	0.4	0.0001
Au	SM6A-007-07-25	1000	2.0	2.0
				LY 12/03/21

Standard ID	SM6B-24-10-01
Name	MRL1
Final Volume (mL)	1000
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Preservative #1	HNO3
ID	SWIA-011-02-05
Volume (mL)	~~15~~ 30 LY 12/03/21
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	10
Prep. Date	12/03/21
Exp. Date	01/27/22
Prepared By	LY

Micropipette ID:

- ☒ 339362028
- ☒ A42780077
- ☐
- ☒ ICP-06
- ☒ GFAA-07
- ☐

Comments:

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
Hg	SM6A-007-06-05	100	0.125	0.25
Au	↓ 07-25	1000	0.1	2.0
				LY 12/07/21

Standard ID	SM6B-24-10-02
Name	Hg @ 0.25 ppm
Final Volume (mL)	50
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Preservative #1	HNO3
ID	SWIA-011-02-05
Volume (mL)	1.5
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	0.5
Prep. Date	12/03/21
Exp. Date	03/03/22
Prepared By	LY

Micropipette ID:

- ☒ 339362028
- ☐ A42780077
- ☐
- ☒ ICP-06
- ☐ GFAA-07
- ☐

Comments:

EMAX LABORATORIES, INC.

STANDARDS LOG FOR ICP-MS

Book No: SM6B-22

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
Zn	SM1A-018-17-10	1000	0.05	1.0
				LY 11/04/21

Standard ID	SM6B-22-62-01
Name	Zn@1ppb ppm
Final Volume (mL)	50 LY 11/04/21
Solvent	Reagent Water
Solvent ID	SW1A-011-03-02
Preservative #1	HNO3
ID	SW1A-011-02-06
Volume (mL)	1.5
Preservative #2	HCl
ID	SW1A-009-17-09
Volume (mL)	0.5
Prep. Date	11/04/21
Exp. Date	02/04/~~21~~ 22
Prepared By	LY LY 11/04/21

Micropipette ID:

- ☐ 339362028
- ☑ ICP-06
- ☐ A42780077
- ☐ GFAA-07
- ☐
- ☐

Comments:

Parent Name	Parent Standard ID LY 11/04/21	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
Zr	SM6A-007-05-09 06	100	0.5	1.0
				LY 11/04/21

Standard ID	SM6B-22-62-02
Name	Zr@1ppm
Final Volume (mL)	50
Solvent	Reagent Water
Solvent ID	SW1A-011-03-02
Preservative #1	HNO3
ID	SW1A-011-02-06
Volume (mL)	1.5
Preservative #2	HCl
ID	SW1A-009-17-09
Volume (mL)	0.5
Prep. Date	11/04/21
Exp. Date	02/04/22
Prepared By	LY

Micropipette ID:

- ☑ 339362028
- ☐ ICP-06
- ☐ A42780077
- ☐ GFAA-07
- ☐
- ☐

Comments:

EMAX LABORATORIES, INC.

STANDARDS LOG FOR ICP-MS

Book No: SM6B-22

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
W	SM6A-23-01-09	100	0.5	1.0
				LY 11/04/21

Standard ID	SM6B-22-63-01
Name	W@1ppm
Final Volume (mL)	50
Solvent	Reagent Water
Solvent ID	SWIA-011-03-02
Preservative #1	HNO3
ID	SWIA-011-02-06
Volume (mL)	1.5
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	0.5
Prep. Date	11/04/21
Exp. Date	02/04/22
Prepared By	LY

Micropipette ID:

- ☒ 339362028
- ☒ ICP-06
- ☐ A42780077
- ☐ GFAA-07
- ☐
- ☐

Comments:

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
BDH	SWIA-011-03-02	NA	1000	NA
AU	SM6A-007-07-25	1000	2.0	2.0
				LY 11/04/21

Standard ID	SM6B-22-63-02
Name	SQ(6020)
Final Volume (mL)	1000
Solvent	Reagent Water
Solvent ID	SWIA-011-03-02
Preservative #1	HNO3
ID	SWIA-011-02-06
Volume (mL)	~~15~~ 30
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	~~0.5~~ 10
Prep. Date	11/04/21
Exp. Date	05/04/22
Prepared By	LY

LY 11/04/21

Micropipette ID:

- ☐ 339362028
- ☐ ICP-06
- ☒ A42780077
- ☐ GFAA-07
- ☐
- ☐

Comments:

EMAX LABORATORIES, INC.

STANDARDS LOG FOR ICP-MS

Book No: SM6B-22

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
ICAL1	SM6A-23-01-02	10	0.125	0.025
ICAL2	↓ 01-03	↓	↓	↓
CATMIX	SM6B-22-57-02	50|25	2.5	2.5|1.25
Zn	↓ 62-01	1.0	1.25	0.05
				LY 11/11/21

Standard ID	SM6B-22-72-01
Name	CCV-DWD
Final Volume (mL)	50
Solvent	Reagent Water
Solvent ID	SWIA-011-03-02
Preservative #1	HNO3
ID	SWIA-011-02-06
Volume (mL)	1.5
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	0.5
Prep. Date	11|11|21
Exp. Date	11|25|21
Prepared By	LY

Micropipette ID:

☒ 339362028 ☐ ICP-06

☒ A42780077 ☐ GFAA-07

☐ ☐

Comments:

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
ICAL1	SM6A-23-01-02	10	1.0	1.0
ICAL2	↓ 01-03	↓	↓	↓
ICAL3	↓ 01-04	1000	↓	100
				LY 11/15/21

Standard ID	SM6B-22-72-02
Name	MIX 7A
Final Volume (mL)	10
Solvent	Reagent Water
Solvent ID	SWIA-011-03-02
Preservative #1	HNO3
ID	SWIA-011-02-06
Volume (mL)	0.3
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	0.1
Prep. Date	11|15|21
Exp. Date	02|15|~~21~~ 22
Prepared By	LY LY 01|10|22

Micropipette ID:

☒ 339362028 ☐ ICP-06

☐ A42780077 ☐ GFAA-07

☐ ☐

Comments:

EMAX LABORATORIES, INC.

STANDARDS LOG FOR ICP-MS

Book No: SM6B-24

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
ICAL4	SM6A-23-01-05	mixed	2.5	mixed
ICAL5	↓ 01-06	↓	↓	↓
Zr	SM6A-007-05-06	100	0.0125	0.025
W	SM6A-23-01-09	↓	↓	↓
Mg	SM6B-22-44-02	2.5	0.05	0.0025
Au	SM6A-007-07-25	1000	0.1	2.0
				LY 12/03/21

Standard ID	SM6B-24-09-01
Name	CCV-200B
Final Volume (mL)	50
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Preservative #1	HNO_3
ID	SWIA-011-02-05
Volume (mL)	1.5
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	0.5
Prep. Date	12/03/21
Exp. Date	12/17/21
Prepared By	LY

Micropipette ID:

☑ 339362028	☑ ICP-06
☑ A42780077	☑ GFAA-07
☐	☐

Comments:

Parent Name	Parent Standard ID	Conc. (mg/L)	Aliquot (mL)	Final Conc. (mg/L)
Sr	SM1A-01B-15-04	1000	0.05	1.0
				LY 12/03/21

Standard ID	SM6B-24-09-02
Name	Sr @ 1ppm
Final Volume (mL)	50
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Preservative #1	HNO_3
ID	SWIA-011-02-05
Volume (mL)	1.5
Preservative #2	HCl
ID	SWIA-009-17-09
Volume (mL)	0.5
Prep. Date	12/03/21
Exp. Date	01/27/22 ~~03/03/21-22~~ LY 12/03
Prepared By	LY

Micropipette ID:

☐ 339362028	☑ ICP-06
☐ A42780077	☐ GFAA-07
☐	☐

Comments:

200.8 tune chk SM6A-23-01-11

rcvd. 09/22/21

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Certificate of Analysis

Certified Reference Material

Product Description: ICP-MS Tuning Solution 3

Product Number: **ICP-MS-TS-3-100**
Lot Number: **2029303-100**
Matrix: 2% HNO3
Purity: 99.98%-99.999%

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ISO 17034:2016 (RMP) Accreditation Certificate Number AR-1436

ilac-MRA

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO/IEC 17025:2005 Accreditation Certificate Number AT-1529

Certified Values:

Element	(µg/mL)	SRM ID
Be	10.0 ± 0.1	3105a
Co	10.0 ± 0.1	3113
In	10.0 ± 0.1	3124a
Mg	10.0 ± 0.1	3131a
Pb	10.0 ± 0.1	3128

Certified values are based on gravimetric and volumetric preparation, and verified against NIST SRM 3100 series when available via inductively coupled plasma optical emission spectrometry (ICP-OES) and/or inductively coupled plasma mass spectrometry (ICP-MS) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.
* Refer to Traceability Information, Section 4

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Expiration Information:

The expiry date is guaranteed to be valid for one year from the shipping date provided and is guaranteed through the month of expiration. For this reason, standards from the same lot may have different expiration dates.

Shipped Date: September 2021
Expiration Date: September 30, 2022
Certificate Issue Date: October 22, 2020

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SM6A-007-07-17 rcvd. 03/03/21 W

Agilent Technologies

Certificate of Analysis

ICP-MS Internal Std Mix

Agilent Part Number: 5188-6525 **Lot Number:** 55-155CRY2

Analyte	CAS#	Labeled Conc.	Measured Conc.	SRM	Start Mat'l Formula	Start Mat'l Purity	Analyte	CAS#	Labeled Conc.	Measured Conc.	SRM	Start Mat'l Formula	Start Mat'l Purity
Bi	7440-69-9	100 µg/mL	100 µg/mL	3106*	Bi	99.99+	Lu	7439-94-3	100 µg/mL	101 µg/mL	3130a*	Lu_2O_3	99.99+
Ge	7440-56-4	100 µg/mL	99.9 µg/mL	3120a*	GeO2	99.99+	Rh	7440-16-6	100 µg/mL	101 µg/mL	3144*	Rh(NO3)3-H2O	99.99+
In	7440-74-6	100 µg/mL	100 µg/mL	3124a*	In	99.99+	Sc	7440-20-2	100 µg/mL	99.7 µg/mL	3148a*	Sc_2O_3	99.99+
Li^6	7439-93-2	100 µg/mL	101 µg/mL	3129a*	$^6Li_2CO_3$	99.99+	Tb	7440-27-9	100 µg/mL	101 µg/mL	3157a*	Tb_4O_7	99.99+

* - indicates NIST SRM † - indicates CRM (when NIST SRM is not available)

Purity grades:

Starting Materials: Shown above

Matrix:

10% HNO_3: HNO_3 (CAS No. 7697-37-2) high purity grade

Traceability:

This standard has been produced gravimetrically and volumetrically using ISO 9001 quality procedures. Agilent ICP / ICP-MS Spectrometer was used to determine the concentration of the main elements via NIST SRMs shown above, as well as the impurities. Other reference standards used: 55-058CR, 55-089CR.

Trace Metallic Impurities in the Actual Solution, in µg/L, via Agilent ICP-MS Analysis, results are accurate to ±10%:

Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.
Ag	<0.2	Co	<0.2	Hf	<0.5	Nb	0.1	Ru	0.3	Ti	<0.3
Al	2	Cr	<0.3	Hg	<0.4	Nd	<0.07	Sb	<0.1	Tl	<0.5
As	9	Cs	<0.02	Ho	0.04	Ni	0.6	Se	<6	Tm	0.06
Au	<0.3	Cu	0.5	Ir	<20	P	<200	Si	<100	U	0.01
B	5	Dy	0.1	K	5	Pb	4	Sm	0.04	V	<0.2
Ba	2	Er	<0.07	La	0.09	Pd	0.2	Sn	0.2	W	<0.03
Be	<0.3	Eu	0.08	Mg	3	Pr	<0.02	Sr	2	Y	0.8
Ca	80	Fe	4	Mn	0.4	Pt	0.3	Ta	<0.07	Yb	0.6
Cd	<0.3	Ga	0.07	Mo	<0.04	Rb	0.5	Te	0.5	Zn	2
Ce	0.04	Gd	<0.04	Na	2	Re	<0.01	Th	0.6	Zr	2

Balances are calibrated regularly with weight sets traceable to NIST.

Agilent reference standards are guaranteed stable and accurate to ±0.5% of measured analyte concentration. This uncertainty is at 95% confidence interval, a coverage factor of 2. For these solutions we use the highest purity acids applicable, 18 megohm double deionized water and acid-leached, triple rinsed bottles. All glassware used is class A. This standard was manufactured following the guidelines set forth under ISO 17025 and ISO 17034 regulations.

Date of release: December 31, 2020

Date of expiration: June 30, 2022

Brijender S Tonk

QC Coordinator

Visit Agilent on the world wide web: www.agilent.com/chem/supplies

[CAL] SM6A-23-01-06 02
LY 09/09/24

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Certificate of Analysis

Certified Reference Material

Product Description: Special Mix

Product Number:	**SM-2208-001-250**
Lot Number:	**2122427-250**
Matrix:	2% HNO3 / Tr HF
Purity:	99.97%-99.9999%

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ISO 17034:2016 (RMP) Accreditation Certificate Number AR-1436

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ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO/IEC 17025:2005 Accreditation Certificate Number AT-1529

Certified Values:

Element	(µg/mL)	SRM ID	Element	(µg/mL)	SRM ID
As	10.0 ± 0.1	3103a	Sr	10.0 ± 0.1	3153a
B	10.0 ± 0.1	3107	Ti	10.0 ± 0.1	3162a
Mo	10.0 ± 0.1	3134	Tl	10.0 ± 0.1	3158
Sb	10.0 ± 0.1	3102a	V	10.0 ± 0.1	3165
Se	10.0 ± 0.1	3149	Zn	10.0 ± 0.1	3168a
Sn	10.0 ± 0.1	3161a			

Certified values are based on gravimetric and volumetric preparation, and verified against NIST SRM 3100 series when available via inductively coupled plasma optical emission spectrometry (ICP-OES) and/or inductively coupled plasma mass spectrometry (ICP-MS) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.
* Refer to Traceability Information, Section 4

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Expiration Information:

The expiry date is guaranteed to be valid for one year from the shipping date provided and is guaranteed through the month of expiration. For this reason, standards from the same lot may have different expiration dates.

Shipped Date: August 2021
Expiration Date: August 31, 2022
Certificate Issue Date: August 16, 2021

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ICAL 2 SMbA-23-01-03

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Certificate of Analysis

Certified Reference Material

Product Description: Special Mix

Product Number: **SM-2208-002-250**
Lot Number: **2122428-250**
Matrix: 2% HNO3
Purity: 99.96%-99.9996%

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER
ISO 17034:2016 (RMP) Accreditation Certificate Number AR-1436

ilac-MRA

ANAB ACCREDITED TESTING LABORATORY
ISO/IEC 17025:2005 Accreditation Certificate Number AT-1529

Certified Values:

Element	(µg/mL)	SRM ID	Element	(µg/mL)	SRM ID
Ag	10.0 ± 0.1	3151	Cu	10.0 ± 0.1	3114
Ba	10.0 ± 0.1	3104a	Li	10.0 ± 0.1	3129a
Be	10.0 ± 0.1	3105a	Mn	10.0 ± 0.2	3132
Cd	10.0 ± 0.1	3108	Ni	10.0 ± 0.1	3136
Co	10.0 ± 0.1	3113	Pb	10.0 ± 0.1	3128
Cr	10.0 ± 0.1	3112a	U	10.0 ± 0.1	3164

Certified values are based on gravimetric and volumetric preparation, and verified against NIST SRM 3100 series when available via inductively coupled plasma optical emission spectrometry (ICP-OES) and/or inductively coupled plasma mass spectrometry (ICP-MS) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.
* Refer to Traceability Information, Section 4

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Expiration Information:

The expiry date is guaranteed to be valid for one year from the shipping date provided and is guaranteed through the month of expiration. For this reason, standards from the same lot may have different expiration dates.

Shipped Date: August 2021
Expiration Date: August 31, 2022
Certificate Issue Date: August 16, 2021

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ICAL 3 SMBA-23-01-04

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Certificate of Analysis

Certified Reference Material

Product Description: Special Mix

Product Number:	**SM-2208-003-250**
Lot Number:	**2122431-250**
Matrix:	4% HNO3
Purity:	99.98%-99.9995%

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ISO 17034:2016 (RMP) Accreditation Certificate Number AR-1436

ilac-MRA

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO/IEC 17025:2005 Accreditation Certificate Number AT-1529

Certified Values:

Element	(µg/mL)	SRM ID
Al	1000 ± 6	3101a
Ca	1000 ± 6	3109a
Fe	1000 ± 6	3126a
K	1000 ± 10	3141a
Mg	1000 ± 6	3131a
Na	1000 ± 6	3152a

Certified values are based on gravimetric and volumetric preparation, and verified against NIST SRM 3100 series when available via inductively coupled plasma optical emission spectrometry (ICP-OES) and/or inductively coupled plasma mass spectrometry (ICP-MS) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.
* Refer to Traceability Information, Section 4

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Expiration Information:

The expiry date is guaranteed to be valid for one year from the shipping date provided and is guaranteed through the month of expiration. For this reason, standards from the same lot may have different expiration dates.

Shipped Date: August 2021
Expiration Date: August 31, 2022
Certificate Issue Date: August 16, 2021

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ICAL 4 SMBA-23-01-05

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Certificate of Analysis

Certified Reference Material

Product Description: Special Mix

Product Number: **SM-2208-005-A-500**
Lot Number: **2122405-500**
Matrix: 2% HNO3
Purity: 99.0%-99.9999%

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ISO 17034:2016 (RMP) Accreditation Certificate Number AR-1436

ilac-MRA

ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO/IEC 17025:2005 Accreditation Certificate Number AT-1529

Certified Values:

Element	(mg/L)	SRM ID	Element	(mg/L)	SRM ID
Al	500 ± 5	3101a	Mg	500 ± 5	3131a
As	5.00 ± 0.05	3103a	Mn	30.0 ± 0.5	3132
B	1.00 ± 0.01	3107	Na	500 ± 5	3152a
Ba	10.0 ± 0.1	3104a	Ni	5.00 ± 0.05	3136
Be	0.50 ± 0.01	3105a	P	5.00 ± 0.08	3139a
Ca	500 ± 5	3109a	Pb	5.00 ± 0.05	3128
Cd	5.00 ± 0.05	3108	Se	5.00 ± 0.05	3149
Co	5.00 ± 0.05	3113	Sr	5.00 ± 0.05	3153a
Cr	5.00 ± 0.05	3112a	Tl	5.00 ± 0.05	3158
Cu	5.00 ± 0.05	3114	U	5.00 ± 0.05	3164
Fe	500 ± 5	3126a	V	5.00 ± 0.05	3165
K	500 ± 5	3141a	Zn	5.00 ± 0.05	3168a
Li	0.5 ± 0.01	3129a			

Certified values are based on gravimetric and volumetric preparation, and verified against NIST SRM 3100 series when available via inductively coupled plasma optical emission spectrometry (ICP-OES) and/or inductively coupled plasma mass spectrometry (ICP-MS) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor k is about 2.
* Refer to Traceability Information, Section 4

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Expiration Information:

The expiry date is guaranteed to be valid for twelve months from the shipping date provided and is guaranteed through the month of expiration. For this reason, standards from the same lot may have different expiration dates.

Shipped Date: August 2021
Expiration Date: August 31, 2022
Certificate Issue Date: August 16, 2021

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ICAL 5 SM6A-23-01-06

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Certificate of Analysis

Certified Reference Material

Product Description: Special Mix

Product Number: **SM-2208-005-B-500**
Lot Number: **2122406-500**
Matrix: 2% HNO3 / Tr HF
Purity: 99.98%-99.999%

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER
ISO 17034:2016 (RMP) Accreditation Certificate Number AR-1436

ilac-MRA

ANAB ACCREDITED TESTING LABORATORY
ISO/IEC 17025:2005 Accreditation Certificate Number AT-1529

Certified Values:

Element	(mg/L)	SRM ID
Ag	0.500 ± 0.005	3151
Mo	5.00 ± 0.05	3134
Sb	1.00 ± 0.01	3102a
Si	50.0 ± 0.5	3150
Sn	5.00 ± 0.05	3161a
Ti	5.00 ± 0.05	3162a

Certified values are based on gravimetric and volumetric preparation, and verified against NIST SRM 3100 series when available via inductively coupled plasma optical emission spectrometry (ICP-OES) and/or inductively coupled plasma mass spectrometry (ICP-MS) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.
* Refer to Traceability Information, Section 4

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Expiration Information:

The expiry date is guaranteed to be valid for twelve months from the shipping date provided and is guaranteed through the month of expiration. For this reason, standards from the same lot may have different expiration dates.

Shipped Date: August 2021
Expiration Date: August 31, 2022
Certificate Issue Date: August 16, 2021

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AU SM6A-007-07-25

INORGANIC VENTURES
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Christiansburg, VA 24073 - USA
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CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAU1
Lot Number:	R2-AU695955
Matrix:	10% (v/v) HCl
Value / Analyte(s):	1 000 µg/mL ea: Gold
Starting Material:	H[AuCl4]
Starting Material Lot#:	2340
Starting Material Purity:	99.9983%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 5 µg/mL

Density: 1.022 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**1002 ± 4 µg/mL** ICP Assay NIST SRM 3121 Lot Number: 991806
Assay Method #2	**1001 ± 5 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

exp. 07|20|2022 LY

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.029000	M	Eu	<	0.000210	O	Na		0.003300	M	Se	<	0.014000	M	Zn		0.000370
M	Al	<	0.001900	M	Fe		0.002100	M	Nb	<	0.000110	O	Si		0.003300	M	Zr	<	0.001700
M	As	<	0.005700	M	Ga	<	0.001100	M	Nd	<	0.000110	M	Sm	<	0.000110				
s	Au	<		M	Gd	<	0.000110	M	Ni	<	0.002500	M	Sn	<	0.001600				
M	B	<	0.005000	M	Ge	<	0.004300	M	Os	<	0.000110	M	Sr	<	0.000810				
M	Ba	<	0.001300	M	Hf	<	0.000310	O	P	<	0.052000	M	Ta	<	0.000110				
M	Be	<	0.000610	M	Hg	<	0.001200	M	Pb	<	0.001900	M	Tb	<	0.000110				
M	Bi	<	0.002700	M	Ho	<	0.000110	M	Pd		0.003600	M	Te	<	0.002600				
O	Ca		0.001400	M	In		0.000071	M	Pr	<	0.000110	M	Th	<	0.004100				
M	Cd	<	0.000410	M	Ir	<	0.000210	M	Pt		0.008800	M	Ti	<	0.003100				
M	Ce	<	0.000210	O	K	<	0.011000	M	Rb	<	0.001500	M	Tl	<	0.000110				
M	Co	<	0.000210	M	La	<	0.000110	M	Re	<	0.000110	M	Tm	<	0.000110				
O	Cr	<	0.005200	O	Li		0.000063	M	Rh	<	0.001500	M	U	<	0.000110				
M	Cs	<	0.000810	M	Lu	<	0.000110	M	Ru	<	0.001700	O	V	<	0.002700				
O	Cu		0.001000	O	Mg		0.000230	O	S	<	0.052000	M	W	<	0.003900				
M	Dy	<	0.000110	O	Mn	<	0.002100	M	Sb		0.003200	M	Y	<	0.000110				
M	Er	<	0.000110	M	Mo	<	0.001400	O	Sc	<	0.001400	M	Yb	<	0.000110				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 196.97 +3 6 Au(Cl)63

Chemical Compatibility -Stable in HCl, and HNO3, as the chloride complex. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels. 2-10 ppb Au is stable for #1day maximum in 1% HNO3 / LDPE container. 100 ppb is stable for #2 days maximum in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 10% HCl / LDPE container.

Au Containing Samples (Preparation and Solution) - Metal (Aqua Regia); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 197 amu	5 ppt	N/A	181Ta16O
ICP-OES 208.209 nm	0.04/0.01 µg/mL	1	Ir, Re
ICP-OES 242.795 nm	0.02/0.003 µg/mL	1	Mn, Os, Th, Ta, Pt, Co, F
ICP-OES 267.595 nm	0.03/0.003 µg/mL	1	Nb, Ta, U, Cr, Th, Rh, Ru

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 01, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- September 01, 2024

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



SM16A-007-06-03

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CERTIFICATE OF ANALYSIS

AccuTrace™ Reference Standard

Catalog No: ICP-MS-41W-0.01X-1
Description: Phosphorous ICP-MS Standard
Element: Phosphorus (P)
SRM: 3139a
Lot: 218035007
Matrix: Water
Hazards: *Refer to SDS for complete safety information*

GHS

Signal Word: Warning

Date Certified: Mar 7, 2018
Expiration: Mar 7, 2023
Density: 1.000 g/mL
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Certified Reference Material

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER AR-1463
ANAB ACCREDITED TESTING LABORATORY AT-1339
ilac-MRA

Certified Concentration: 100 µg/mL

Trace Elements in µg/mL

Ag	nd<0.02	Ce	nd<0.2	Gd	nd<0.02	Lu	nd<0.02	Pb	nd<0.2	Sc	nd<0.02	Ti	nd<0.02
Al	N/A	Co	nd<0.02	Ge	nd<0.2	Mg	nd<0.02	Pd	nd<0.2	Se	N/A	Tl	nd<0.2
As	nd<0.2	Cr	nd<0.02	Hf	nd<0.02	Mn	nd<0.02	Pr	nd<0.2	Si	nd<0.2	Tm	nd<0.02
Au	nd<0.02	Cs	N/A	Hg	nd<0.2	Mo	nd<0.02	Pt	nd<0.2	Sm	nd<0.2	U	nd<0.2
B	nd<0.2	Cu	N/A	Ho	nd<0.02	Na	nd<0.02	Rb	N/A	Sn	nd<0.02	V	nd<0.02
Ba	nd<0.02	Dy	nd<0.02	In	nd<0.2	Nb	nd<0.2	Re	nd<0.2	Sr	nd<0.02	W	nd<0.2
Be	nd<0.02	Er	nd<0.02	Ir	N/A	Nd	nd<0.02	Rh	nd<0.2	Ta	nd<0.2	Y	nd<0.02
Bi	nd<0.2	Eu	nd<0.02	K	nd<0.2	Ni	nd<0.02	Ru	nd<0.02	Tb	nd<0.02	Yb	nd<0.02
Ca	nd<0.02	Fe	nd<0.02	La	nd<0.02	Os	N/A	S	N/A	Te	nd<0.2	Zn	nd<0.02
Cd	nd<0.02	Ga	nd<0.02	Li	nd<0.02	P	*	Sb	nd<0.2	Th	nd<0.02	Zr	nd<0.02

This solution was assayed gravimetrically, using a balance calibrated against weight sets, ID #88270, traceable to NIST
The gravimetric uncertainty for this product is ±0.24%. The CRM uncertainty is ±2.4%.
In order to verify the concentration(s), the final solution was checked by plasma emission spectroscopy (ICP) against material traceable to the above listed NIST SRM(s).
We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as high purity acids and ASTM Type I 18 megohm deionized water.
All trace level elemental impurities were determined via plasma emission spectroscopy on the concentrate.
All weights are traceable through NIST, Test No. 822-275872-11
All glassware used in preparation is Class A and calibrated regularly.
All bottles are acid leached and triple rinsed with deionized water prior to use.
Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware. Keep bottle tightly capped.

Certified By: Meigan O'Leary
Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO 17034, ISO/IEC 17025 and certified to ISO 9001:2015

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SM6A-23-01-08

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CERTIFICATE OF ANALYSIS

AccuTrace™ Reference Standard

Catalog No: ICP-MS-52W-0.1X-1
Description: Silicon ICP-MS Standard
Element: Silicon (Si)
SRM: 3150
Lot: 221025136
Matrix: Water, tr HF
Hazards: *Refer to SDS for complete safety information*



Signal Word: Warning

Date Certified: Feb 24, 2021
Expiration: Feb 24, 2026
Density: 1.004 g/mL
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Certified Reference Material

ANAB ACCREDITED AR-1463 ANAB ACCREDITED AT-1339 ilac-MRA

Certified Concentration: 1000 µg/mL

Trace Elements in µg/mL

Ag	nd<0.02	Ce	nd<0.2	Gd	nd<0.02	Lu	nd<0.02	Pb	N/A	Sc	nd<0.02	Ti	nd<0.02
Al	N/A	Co	nd<0.02	Ge	nd<0.2	Mg	nd<0.02	Pd	nd<0.2	Se	N/A	Tl	nd<0.2
As	nd<0.2	Cr	nd<0.02	Hf	nd<0.02	Mn	nd<0.02	Pr	nd<0.2	Si	*	Tm	nd<0.02
Au	nd<0.02	Cs	N/A	Hg	nd<0.2	Mo	nd<0.02	Pt	nd<0.2	Sm	nd<0.2	U	nd<0.2
B	nd<0.2	Cu	nd<0.02	Ho	nd<0.02	Na	nd<0.02	Rb	N/A	Sn	N/A	V	nd<0.02
Ba	nd<0.02	Dy	nd<0.02	In	nd<0.2	Nb	nd<0.2	Re	nd<0.2	Sr	nd<0.02	W	nd<0.2
Be	nd<0.02	Er	nd<0.02	Ir	N/A	Nd	nd<0.02	Rh	nd<0.2	Ta	N/A	Y	nd<0.02
Bi	nd<0.2	Eu	nd<0.02	K	nd<0.2	Ni	N/A	Ru	nd<0.02	Tb	nd<0.02	Yb	nd<0.02
Ca	nd<0.02	Fe	N/A	La	nd<0.02	Os	N/A	S	N/A	Te	N/A	Zn	nd<0.02
Cd	N/A	Ga	nd<0.02	Li	nd<0.02	P	N/A	Sb	N/A	Th	nd<0.02	Zr	nd<0.02

This solution was assayed gravimetrically, using a balance calibrated against weight sets, ID #88270, traceable to NIST

The gravimetric uncertainty for this product is ±0.24%. The CRM uncertainty is ±2.4%.

In order to verify the concentration(s), the final solution was checked by plasma emission spectroscopy (ICP) against material traceable to the above listed NIST SRM(s).

We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as high purity acids and ASTM Type I 18 megohm deionized water.

All trace level elemental impurities were determined via plasma emission spectroscopy on the concentrate.

All glassware used in preparation is Class A.

All weights are traceable through NIST, Test No. 684/289871-17

All bottles are acid leached and triple rinsed with deionized water prior to use.

Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware. Keep bottle tightly capped.

Certified By: Meigan O'Leary
Meigan O'Leary, Inorganic QC Manager

Accustandard

Page 1 of 1

For use in routine laboratory analysis.

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CERTIFICATE OF ANALYSIS

AccuTrace™ Reference Standard

Catalog No: ICP-MS-71N-0.01X-1
Description: Zirconium ICP-MS Standard
Element: Zirconium (Zr)
SRM: 3169
Lot: 215095138-01
Matrix: 2-5% Nitric acid
Hazards: *Refer to SDS for complete safety information*



Signal Word: Danger

Date Certified: Oct 20, 2017
Expiration: Oct 20, 2022
Density: 1.011 g/mL
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO Guide 34 Scope of Accreditation: Yes

Certified Concentration: 100 µg/mL

Trace Elements in µg/mL

Ag	nd<0.02	Ce	nd<0.2	Gd	nd<0.02	Lu	N/A	Pb	nd<0.2	Sc	nd<0.02	Ti	nd<0.02
Al	nd<0.02	Co	nd<0.02	Ge	nd<0.2	Mg	nd<0.02	Pd	N/A	Se	nd<0.2	Tl	nd<0.2
As	nd<0.2	Cr	nd<0.02	Hf	nd<0.02	Mn	N/A	Pr	N/A	Si	nd<0.2	Tm	N/A
Au	nd<0.02	Cs	N/A	Hg	N/A	Mo	nd<0.02	Pt	N/A	Sm	nd<0.2	U	N/A
B	nd<0.2	Cu	N/A	Ho	N/A	Na	N/A	Rb	N/A	Sn	N/A	V	nd<0.02
Ba	nd<0.02	Dy	nd<0.02	In	N/A	Nb	nd<0.2	Re	N/A	Sr	nd<0.02	W	nd<0.2
Be	N/A	Er	N/A	Ir	nd<0.2	Nd	N/A	Rh	N/A	Ta	nd<0.2	Y	N/A
Bi	nd<0.2	Eu	N/A	K	nd<0.2	Ni	nd<0.02	Ru	nd<0.02	Tb	N/A	Yb	nd<0.02
Ca	nd<0.02	Fe	nd<0.02	La	nd<0.02	Os	N/A	S	N/A	Te	N/A	Zn	nd<0.02
Cd	nd<0.02	Ga	nd<0.02	Li	nd<0.02	P	N/A	Sb	nd<0.2	Th	N/A	Zr	*

This solution was assayed gravimetrically, using a balance calibrated against weight sets, ID #19305, traceable to NIST.

The gravimetric uncertainty for this product is ±0.24%.

In order to verify the concentration(s), the final solution was checked by plasma emission spectroscopy (ICP) against material traceable to the above listed NIST SRM(s).

We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as high purity acids and ASTM Type I 18 megohm deionized water.

All trace level elemental impurities were determined via plasma emission spectroscopy on the concentrate.

All glassware used in preparation is Class A and calibrated regularly.

All weights are traceable through NIST, Test No. 822-275872-11

All bottles are acid leached and triple rinsed with deionized water prior to use.

Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware.

We certify the accuracy of this standard to be ±0.5% of the stated value until its expiration date provided it is kept tightly capped and stored under the conditions stated above.

Certified By: Meigan O'Leary
Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

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AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001:2015

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CERTIFICATE OF ANALYSIS

AccuTrace™ Reference Standard

Catalog No: ICP-MS-65W-0.01X-1
Description: Tungsten ICP-MS Standard
Element: Tungsten (W)
SRM: 3163
Lot: 221045158
Matrix: Water, tr NH4OH
Hazards: *Refer to SDS for complete safety information*

None Required

Signal Word: Warning

Date Certified: May 4, 2021
Expiration: May 4, 2026
Density: 1.000 g/mL
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Certified Reference Material

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER ISO 17034 AR-1463
ANAB ACCREDITED TESTING LABORATORY ISO/IEC 17025 AT-1339
ilac-MRA

Certified Concentration: 100 µg/mL

Trace Elements in µg/mL

Ag	nd<0.02	Ce	nd<0.2	Gd	N/A	Lu	N/A	Pb	N/A	Sc	nd<0.02	Ti	N/A
Al	N/A	Co	N/A	Ge	N/A	Mg	N/A	Pd	nd<0.2	Se	N/A	Tl	N/A
As	N/A	Cr	N/A	Hf	nd<0.02	Mn	N/A	Pr	nd<0.2	Si	N/A	Tm	nd<0.02
Au	N/A	Cs	N/A	Hg	N/A	Mo	N/A	Pt	nd<0.2	Sm	nd<0.2	U	N/A
B	N/A	Cu	nd<0.02	Ho	nd<0.02	Na	N/A	Rb	N/A	Sn	N/A	V	nd<0.02
Ba	N/A	Dy	nd<0.02	In	N/A	Nb	N/A	Re	N/A	Sr	nd<0.02	W	*
Be	N/A	Er	nd<0.02	Ir	N/A	Nd	nd<0.02	Rh	N/A	Ta	N/A	Y	nd<0.02
Bi	N/A	Eu	nd<0.02	K	N/A	Ni	nd<0.02	Ru	nd<0.02	Tb	nd<0.02	Yb	nd<0.02
Ca	N/A	Fe	N/A	La	nd<0.02	Os	N/A	S	N/A	Te	N/A	Zn	N/A
Cd	N/A	Ga	nd<0.02	Li	nd<0.02	P	N/A	Sb	N/A	Th	N/A	Zr	N/A

This solution was assayed gravimetrically, using a balance calibrated against weight sets, ID #19305, traceable to NIST.

The gravimetric uncertainty for this product is ±0.24%. The CRM uncertainty is ±2.4%.

In order to verify the concentration(s), the final solution was checked by plasma emission spectroscopy (ICP) against material traceable to the above listed NIST SRM(s).

We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as high purity acids and ASTM Type I 18 megohm deionized water.

All trace level elemental impurities were determined via plasma emission spectroscopy on the concentrate.

All glassware used in preparation is Class A.

All weights are traceable through NIST, Test No. 684/289871-17

All bottles are acid leached and triple rinsed with deionized water prior to use.

Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware. Keep bottle tightly capped.

Certified By: Meigan O'Leary
Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO 17034, ISO/IEC 17025 and certified to ISO 9001:2015

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CERTIFICATE OF ANALYSIS

AccuTrace™ Reference Standard

Catalog No: ICP-MS-34N-0.01X-1
Description: Mercury ICP-MS Standard
Element: Mercury (Hg)
SRM: 3133
Lot: 218115112
Matrix: 2-5% Nitric acid
Hazards: *Refer to SDS for complete safety information*



Signal Word: Danger

Date Certified: Nov 26, 2018
Expiration: Nov 26, 2023
Density: 1.028 g/mL
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Certified Reference Material

ANAB ACCREDITED AR-1463 ANAB ACCREDITED AT-1339 ilac-MRA

Certified Concentration: 100 µg/mL

Trace Elements in µg/mL

Ag	nd<0.02	Ce	nd<0.2	Gd	nd<0.02	Lu	nd<0.02	Pb	nd<0.2	Sc	nd<0.02	Ti	nd<0.02
Al	nd<0.02	Co	nd<0.02	Ge	nd<0.2	Mg	nd<0.02	Pd	nd<0.2	Se	nd<0.2	Tl	nd<0.2
As	nd<0.2	Cr	nd<0.02	Hf	nd<0.02	Mn	nd<0.02	Pr	nd<0.2	Si	nd<0.2	Tm	nd<0.02
Au	nd<0.02	Cs	N/A	Hg	*	Mo	nd<0.02	Pt	nd<0.2	Sm	nd<0.2	U	nd<0.2
B	nd<0.2	Cu	N/A	Ho	nd<0.02	Na	nd<0.02	Rb	N/A	Sn	nd<0.02	V	nd<0.02
Ba	nd<0.02	Dy	nd<0.02	In	nd<0.2	Nb	nd<0.2	Re	nd<0.2	Sr	nd<0.02	W	nd<0.2
Be	nd<0.02	Er	nd<0.02	Ir	nd<0.2	Nd	nd<0.02	Rh	nd<0.2	Ta	N/A	Y	nd<0.02
Bi	nd<0.2	Eu	nd<0.02	K	nd<0.2	Ni	nd<0.02	Ru	nd<0.02	Tb	nd<0.02	Yb	nd<0.02
Ca	nd<0.02	Fe	N/A	La	nd<0.02	Os	N/A	S	N/A	Te	nd<0.2	Zn	nd<0.02
Cd	nd<0.02	Ga	nd<0.02	Li	nd<0.02	P	N/A	Sb	nd<0.2	Th	nd<0.02	Zr	nd<0.02

This solution was assayed gravimetrically, using a balance calibrated against weight sets, ID #88270, traceable to NIST

The gravimetric uncertainty for this product is ±0.24%. The CRM uncertainty is ±2.4%.

We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as high purity acids and ASTM Type I 18 megohm deionized water.

All weights are traceable through NIST, Test No. 684/289871-17

All glassware used in preparation is Class A and calibrated regularly.

Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware. Keep bottle tightly capped.

Certified By: Meigan O'Leary

Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO 17034, ISO/IEC 17025 and certified to ISO 9001:2015

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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	6020ICS-0A
Lot Number:	S2-MEB700788
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Chloride,
	2 000 µg/mL ea: Carbon,
	1 000 µg/mL ea: Calcium, Aluminum, Iron, Potassium, Magnesium, Sodium, Phosphorus, Sulfur,
	20 µg/mL ea: Titanium, Molybdenum

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	1 000 ± 4 µg/mL	Calcium, Ca	1 000 ± 4 µg/mL
Carbon, C	2 000 ± 4 µg/mL	Chloride, Cl	10 000.0 ± 50.0 µg/mL
Iron, Fe	1 000 ± 4 µg/mL	Magnesium, Mg	1 000 ± 4 µg/mL
Molybdenum, Mo	20.00 ± 0.10 µg/mL	Phosphorus, P	1 000 ± 6 µg/mL
Potassium, K	1 000 ± 4 µg/mL	Sodium, Na	1 000 ± 4 µg/mL
Sulfur, S	1 000 ± 4 µg/mL	Titanium, Ti	20.00 ± 0.13 µg/mL

Density: 1.031 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
C	Acidimetric	84L	84L
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mo	ICP Assay	3134	130418
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	M2-S657208
Ti	ICP Assay	3162a	130925

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.003000	M	Cu		0.009200	M	La	<	0.000110	M	Pr	<	0.000110	M	Ta	<	0.000610
s	Al	<		M	Dy	<	0.000110	O	Li		0.004300	M	Pt	<	0.000110	M	Tb	<	0.000110
O	As	<	0.022000	M	Er	<	0.000110	M	Lu	<	0.000110	M	Rb	<	0.008200	M	Te	<	0.001800
M	Au	<	0.002900	M	Eu	<	0.000110	s	Mg	<		M	Re	<	0.000110	M	Th	<	0.000110
M	B	<	0.001800	s	Fe	<		O	Mn		0.005200	M	Rh	<	0.000110	s	Ti	<	
M	Ba		0.003000	M	Ga		0.036000	s	Mo	<		M	Ru	<	0.000100	M	Tl	<	0.000110
M	Be	<	0.000310	M	Gd	<	0.000110	s	Na	<		s	S	<		M	Tm	<	0.000110
M	Bi	<	0.000310	M	Ge	<	0.001100	M	Nb	<	0.000110	M	Sb	<	0.000610	M	U	<	0.000110
s	Ca	<		M	Hf	<	0.000210	M	Nd	<	0.000410	M	Sc	<	0.000610	O	V	<	0.002100
M	Cd	<	0.029000	M	Hg	<	0.000300	O	Ni		0.002200	M	Se	<	0.002900	M	W	<	0.002400
M	Ce	<	0.000110	M	Ho	<	0.000110	M	Os	<	0.000700	O	Si	<	0.021000	M	Y	<	0.000210
M	Co		0.001400	M	In	<	0.000110	s	P	<		M	Sm	<	0.000110	M	Yb	<	0.000110
M	Cr		0.023000	M	Ir	<	0.000100	M	Pb	<	0.000110	M	Sn	<	0.000810	M	Zn		0.002800
M	Cs	<	0.000510	s	K	<		M	Pd	<	0.000110	O	Sr		0.009100	M	Zr		0.001700

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 08, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- January 08, 2025

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



SMIA-018-17-05
Rec 5/24/21 NT
Exp 11/18/22

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-10M11

Aluminum (Al) – 10,000 µg/mL

Lot #: 1077245-30

Matrix: 10% HNO_3

Element	Certified Concentration & Uncertainty
Al	10,010 ± 50 µg/mL (w/v)
	9402 ± 48 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034, ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.999% pure aluminum nitrate [$Al(NO_3)_3$]. The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3101a, lot #140903**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Ce	<2	Gd	<2	Lu	<2	Pb	<10	Se	<20	Tl	<5
Al	MAJOR	Co	<10	Ge	<5	Mg	76	Pd	<5	Si	<1000	Tm	<2
As	<20	Cs	<5	Hf	<2	Mn	<10	Pr	<2	Sm	<2	U	<5
Au	<5	Cr	24	Hg	<5	Mo	<5	Pt	<5	Sn	<5	V	<10
B	<50	Cu	<10	Ho	<2	Na	830	Rb	<5	Sr	120	W	<5
Ba	<10	Dy	<2	In	nd	Nb	<5	Re	<2	Ta	<5	Y	<5
Be	<5	Er	<2	Ir	<2	Nd	<2	Rh	<5	Tb	<5	Yb	<2
Bi	<2	Eu	<2	K	<250	Ni	<20	Ru	<5	Te	<10	Zn	<20
Ca	<250	Fe	<100	La	<5	Os	<5	Sb	<5	Th	<5	Zr	<5
Cd	<5	Ga	265	Li	<20	P	<1000	Sc	<50	Ti	<20		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

May 18, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

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REPORT OF ANALYSIS

Single-Element Aqueous RM

SMA-018-13-08

Re c 8/4/20

Product #: S4400-100023

Antimony (Sb) – 1000 µg/mL

Lot #: 1045232-19

exp 1/27/22

Matrix: 5% HNO_3/0.1% HF

Element	Certified Concentration
Sb	**990 µg/mL**

Intended Use: This solution is intended for use as a reference material (RM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This RM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This RM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using pure antimony (Sb) metal dissolved in high purity nitric acid (HNO_3), hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this RM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration was determined based upon gravimetric procedures. Secondary verification of the certified concentration was performed using ICP-OES and is traceable to **NIST SRM 3102a**. The uncertainty associated with the certified concentration is ±0.5% relative, which is the sum of the estimated errors due to the purity of the raw materials, the gravimetric preparation of the solution, and transpiration through the container. This represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the RM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original RM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020

Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Arsenic (As) – 1000 µg/mL SMIA-018-13-09

Rec 8/4/20

Matrix: 2% HNO_3

Product #: S4400-100031

Lot #: 1034904-74

Exp 1/27/22

Element	Certified Concentration & Uncertainty
As	1006 ± 4 µg/mL (w/v)
	993 ± 4 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.99% pure arsenic (As) metal. The solution was diluted with filtered (0.22 µm), 18 M-ohm deionized water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3103a, lot #100818**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	1	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	1	Te	<1
Al	3	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	MAJOR	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	21	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020

Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-100041

Barium (Ba) – 1000 µg/mL SMA-018-13-10

Lot #: 994634-117

Matrix: 2% HNO_3

Rec 8/4/20 TH

Exp 1/27/22

Element	Certified Concentration & Uncertainty
Ba	1002 ± 3 µg/mL (w/v)
	998 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure barium nitrate [$Ba(NO_3)_2$] dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3104a, lot #140909**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	13	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	0.7	V	<1
Ba	MAJOR	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	11	Y	2
Ca	<25	Fe	<10	La	2	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020

Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

SM1A-016-14-01

Product #: S4400-100051

Beryllium (Be) – 1000 µg/mL

Rec 8/4/20

Lot #: 1072683-17

Exp 1/28/22

Matrix: 2% HNO_3

Element	Certified Concentration & Uncertainty
Be	999.0 ± 5.0 µg/mL (w/v)
	980.0 ± 5.0 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to, **ISO 17034**, **ISO/IEC 17025** and **ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.99% pure beryllium acetate [$Be_4O(C_2H_3O_2)_6$]. The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3105a, lot #090514**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	0.5	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 28, 2020

Certification Date

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CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM SM/A-018-15-06 Product #: S4400-100074

Boron (B) – 1000 µg/mL Rec 8/4/20 TH Lot #: 1024903-58

Matrix: H_2O exp 1/27/22

Element	Certified Concentration & Uncertainty
B	1008 ± 2 µg/mL (w/v)
	1010 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.99% pure boric acid (H_3BO_3) dissolved and diluted with filtered (0.22µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3107, lot #110830**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	12	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	MAJOR	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020
Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-100081

Cadmium (Cd) – 1000 µg/mL SM1A-018-14-02

rec 8/4/20

Lot #: 1080470-4

exp 1/27/22

Matrix: 2% HNO_3

Element	Certified Concentration & Uncertainty
Cd	1002 ± 4 µg/mL (w/v)
	999.0 ± 4 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure cadmium (Cd) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3108, lot #130116**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	99	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	0.6	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	MAJOR	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020

Certification Date

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SMIA-018-17-06
Rec 5/24/21 HT
Exp 11/18/22

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-10M91

Calcium (Ca) – 10,000 µg/mL

Lot #: 1072921-36

Matrix: 4% HNO_3

Element	Certified Concentration & Uncertainty
Ca	10,040 ± 20 µg/mL (w/v)
	9657 ± 20 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034, ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.999% pure calcium carbonate ($CaCO_3$). The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3109a, lot #130213**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Lu	<2	P	<1000	Sb	<5	Te	<10
Al	31	Cs	<5	Hf	<2	Mg	<50	Pb	<10	Sc	<50	Ti	<20
As	<20	Cr	<5	Hg	<5	Mn	<10	Pd	<5	Se	<20	Tl	<5
Au	<5	Cu	<10	Ho	<2	Mo	<5	Pr	<2	Si	<1000	Tm	<2
B	<50	Dy	<2	In	nd	Na	<250	Pt	<5	Sm	<2	V	<10
Ba	<10	Er	<2	Ir	<2	Nb	<5	Rb	<5	Sn	<5	W	<5
Bi	<2	Eu	<2	K	<250	Nd	<2	Re	<2	Sr	302	Y	<5
Ca	MAJOR	Fe	<100	La	<5	Ni	<20	Rh	<5	Ta	<5	Yb	<2
Cd	<5	Ga	<5	Li	<20	Os	<5	Ru	<5	Tb	<5	Zn	<20
Ce	<2	Gd	<2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

May 18, 2021
Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-1000121

Chromium (Cr) – 1000 µg/mL SMIA-018-14-04

rec 8/14/20

Lot #: 1011874-53

exp 1/27/22

Matrix: 2% HNO_3

Element	Certified Concentration & Uncertainty
Cr	1000 ± 3 µg/mL (w/v)
	992 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.996% pure chromium (Cr) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3112a, lot #030730**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	MAJOR	Hg	2	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	2	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	2
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020

Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Cobalt (Co) – 1000 µg/mL

Matrix: 2% HNO_3

SM1A-018-13-06

rec 6/23/20 TH

Product #: S4400-1000131

Lot #: 1024904-64

Element	Certified Concentration & Uncertainty
Co	999 ± 3 µg/mL (w/v)
	995 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.998% pure cobalt (Co) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3113, lot #000630**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	MAJOR	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	4	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	5
As	52	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	4	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	3	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

June 16, 2020

Certification Date

→ exp. date 12/16/2021

* re-certified new expiration date: 06/14/22

by 12/14/21

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-1000141

Copper (Cu) – 1000 µg/mL SMA-018-14-05

Lot #: 1019652-87

Matrix: 2% HNO_3

Rec 8/4/20

Rec 1/23/22
Exp.

Element	Certified Concentration & Uncertainty
Cu	991 ± 3 µg/mL (w/v)
	984 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034, ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9999% pure copper (Cu) metal. The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3114, lot #121207**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	MAJOR	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020

Certification Date

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SM1A-018-17-07
Rec 5/24/21 NT
Exp 11/18/22

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-10M261

Iron (Fe) – 10,000 µg/mL

Lot #: 1114187-4

Matrix: 4% HNO_3

Element	Certified Concentration & Uncertainty
Fe	**10,040 ± 30 µg/mL (w/v)**
	9648 ± 32 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034**, **ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.999% pure iron nitrate nonahydrate [$Fe(NO_3)_3$]. The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3126a, lot #140812**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	46	Ge	<5	Lu	<2	P	<1000	Sb	<5	Te	<10
Al	<20	Cs	<5	Hf	<2	Mg	<50	Pb	<10	Sc	<50	Ti	<20
As	<20	Cr	35	Hg	<5	Mn	<10	Pd	<5	Se	<20	Tl	<5
Au	<5	Cu	<10	Ho	<2	Mo	<5	Pr	<2	Si	<1000	Tm	<2
B	<50	Dy	<2	In	nd	Na	<250	Pt	<5	Sm	<2	V	<10
Ba	<10	Er	<2	Ir	<2	Nb	<5	Rb	<5	Sn	<5	W	<5
Bi	3	Eu	<2	K	<250	Nd	<2	Re	<2	Sr	<10	Y	<5
Ca	<250	Fe	MAJOR	La	<5	Ni	<20	Rh	<5	Ta	<5	Yb	<2
Cd	<5	Ga	<5	Li	<20	Os	<5	Ru	<5	Tb	<5	Zn	<20
Ce	<2	Gd	<2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

May 18, 2021
Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-1000281

Lead (Pb) – 1000 µg/mL SM1A-018-14-03

Lot #: 1046594-29

Matrix: 2% HNO_3

Rec 8/14/20

exp ~~exp~~ 1/27/22

7/8/14/20

Element	Certified Concentration & Uncertainty
Pb	994.0 ± 2.0 µg/mL (w/v)
	992.0 ± 2.0 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034**, **ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure lead (Pb) metal. The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3128, lot #101026**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	MAJOR	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020

Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

SM1A-018-18-01
Rec 6/23/21 TH

Product #: S4400-1000291

Lithium (Li) – 1000 µg/mL

Lot #: 1094768-6

Matrix: 3% HNO_3

Element	Certified Concentration & Uncertainty
Li	993 ± 5 µg/mL (w/v)
	983 ± 5 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034**, **ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure lithium carbonate (Li_2CO_3). The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3129a, lot #100714.** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	42	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	27	Cs	0.6	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	44	Pt	<0.5	Sm	<0.2	V	<1
Ba	2	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	0.7	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	2	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	MAJOR	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	3
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

expiry 9/15/22

March 15, 2021
Certification Date

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SM1A-018-17-09
Rec 5/24/21 NT
Exp 11/18/22

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-10M311

Magnesium (Mg) – 10,000 µg/mL

Lot #: 1075232-33

Matrix: 4% HNO_3

Element	Certified Concentration & Uncertainty
Mg	**9902 ± 42 µg/mL (w/v)**
	9424 ± 40 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034**, **ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.999% pure magnesium nitrate [$Mg(NO_3)_2$]. The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3131a, lot #140110**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Lu	<2	P	<1000	Sb	<5	Te	<10
Al	<20	Cs	<5	Hf	<2	Mg	MAJOR	Pb	<10	Sc	<50	Ti	<20
As	<20	Cr	<5	Hg	<5	Mn	19	Pd	<5	Se	<20	Tl	<5
Au	<5	Cu	<10	Ho	<2	Mo	<5	Pr	<2	Si	<1000	Tm	<2
B	<50	Dy	<2	In	nd	Na	<250	Pt	<5	Sm	<2	V	<10
Ba	103	Er	<2	Ir	<2	Nb	<5	Rb	<5	Sn	23	W	<5
Bi	<2	Eu	<2	K	<250	Nd	<2	Re	<2	Sr	<10	Y	<5
Ca	<250	Fe	<100	La	<5	Ni	<20	Rh	<5	Ta	<5	Yb	<2
Cd	<5	Ga	<5	Li	<20	Os	<5	Ru	<5	Tb	<5	Zn	<20
Ce	<2	Gd	<2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

May 18, 2021
Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-1000321

Manganese (Mn) – 1000 µg/mL SMIA-018-14-06 Rec 8/4/20 TH

Lot #: 1063019-13

exp 1/27/22

Matrix: 2% HNO_3

Element	Certified Concentration & Uncertainty
Mn	991.0 ± 6.0 µg/mL (w/v)
	986.0 ± 6.0 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034, ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure manganese (Mn). The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3132, lot #050429**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	3	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	43	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	17	Hg	<0.5	Mn	MAJOR	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	0.9	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020

Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

SM1A-018-14-07

Product #: S4400-1000343

Molybdenum (Mo) – 1000 µg/mL

rec 8/4/20

Lot #: 987189-75

exp 1/27/22

Matrix: 2% HNO_3/0.1% HF

Element	Certified Concentration & Uncertainty
Mo	997 ± 3 µg/mL (w/v)
	976 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034**, **ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure molybdenum (Mo). The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3134, lot #130418**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	3	Te	<1
Al	<2	Cs	<0.5	Hf	10	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	13	Cr	3	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	3	Ho	<0.2	Mo	MAJOR	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	1.4	Er	<0.2	Ir	3	Nb	<0.5	Rb	<0.5	Sn	1	W	35
Bi	0.25	Eu	<0.2	K	29	Nd	<0.2	Re	0.3	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	7	Rh	<0.5	Ta	7	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020

Certification Date

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REPORT OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-1000361

SM1A-018-14-08

Nickel (Ni) – 1000 µg/mL

rec 8/4/20 TH

Lot #: 1049780-3

exp 1/27/22

Matrix: 2% HNO_3

Element	Certified Concentration & Uncertainty
Ni	990.0 ± 5.0 µg/mL (w/v)
	982.0 ± 5.0 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034, ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.996% pure nickel (Ni) metal, The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3136 lot #120619**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	36	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	MAJOR	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020

Certification Date

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JMA-018-17-08
Rec 5/24/21 HT
Exp 11/18/22

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-10M411

Potassium (K) – 10,000 µg/mL

Lot #: 1053109-57

Matrix: 1% HNO_3

Element	Certified Concentration & Uncertainty
K	9958 ± 49 µg/mL (w/v)
	9715 ± 48 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034, ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.99% pure potassium nitrate (KNO_3). The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3141a, lot #140813**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Lu	<2	P	<1000	Sb	22	Te	<10
Al	<20	Cs	<5	Hf	<2	Mg	<50	Pb	86	Sc	<50	Ti	<20
As	<20	Cr	<5	Hg	<5	Mn	<10	Pd	<5	Se	<20	Tl	<5
Au	<5	Cu	<10	Ho	<2	Mo	<5	Pr	<2	Si	<1000	Tm	<2
B	<50	Dy	<2	In	nd	Na	<250	Pt	<5	Sm	<2	V	<10
Ba	<10	Er	<2	Ir	<2	Nb	<5	Rb	245	Sn	25	W	<5
Bi	67	Eu	<2	K	MAJOR	Nd	<2	Re	<2	Sr	<10	Y	<5
Ca	<250	Fe	<100	La	<5	Ni	<20	Rh	<5	Ta	<5	Yb	<2
Cd	<5	Ga	<5	Li	<20	Os	<5	Ru	<5	Tb	<5	Zn	<20
Ce	<2	Gd	<2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

May 18, 2021
Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-1000491

Selenium (Se) – 1000 µg/mL SM/A-018-14-09

Lot #: 1063158-14

Exp 1/27/22

Matrix: 2% HNO_3

Rec 8/4/20 TH

Element	Certified Concentration & Uncertainty
Se	1002 ± 5 µg/mL (w/v)
	989.0 ± 5.0 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034**, **ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure selenium (Se). The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3149, lot #100901**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	2	Pd	<0.5	Se	MAJOR	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	66	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	0.4	Eu	<0.2	K	<25	Nd	<0.2	Re	0.4	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020

Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-1000511

Silver (Ag) – 1000 µg/mL SM1A-018-14-10 Rec 8/4/20 TH

Lot #: 1026960-37 exp 1/27/22

Matrix: 2% HNO_3

Element	Certified Concentration & Uncertainty
Ag	1010 ± 4 µg/mL (w/v)
	1008 ± 4 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.99% pure silver (Ag) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3151, lot #160729**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	MAJOR	Co	13	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	0.7	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	2	Cu	2	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	3
Bi	0.9	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020

Certification Date

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Rec. 3/29/21 NT
SMA-018-17-02
Exp 9/24/22

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: 4400-10M521

Sodium (Na) – 10,000 µg/mL

Lot #: 1055526-35

Matrix: 3% HNO_3

Element	Certified Concentration & Uncertainty
Na	**9911 ± 46 µg/mL (w/v)**
	9623 ± 45 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034, ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.997% pure sodium carbonate (Na_2CO_3). The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3152a, lot #120715** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	103	Ge	<5	Lu	<2	P	<1000	Sb	<5	Te	<10
Al	40	Cs	<5	Hf	<2	Mg	<50	Pb	<10	Sc	<50	Ti	<20
As	<20	Cr	<5	Hg	<5	Mn	<10	Pd	<5	Se	<20	Tl	<5
Au	<5	Cu	<10	Ho	<2	Mo	6	Pr	<2	Si	<1000	Tm	<2
B	<50	Dy	<2	In	nd	Na	MAJOR	Pt	<5	Sm	<2	V	<10
Ba	<10	Er	<2	Ir	5	Nb	<5	Rb	13	Sn	23	W	<5
Bi	5	Eu	<2	K	<250	Nd	<2	Re	<2	Sr	<10	Y	<5
Ca	<250	Fe	<100	La	<5	Ni	<20	Rh	<5	Ta	<5	Yb	<2
Cd	<5	Ga	<5	Li	<20	Os	<5	Ru	<5	Tb	<5	Zn	<20
Ce	<2	Gd	<2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

March 24, 2021
Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM SMIA-018-15-04

Product #: S4400-1000531

Strontium (Sr) – 1000 µg/mL

rec 8/4/20 TH

Lot #: 998106-80

exp 1/27/22

Matrix: 2% HNO_3

Element	Certified Concentration & Uncertainty
Sr	996.0 ± 5.0 µg/mL (w/v)
	991.0 ± 5.0 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034**, **ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9965% pure strontium nitrate [$Sr(NO_3)_2$]. The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3153a, lot #990906**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	370	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	MAJOR	Y	1
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020

Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM SM1A-018-15-01 Product #: S4400-1000581

Thallium (Tl) – 1000 µg/mL Rec 8/4/20 TH Lot #: 1025512-26

Matrix: 2% HNO_3 exp 1/27/22

Element	Certified Concentration & Uncertainty
Tl	1009 ± 5 µg/mL (w/v)
	1005 ± 5 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using using 99.99% pure thallium (Tl) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3158, lot #151215**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	2	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	10	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	6	Mn	<1	Pd	<0.5	Se	<2	Tl	MAJOR
Au	<0.5	Cu	8	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020
Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM SM1A-018-15-02 Product #: S4400-1000613

Tin (Sn) – 1000 µg/mL Rec 8/4/20 TH Lot #: 1066479-3

Matrix: 2% HNO_3/0.5% HF exp 1/27/22

Element	Certified Concentration & Uncertainty
Sn	**1006 ± 5 µg/mL (w/v)**
	987.0 ± 5.0 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034**, **ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure tin (Sn) metal. The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3161a, lot #140917**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	52.09	Ge	<0.5	Lu	<0.2	P	<100	Sb	3.098	Te	<1
Al	<2	Cs	<0.5	Hf	0.6	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	1.07	Sn	MAJOR	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	4.422	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020
Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM SM1A-018-15-03 Product #: S4400-1000623

Titanium (Ti) – 1000 µg/mL rec 8/4/20 TH Lot #: 1038255-7

Matrix: 2% HNO_3/0.5% HF exp 1/27/22

Element	Certified Concentration & Uncertainty
Ti	998 ± 3 µg/mL (w/v)
	979 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034, ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.99+% pure titanium (Ti) metal. The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3162a, lot #130925**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	56	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	0.7	Te	<1
Al	9	Cs	<0.5	Hf	1	Mg	<5	Pb	<1	Sc	<5	Ti	MAJOR
As	<2	Cr	2	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	36	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	6
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	3	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	15	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020
Certification Date

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM SMA-018-15-07 Product #: S4400-1000641

Uranium (U) – 1000 µg/mL Lot #: 1062807-4

Rec 8/4/20 TH

Matrix: 2% HNO_3 exp 1/27/22

Element	Certified Concentration & Uncertainty
U	997.0 ± 3.0 µg/mL (w/v)
	988.0 ± 3.0 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034**, **ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using Uranyl (VI) Nitrate Hexahydrate. The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3164**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/mL)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	2	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	3	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	3	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	95
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020
Certification Date

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Health and Safety Information: Refer to the Safety Data Sheet (SDS).

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM SMIA-018-15-05 Product #: S4400-1000651

Vanadium (V) – 1000 µg/mL rec 8/4/20 TH Lot #: 1055682-10

Matrix: 2% HNO_3 exp 1/27/22

Element	Certified Concentration & Uncertainty
V	993.0 ± 3.0 µg/mL (w/v)
	983.0 ± 3.0 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034, ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.995% pure vanadium pentoxide (V_2O_5). The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3165, lot #160906**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	1	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	0.6	Te	<1
Al	13	Cs	0.6	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	21
As	<2	Cr	211	Hg	<0.5	Mn	11	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	0.7	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	MAJOR
Ba	2	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	6	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	155	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	0.9	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 27, 2020
Certification Date

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SMA-018-17-10
Rec 5/24/21 NT
Exp 11/18/22

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CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-1000681

Zinc (Zn) – 1000 µg/mL

Lot #: 1095528-6

Matrix: 2% HNO_3

Element	Certified Concentration & Uncertainty
Zn	998.0 ± 2.0 µg/mL (w/v)
	989.0 ± 2.0 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034**, **ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9999% pure zinc (Zn) metal. The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3168a, lot #120629**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	3	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	3	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	MAJOR
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

May 18, 2021
Certification Date

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Certificate of Analysis

Certified Reference Material

ANAB ACCREDITED ISO17034 REFERENCE MATERIAL PRODUCER
ISO 17034:2016 (RMP) Accreditation Certificate Number AR-1436

ilac-MRA

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO/IEC 17025:2005 Accreditation Certificate Number AT-1529

Product Description: Silicon

Product Number: **100050-3-100**
Lot Number: **2012025-100**
Matrix: 1% HNO3 / Tr HF
Density: 1.008 g/mL ± 0.002 g/mL @ 21.5°C ± 0.3°C

Certified Value:

Element	µg/mL	SRM ID
Si	1000 ± 5	3150

The Certified value is based on gravimetric and volumetric preparation, and verified against NIST SRM 3100 series when available via inductively coupled plasma optical emission spectrometry (ICP-OES) and/or inductively coupled plasma mass spectrometry (ICP-MS) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor k is about 2.
* Refer to Traceability Information, Section 4

Uncertified Values:

Trace Metal Impurity Scan: The data reported are based upon a scan of this specific lot via ICP-OES/ICP-MS analysis. The values are reported in µg/L.

Ag	<0.02	Cu	<0.02	Li	<0.02	Rb	<0.02	Th	<0.02
Al	2	Dy	<0.02	Lu	<0.02	Re	<0.02	Ti	12
As	<0.05	Er	<0.02	Mg	<0.6	Rh	<0.02	Tl	<0.02
Au	<0.02	Eu	<0.02	Mn	<0.3	Ru	<0.02	Tm	<0.02
B	<50	Fe	<1	Mo	<0.02	Sb	<0.2	U	<0.05
Ba	<0.6	Ga	<0.02	Na	<3	Sc	<0.02	V	<0.05
Be	<0.02	Gd	<0.02	Nb	<1	Se	<0.1	W	<0.02
Bi	<0.02	Ge	<1	Nd	<0.02	Si	M	Y	<0.02
Ca	<2	Hf	<0.02	Ni	<0.02	Sm	<0.02	Yb	<0.02
Cd	<1	Ho	<0.02	Os	<0.02	Sn	<0.5	Zn	<0.02
Ce	<0.02	In	<0.02	Pb	<0.05	Sr	<0.02	Zr	<0.2
Co	<0.05	Ir	<0.02	Pd	<0.02	Ta	na		
Cr	<0.05	K	<1	Pr	<0.02	Tb	<0.02		
Cs	<0.6	La	<0.02	Pt	<0.02	Te	<0.02		

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Expiration Information:

The expiry date is guaranteed to be valid for eighteen months from the shipping date provided and is guaranteed through the month of expiration. For this reason, standards from the same lot may have different expiration dates.

Shipped Date: February 2021
Expiration Date: August 31, 2022
Certificate Issue Date: May 13, 2020

Moven Mutuvari
Moven Mutuvari, Ph. D, VP Manufacturing

SM6A-007-07-10

rcvd. 10|26|20 LY

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: S4400-1000391

Phosphorus (P) – 1000 µg/mL

Lot #: 1032499-20

Matrix: 0.05% HNO_3

Element	Certified Concentration & Uncertainty
P	1001 ± 5 µg/mL

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034**, **ISO/IEC 17025** and **ISO 9001**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using phosphoric acid (H_3PO_4) diluted with filtered (0.22 µm), 18 M-ohm deionized water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3139a**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 14, 2020
Certification Date

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exp. 02|14|2022

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Europe
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The Netherlands

www.cpiinternational.com

SM6A-23-01-01
rcvd · 08|19|21 LY

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: 4400-100PPM691-100

Zirconium (Zr) – 100 µg/mL

Lot #: 10085420-5

Matrix: 2% HNO_3

Element	Certified Concentration & Uncertainty
Zr	**99.98 ± 0.50 µg/mL**

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034**, **ISO/IEC 17025** and **ISO 9001**. This CRM was prepared to a nominal concentration of 100 µg/mL by gravimetric methods using a single-element concentrate diluted with filtered (0.22 µm), 18 M-ohm deionized water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3169**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2021
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

Exp. 02|13|23 LY

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SMoA-007-05-16
Rvd. 08/29/18 LV

Agilent

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICP-074
Lot Number: CR-3874

Lot Issue Date: 24-Aug 2017
Expiration Date: 30-Sep 2024

Product Name: Tungsten ICP Standard

Description:
This Reference Material (RM) was gravimetrically prepared in accordance with ISO Guide 34 and under ULTRA Scientific's ISO 9001 registered quality system. The neat materials used for this product have been verified by ULTRA's ISO 17025 laboratory and under ULTRA's ISO Guide 34 accreditation. The analyte concentrations were verified by ULTRA's ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at the 95% confidence level, is reported below.

Analyte	Starting Material	Lot Number	Purity (%)	Analyte Concentration	Traceability & Method
tungsten	ammonium metatungstate	RM12633	99.999%	1000 ± 2 µg/mL	NIST SRM 3163; ICP-OES

Solvent: trace ammonium hydroxide in low TOC water (< 50 ppb)

Non-Certified Values:

Density: 0.9992 g/mL @ 20.00 ± 0.05°C

Trace Metallic Impurities in Solution Standard in µg/mL

*___	Al	<0.005 ND	*___	Ga	<0.005 ND	n___	Nb		n___	S	
*___	Sb	<0.005 ND	n___	Ge		n___	Os		n___	Ta	
*___	As	<0.005 ND	n___	Au		*___	Pd	<0.005 ND	n___	Te	
*___	Ba	<0.005 ND	n___	Hf		*___	P	<0.005 ND	n___	Tb	
*___	Be	<0.005 ND	n___	Ho		*___	Pt	<0.005 ND	*___	Tl	<0.005 ND
*___	Bi	<0.005 ND	*___	In	<0.005 ND	*___	K	<0.005 ND	*___	Th	<0.005 ND
*___	B	<0.005 ND	n___	Ir		n___	Pr		n___	Tm	
*___	Cd	<0.005 ND	*___	Fe	<0.005 ND	*___	Re		*___	Sn	<0.005 ND
*___	Cs	<0.005 ND	*___	La	<0.005 ND	*___	Rh	<0.005 ND	*___	Ti	<0.005 ND
*___	Ca	<0.005 ND	*___	Pb	<0.005 ND	n___	Rb		s___	W	
n___	Ce		*___	Li	<0.005 ND	n___	Ru		n___	U	
*___	Cr	<0.005 ND	n___	Lu		n___	Sm		*___	V	<0.005 ND
*___	Co	<0.005 ND	*___	Mg	<0.005 ND	n___	Sc		n___	Yb	
*___	Cu	<0.005 ND	*___	Mn	<0.005 ND	*___	Se	<0.005 ND	n___	Y	
n___	Dy		*___	Hg	<0.005 ND	*___	Si	<0.005 ND	*___	Zn	<0.005 ND
*___	Er	<0.005 ND	*___	Mo	<0.005 ND	*___	Ag	<0.005 ND	n___	Zr	
*___	Eu	<0.005 ND	n___	Nd		*___	Na	<0.005 ND			
*___	Gd	<0.005 ND	*___	Ni	<0.005 ND	*___	Sr	<0.005 ND			

* - element checked; i - spectral interference; n – element not checked; D – element detected; ND – element not detected; s - standard element

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER
ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

SM6A-007-07-15

rcvd. 01/25/21 LY

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: 4400-10PPM331-100

Mercury (Hg) – 10.0 µg/mL

Lot #: 1082269-9

Matrix: 2% HNO_3

Element	Certified Concentration & Uncertainty
Hg	10.00 ± 0.10 µg/mL (w/v)
	9.933 ± 0.100 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034, ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 10.0 µg/mL by gravimetric methods using single-element concentrate. The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3133, lot #160921**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	MAJOR	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

January 18, 2021

Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

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ICV1 SMOA-007-07-22

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843.767.7900 • info@highpuritystandards.com • www.highpuritystandards.com

Certificate of Analysis

Certified Reference Material

Product Description: Custom Inorganic Standard

Product Number:	**HPS-2208-006-500**
Lot Number:	**2111102-500**
Matrix:	2% HNO3 / Tr HF
Purity:	99.0%-99.9999%

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ISO 17034:2016 (RMP) Accreditation Certificate Number AR-1436

ilac-MRA

ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO/IEC 17025:2005 Accreditation Certificate Number AT-1529

Certified Values:

Element	(mg/L)	SRM ID	Element	(mg/L)	SRM ID
Ag	10.0 ± 0.1	3151	Ni	10.0 ± 0.1	3136
As	10.0 ± 0.1	3103a	Pb	10.0 ± 0.1	3128
B	10.0 ± 0.1	3107	Sb	10.0 ± 0.1	3102a
Ba	10.0 ± 0.1	3104a	Se	10.0 ± 0.1	3149
Be	10.0 ± 0.1	3105a	Sn	10.0 ± 0.1	3161a
Cd	10.0 ± 0.1	3108	Sr	10.0 ± 0.1	3153a
Co	10.0 ± 0.1	3113	Ti	10.0 ± 0.1	3162a
Cr	10.0 ± 0.1	3112a	Tl	10.0 ± 0.1	3158
Cu	10.0 ± 0.1	3114	U	10.0 ± 0.1	3164
Li	10.0 ± 0.1	3129a	V	10.0 ± 0.1	3165
Mn	10.0 ± 0.2	3132	Zn	20.0 ± 0.2	3168a
Mo	10.0 ± 0.1	3134			

Certified values are based on gravimetric and volumetric preparation, and verified against NIST SRM 3100 series when available via inductively coupled plasma optical emission spectrometry (ICP-OES) and/or inductively coupled plasma mass spectrometry (ICP-MS) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.
* Refer to Traceability Information, Section 4

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Expiration Information:

The expiry date is guaranteed to be valid for twelve months from the shipping date provided and is guaranteed through the month of expiration. For this reason, standards from the same lot may have different expiration dates.

Shipped Date: April 2021
Expiration Date: April 30, 2022
Certificate Issue Date: April 23, 2021

Moven Mututuvari
Moven Mututuvari, Ph.D, VP Manufacturing

ICV2 SM6A-007-07-23

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Certificate of Analysis

Certified Reference Material

Product Description: Interference Check Standard 7

Product Number:	**INFCS-7-500**
Lot Number:	**2111116-500**
Matrix:	5% HNO3
Purity:	99.98%-99.9995%
Density:	1.046 g/mL ± 0.002 g/mL @ 21.8°C ± 0.3°C

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ISO 17034:2016 (RMP) Accreditation Certificate Number AR-1436

ilac-MRA

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO/IEC 17025:2005 Accreditation Certificate Number AT-1529

Certified Values:

Element	(mg/L)	SRM ID
Al	1000 ± 6	3101a
Ca	1000 ± 6	3109a
Fe	1000 ± 6	3126a
K	1000 ± 10	3141a
Mg	1000 ± 10	3131a
Na	1000 ± 6	3152a

Certified values are based on gravimetric and volumetric preparation, and verified against NIST SRM 3100 series when available via inductively coupled plasma optical emission spectrometry (ICP-OES) and/or inductively coupled plasma mass spectrometry (ICP-MS) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor k is about 2.
* Refer to Traceability Information, Section 4

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Expiration Information:

The expiry date is guaranteed to be valid for one year from the shipping date provided and is guaranteed through the month of expiration. For this reason, standards from the same lot may have different expiration dates.

Shipped Date: April 2021
Expiration Date: April 30, 2022
Certificate Issue Date: April 23, 2021

Moven Mutuvari
Moven Mutuvari, Ph.D, VP Manufacturing

LABORATORY REPORT FOR

ARCADIS

PG&E TOPOCK-GMP

WET CHEMICAL ANALYSES

SDG#: 21L159A

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21L159A

METHOD E300.0
NITRATE AS N

A total of four(4) water samples were received on 12/15/21 to be analyzed for Nitrate As N in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Nitrate was not detected in ICL019WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICL019WL/ICL019WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

Sample L159-08 reported at dilution factor >1 was due to high conductivity. Refer to sample result form for details.

SAMPLE RESULTS

METHOD E300.0
NITRATE AS N

Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 21L159A

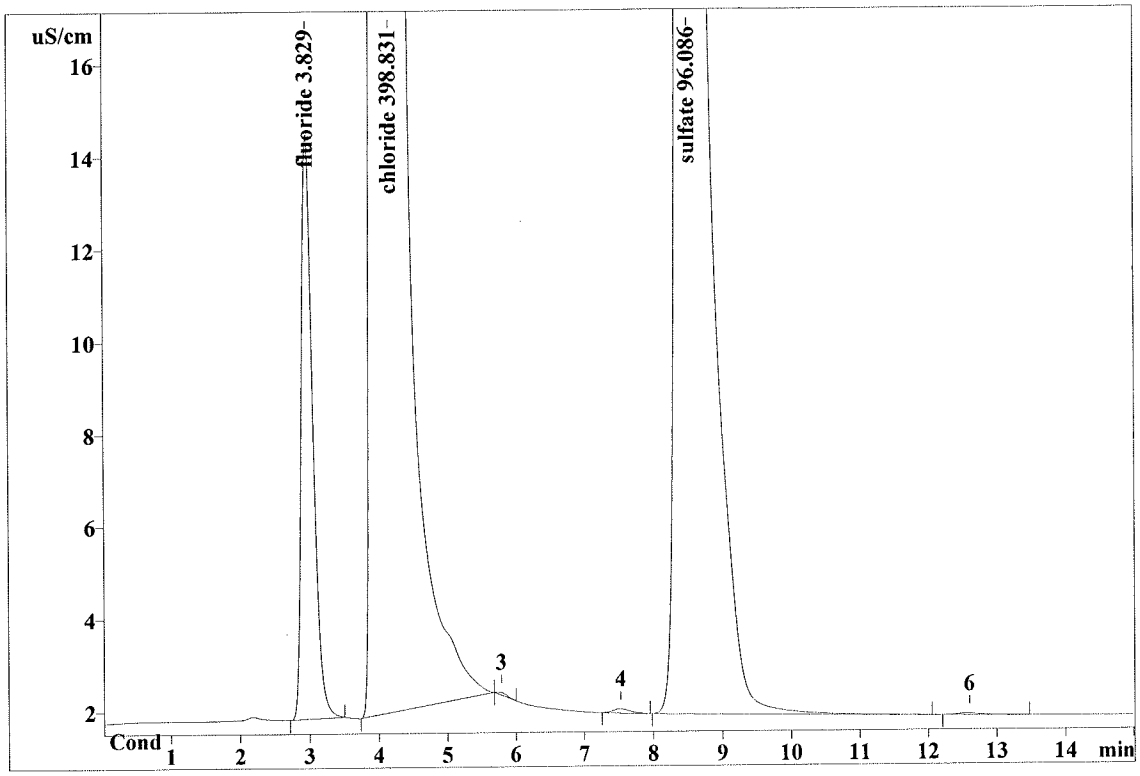
Matrix : WATER
InstrumentID : DO

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICL019WB	ND	1	NA	0.1	0.05	12/15/2110:42	NA	AL21-03	AL21-01	ICL019W	NA	NA
LCS1W	ICL019WL	0.981	1	NA	0.1	0.05	12/15/2110:59	NA	AL21-04	AL21-01	ICL019W	NA	NA
LCD1W	ICL019WC	0.960	1	NA	0.1	0.05	12/15/2111:16	NA	AL21-05	AL21-01	ICL019W	NA	NA
MW-92-037-Q421	L159-05	ND	1	NA	0.1	0.05	12/15/2112:50	NA	AL21-09	AL21-06	ICL019W	12/14/2109:04	12/15/21
MW-92-072-Q421	L159-06	0.469	1	NA	0.1	0.05	12/15/2113:07	NA	AL21-10	AL21-06	ICL019W	12/14/2108:36	12/15/21
MW-92-102-Q421	L159-07	1.23	1	NA	0.1	0.05	12/15/2113:24	NA	AL21-11	AL21-06	ICL019W	12/14/2108:08	12/15/21
MW-92-122-Q421	L159-08I	ND	5	NA	0.5	0.25	12/15/2113:42	NA	AL21-12	AL21-06	ICL019W	12/14/2107:38	12/15/21

Report date: 12/16/2021 9:54:51 AM
Printed by: VDuran

Ident: AL21-09 L159-05
Analysis from: 12/15/2021 12:50:47 PM
File: _2021-12-15_12-50.chw Last save: 12/15/2021 3:12:02 PM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176744

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 9
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.97	12.65	144.439	3.829	fluoride
2	4.17	604.91	9247.899	398.831	chloride
3	5.79	0.06	0.596	0.000	
4	7.52	0.09	1.589	0.000	
5	8.52	73.21	1529.895	96.086	sulfate
6	12.58	0.03	0.966	0.000	nitrate
6	15.00	690.96	10925.383	498.746	

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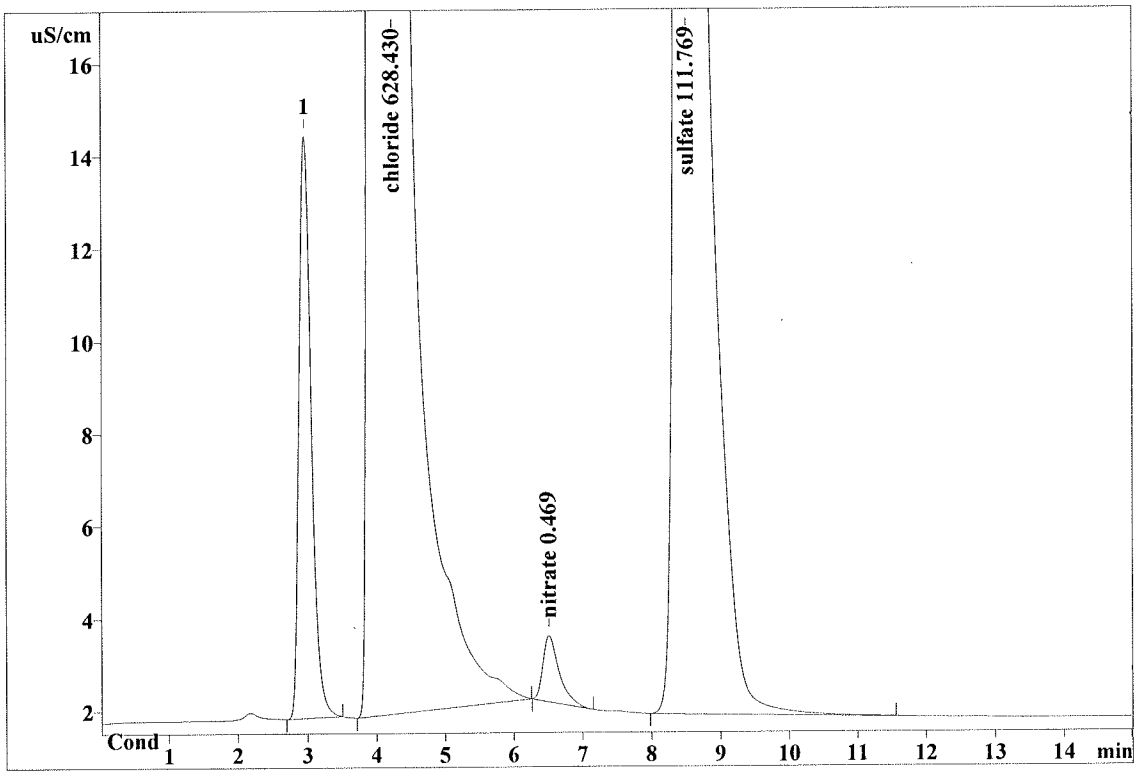
METROHM LTD

Report date: 12/16/2021 9:42:04 AM
Printed by: VDuran

Ident: AL21-10 L159-06
Analysis from: 12/15/2021 1:07:52 PM
File: _2021-12-15_13-07.chw Last save: 12/15/2021 3:12:33 PM

Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176745

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 10
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.96	12.58	154.793	0.000	
2	4.23	783.18	14572.727	628.430	chloride
3	6.51	1.43	23.491	0.469	nitrate
4	8.52	84.26	1780.036	111.769	sulfate
4	15.00	881.45	16531.046	740.668	

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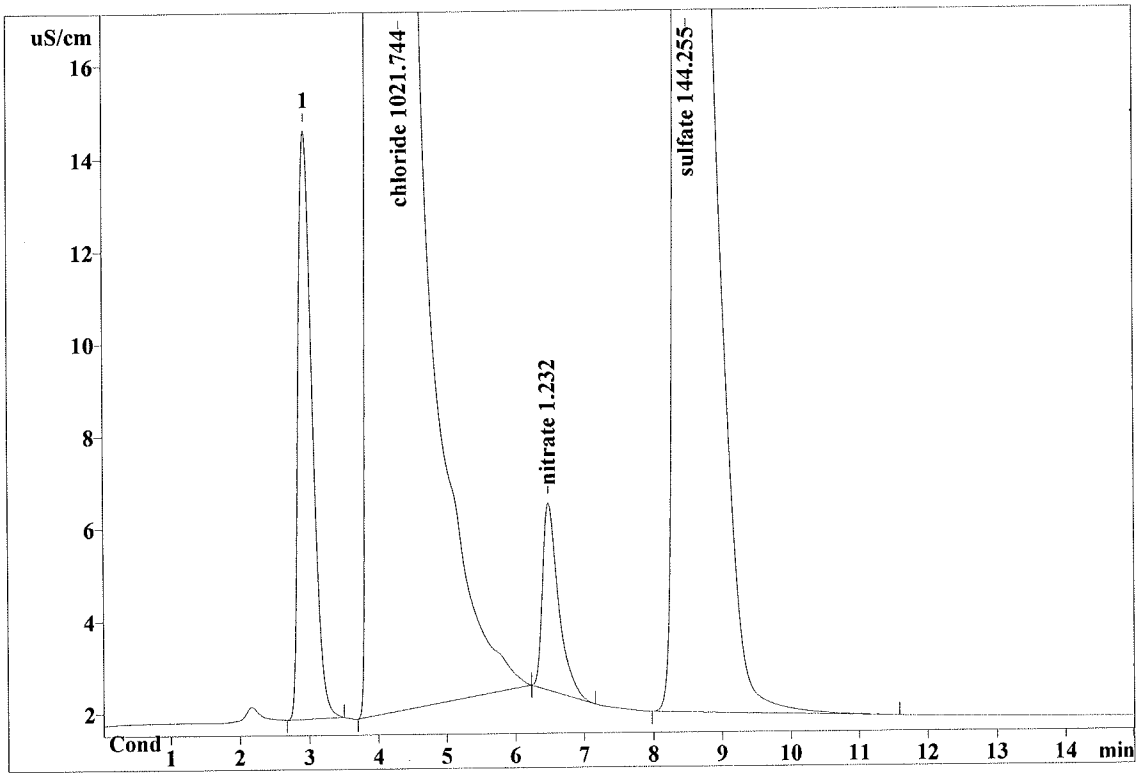
METROHM LTD

Report date: 12/16/2021 9:42:10 AM
Printed by: VDuran

Ident: AL21-11 L159-07
Analysis from: 12/15/2021 1:24:57 PM
File: _2021-12-15_13-24.chw Last save: 12/15/2021 3:12:50 PM

Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176746

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 11
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.95	12.74	180.243	0.000	
2	4.34	990.44	23694.390	1021.744	chloride
3	6.49	4.06	65.553	1.232	nitrate
4	8.52	107.92	2298.196	144.255	sulfate
4	15.00	1115.16	26238.383	1167.230	

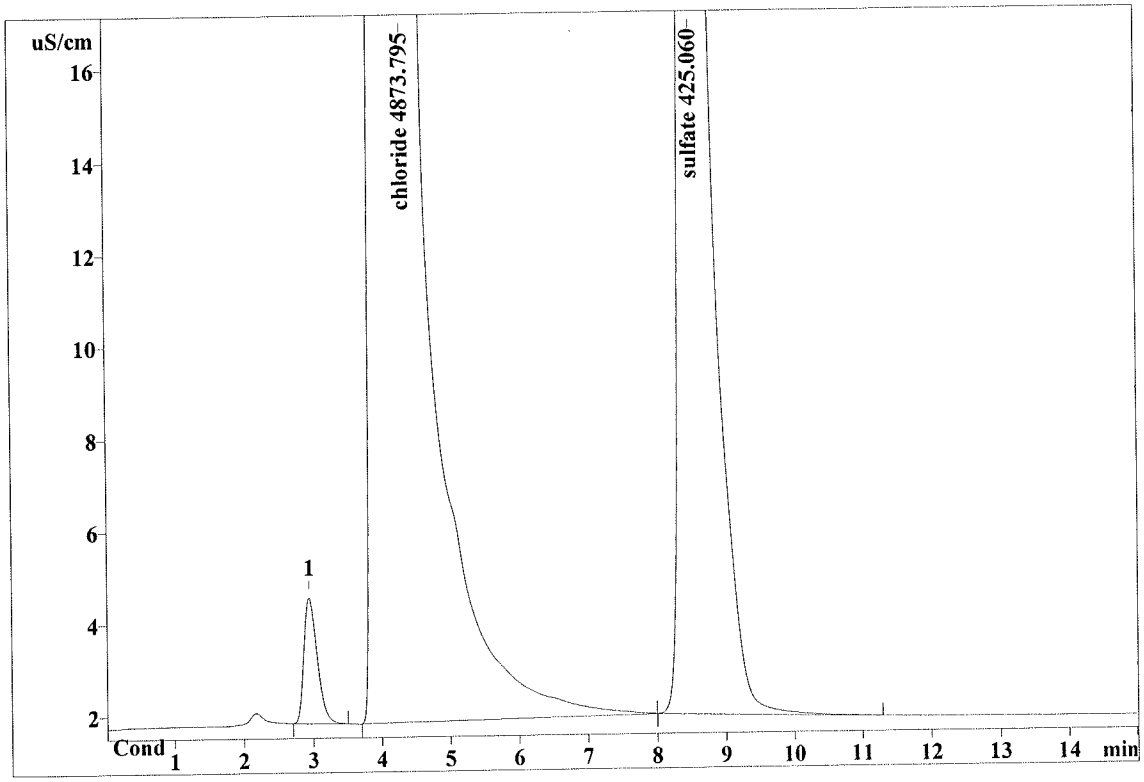
This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:42:16 AM
Printed by: VDuran

Ident: AL21-12 L159-08I DF=5
Analysis from: 12/15/2021 1:42:02 PM
File: _2021-12-15_13-42.chw Last save: 12/15/2021 3:13:00 PM

Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176747

SAMPLE: METHOD 300/9056/4110B
: 4ml/20ml, HIGH CONDUCTIVITY
Vial number: 12
Volume: 1.0 µL
Dilution: 5.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.95	2.72	36.657	0.000	
2	4.33	968.02	22604.731	4873.795	chloride
3	8.53	65.92	1353.256	425.060	sulfate
					nitrate
3	15.00	1036.66	23994.643	5298.855	

This report has been created by IC Net
METROHM LTD

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21L159A
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICL019WB	ICL019WL	ICL019WC
LAB FILE ID :	AL21-03	AL21-04	AL21-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	12/15/2110:42	12/15/2110:59	12/15/2111:16
PREP BATCH :	ICL019W	ICL019W	ICL019W
CALIBRATION REF:	AL21-01	AL21-01	AL21-01

ACCESSION:

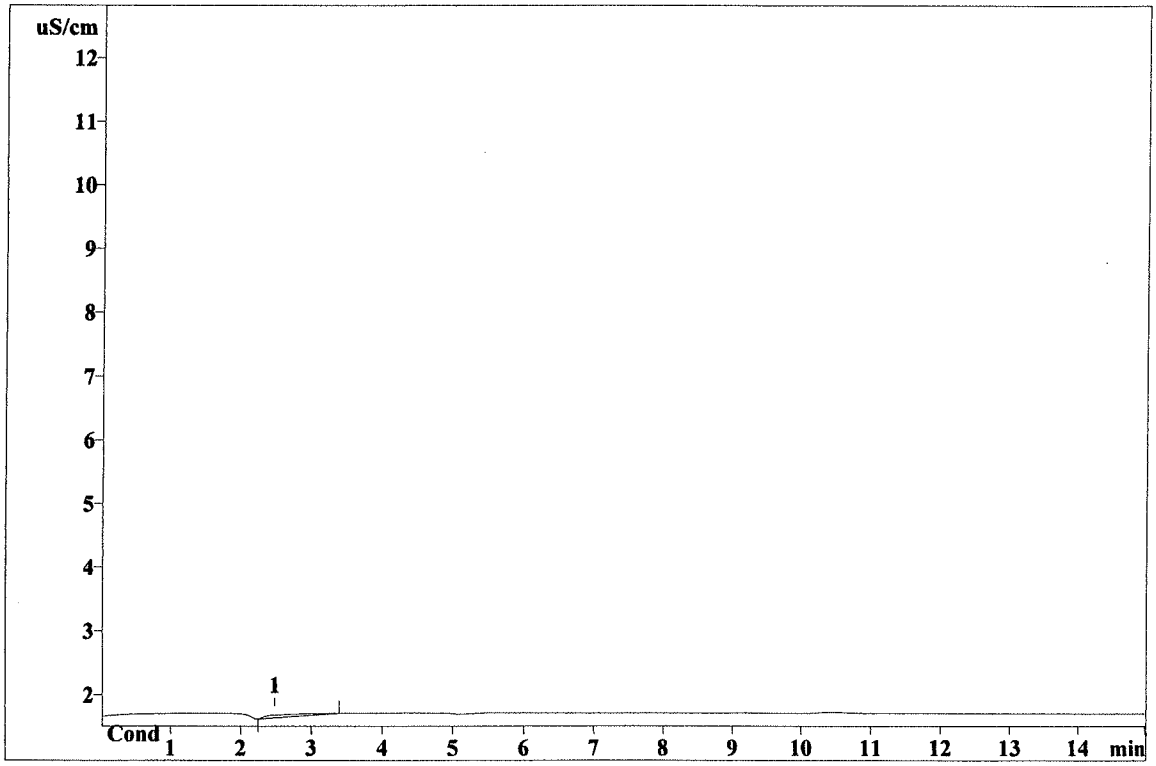
PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
NITRATE	ND	1	0.981	98	1	0.960	96	2	90-110	20

QC DATA

Report date: 12/16/2021 9:23:06 AM
Printed by: VDuran

Ident: AL21-03 ICL019WB
Analysis from: 12/15/2021 10:42:43 AM
File: _2021-12-15_10-42.chw Last save: 12/15/2021 10:57:39 AM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176738

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.47	0.04	1.854	0.000	

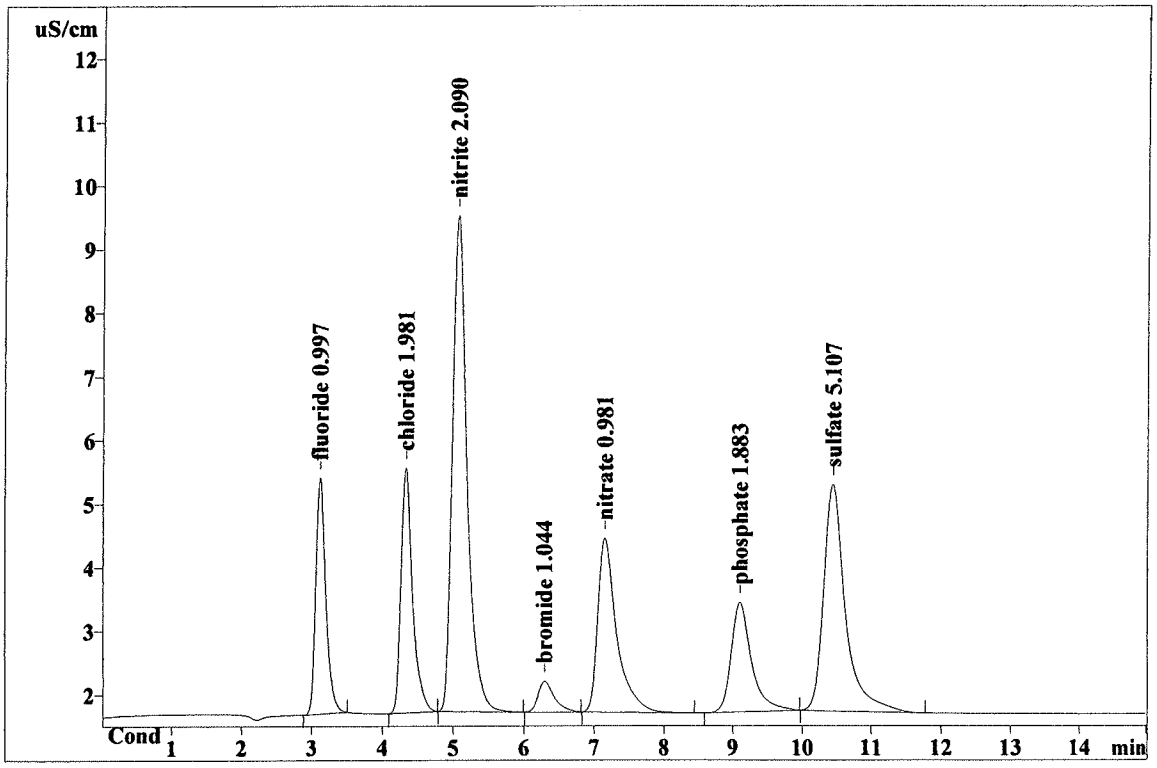
This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:23:13 AM
Printed by: VDuran

Ident: AL21-04 ICL019WL
Analysis from: 12/15/2021 10:59:47 AM
File: _2021-12-15_10-59.chw Last save: 12/15/2021 11:14:44 AM

Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176739

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	3.71	36.888	0.997	fluoride
2	4.33	3.85	44.207	1.981	chloride
3	5.06	7.79	112.495	2.090	nitrite
4	6.30	0.48	7.858	1.044	bromide
5	7.15	2.73	51.712	0.981	nitrate
6	9.10	1.72	35.061	1.883	phosphate
7	10.44	3.56	78.736	5.107	sulfate
7	15.00	23.85	366.956	14.082	

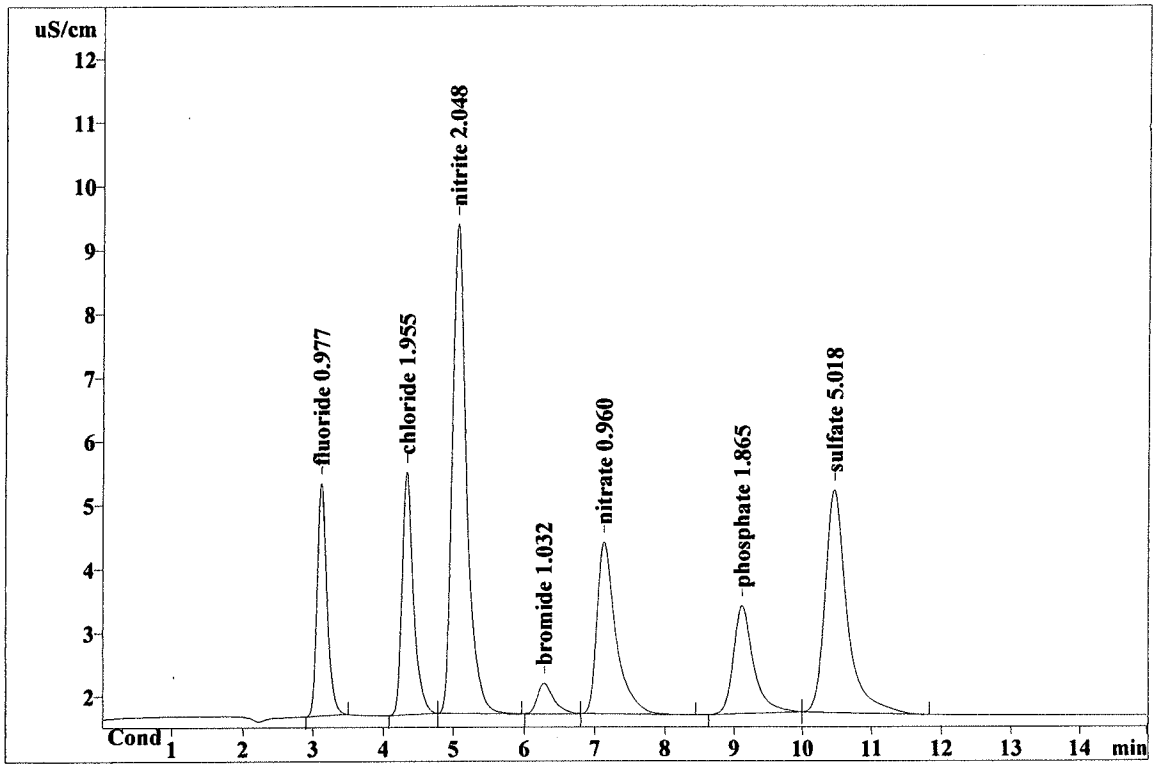
This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:23:15 AM
Printed by: VDuran

Ident: AL21-05 ICL019WC
Analysis from: 12/15/2021 11:16:52 AM
File: _2021-12-15_11-16.chw Last save: 12/15/2021 11:31:50 AM

Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176740

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	3.65	36.156	0.977	fluoride
2	4.33	3.81	43.608	1.955	chloride
3	5.05	7.68	110.237	2.048	nitrite
4	6.28	0.48	7.736	1.032	bromide
5	7.13	2.70	50.526	0.960	nitrate
6	9.11	1.71	34.702	1.865	phosphate
7	10.45	3.50	77.318	5.018	sulfate
7	15.00	23.52	360.284	13.855	

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INITIAL CALIBRATION(S)

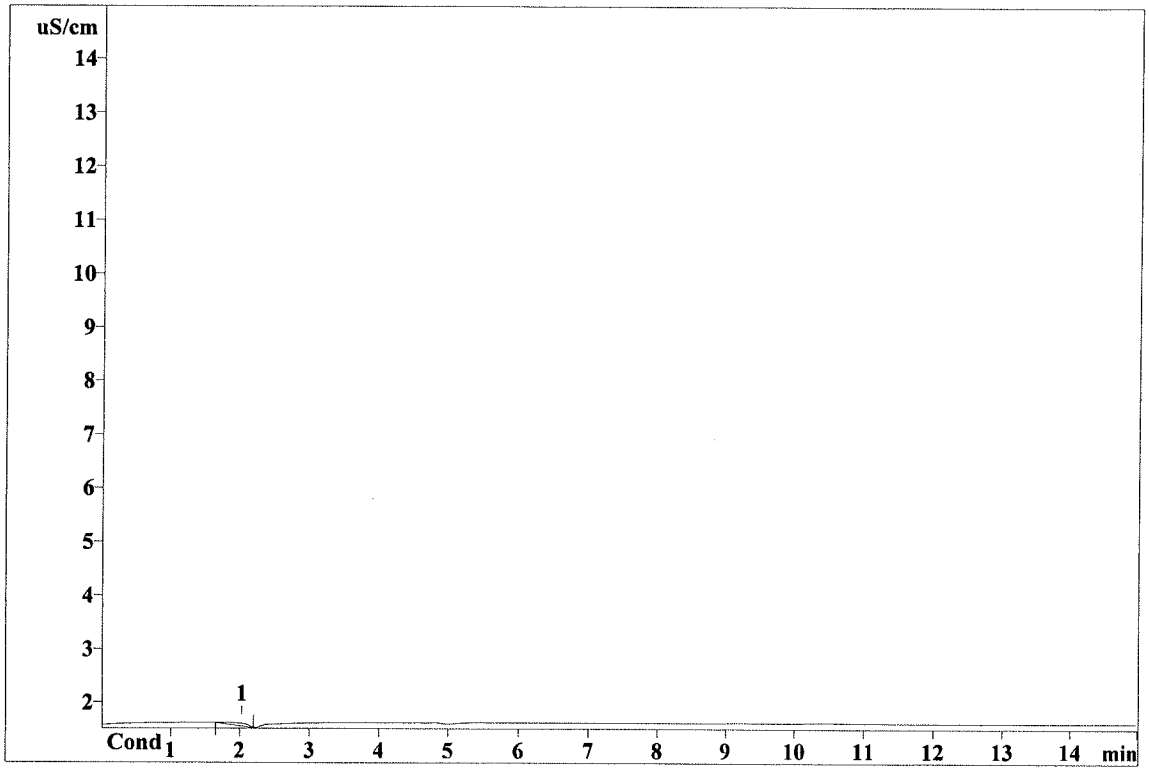
IC Result Check FormVersion : L13/AL17(2021)

LFID	LSID	Selection	iodide	chloride	fluoride	nitrite	bromide	nitrate	phosphate	sulfate	RawNetID	DF
AL17-01	IB	OCFIBNPS	0	0	0	0	0	0	0	0	_2021-12-13_16-35	1
AL17-02	S0	OCFIBNPS	0	0	0	0	0	0	0	0	_2021-12-13_16-52	1
AL17-03	S1	OCFIBNPS	0	0.118742	0.0744743	0.0412195	0	0.0754836	0.176058	0.213023	_2021-12-13_17-09	1
AL17-04	S2	OCFIBNPS	0	0.156887	0.11689	0.0837818	0.30631	0.113821	0.218631	0.268666	_2021-12-13_17-26	1
AL17-05	S3	OCFIBNPS	0	0.24031	0.202975	0.176601	0.388049	0.196874	0.287692	0.324742	_2021-12-13_17-43	1
AL17-06	S4	OCFIBNPS	0	0.491018	0.475978	0.461653	0.622434	0.468301	0.509316	0.57756	_2021-12-13_18-00	1
AL17-07	S5	OCFIBNPS	0	0.945304	0.9868	0.984586	1.04325	0.979737	0.921409	1.00281	_2021-12-13_18-17	1
AL17-08	S6	OCFIBNPS	0	1.87659	1.98161	2.01252	1.87186	2.01578	1.78478	1.85278	_2021-12-13_18-34	1
AL17-09	S7	OCFIBNPS	0	4.99032	5.01128	5.18526	4.71492	5.41017	4.83655	4.72622	_2021-12-13_18-52	1
AL17-10	S8	OCFIBNPS	0	10.0308	9.40582	9.90438	9.59657	10.8521	10.1156	9.64667	_2021-12-13_19-09	1
AL17-11	S9	OCFIBNPS	0	20.5832	17.4983	18.7608	20.2566	22.1637	21.8785	20.2375	_2021-12-13_19-26	1
AL17-12	ICV	OCFIBNPS	0%*	100.1%	100.6%	103.8%	104.2%	99.6%	99.7%	99.9%	_2021-12-13_19-43	1
AL17-13	ICV1	OCFIBNPS	0%*	96.5%	100.7%	97%	104.9%	98.2%	100.1%	102.3%	_2021-12-13_20-00	1
AL17-14	ICB	OCFIBNPS	0	0	0	0	0	0	0	0	_2021-12-13_20-17	1

Report date: 12/14/2021 9:44:45 AM
Printed by: VDuran

Ident: AL17-02 S0
Analysis from: 12/13/2021 4:52:28 PM
File: _2021-12-13_16-52.chw Last save: 12/14/2021 9:41:43 AM
Modified!
Method: ICD0-L13.mtw Last save: 12/13/2021 5:58:40 PM
Run operator: VDuran
Analysis number: 176662

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000

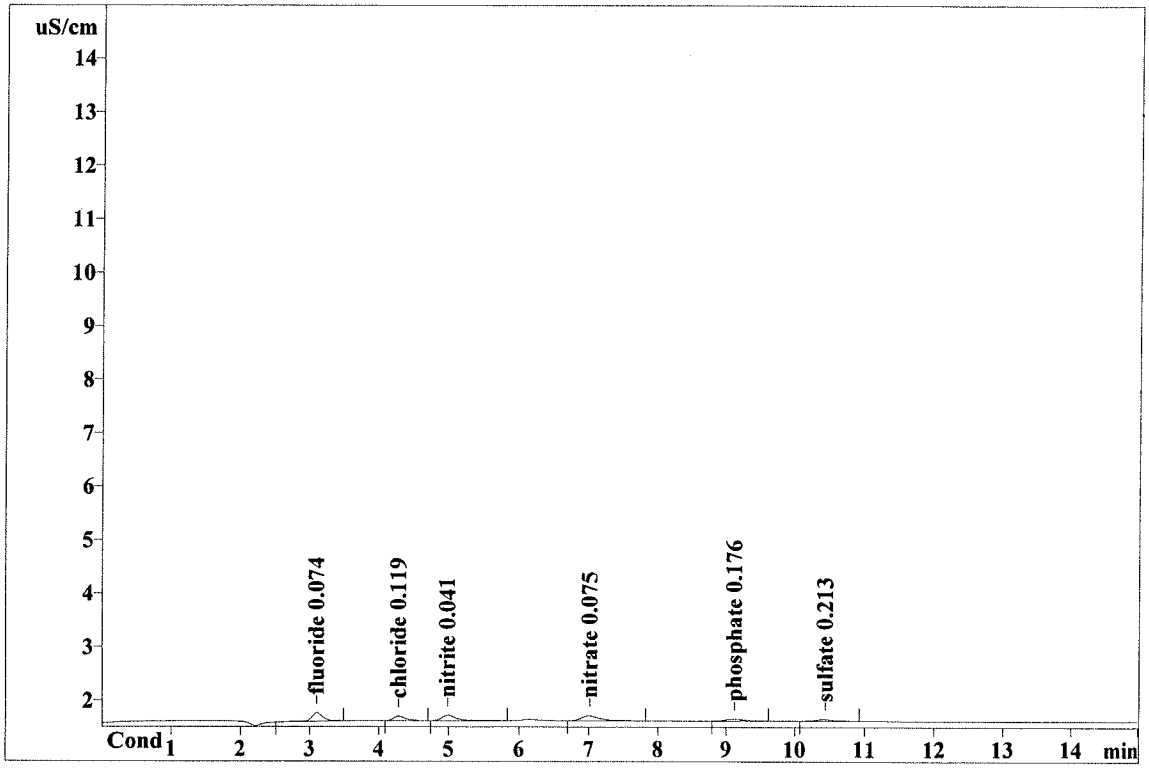


Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.04	0.05	0.958	0.000	

This report has been created by IC Net
METROHM LTD

Report date:	12/14/2021 9:44:51 AM		
Printed by:	VDuran		
Ident:	AL17-03 S1		
Analysis from:	12/13/2021 5:09:32 PM		
File:	_2021-12-13_17-09.chw	Last save:	12/14/2021 9:41:43 AM
Method:	ICD0-L13.mtw	Last save:	12/13/2021 5:58:40 PM
Run operator:	VDuran		
Analysis number:	176663		
SAMPLE:	METHOD 300/9056/4110B		
:	0.05 PPM		
Vial number:	3		
Volume:	1.0 µL		
Dilution:	1.00		
Amount:	1.0000		



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.11	0.16	1.868	0.074	fluoride
2	4.28	0.08	1.019	0.119	chloride
3	4.99	0.10	1.599	0.041	nitrite
4	7.00	0.09	1.780	0.075	nitrate
5	9.13	0.03	0.709	0.176	phosphate
6	10.43	0.03	0.681	0.213	sulfate
6	15.00	0.50	7.656	0.699	

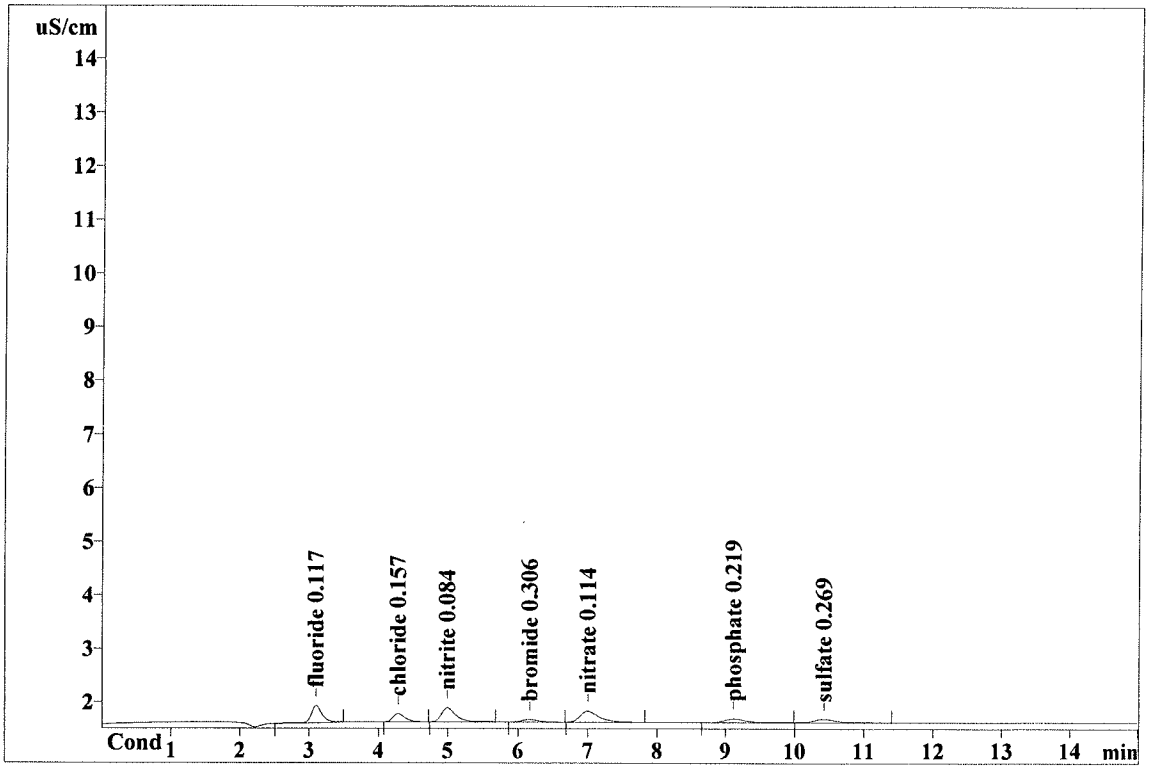
This report has been created by IC Net
METROHM LTD

Report date: 12/14/2021 9:44:53 AM
Printed by: VDuran

Ident: AL17-04 S2
Analysis from: 12/13/2021 5:26:37 PM
File: _2021-12-13_17-26.chw Last save: 12/14/2021 9:41:44 AM

Method: ICD0-L13.mtw Last save: 12/13/2021 5:58:40 PM
Run operator: VDuran
Analysis number: 176664

SAMPLE: METHOD 300/9056/4110B
: 0.1 PPM
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.11	0.32	3.479	0.117	fluoride
2	4.28	0.16	1.904	0.157	chloride
3	4.99	0.27	3.903	0.084	nitrite
4	6.16	0.05	0.823	0.306	bromide
5	7.00	0.21	3.894	0.114	nitrate
6	9.12	0.07	1.566	0.219	phosphate
7	10.42	0.07	1.568	0.269	sulfate
7	15.00	1.14	17.137	1.265	

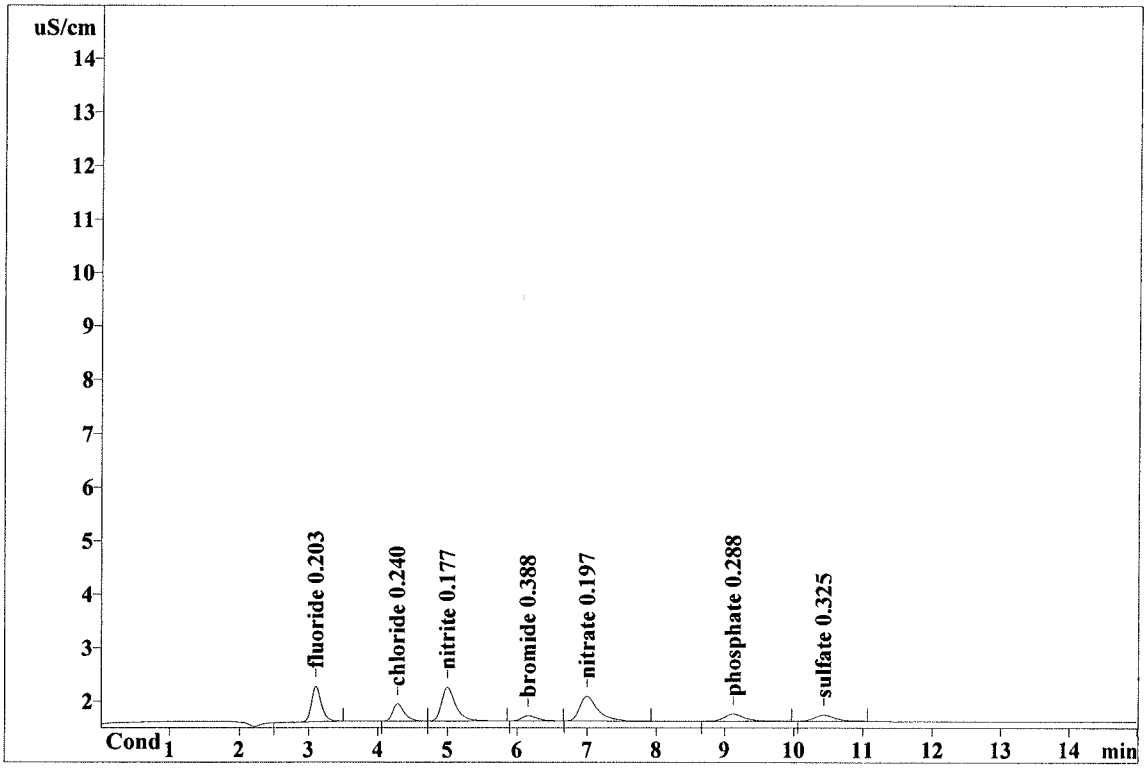
This report has been created by IC Net
METROHM LTD

Report date: 12/14/2021 9:44:59 AM
Printed by: VDuran

Ident: AL17-05 S3
Analysis from: 12/13/2021 5:43:43 PM
File: _2021-12-13_17-43.chw Last save: 12/14/2021 9:41:44 AM

Method: ICD0-L13.mtw Last save: 12/13/2021 5:58:40 PM
Run operator: VDuran
Analysis number: 176665

SAMPLE: METHOD 300/9056/4110B
: 0.2 PPM
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



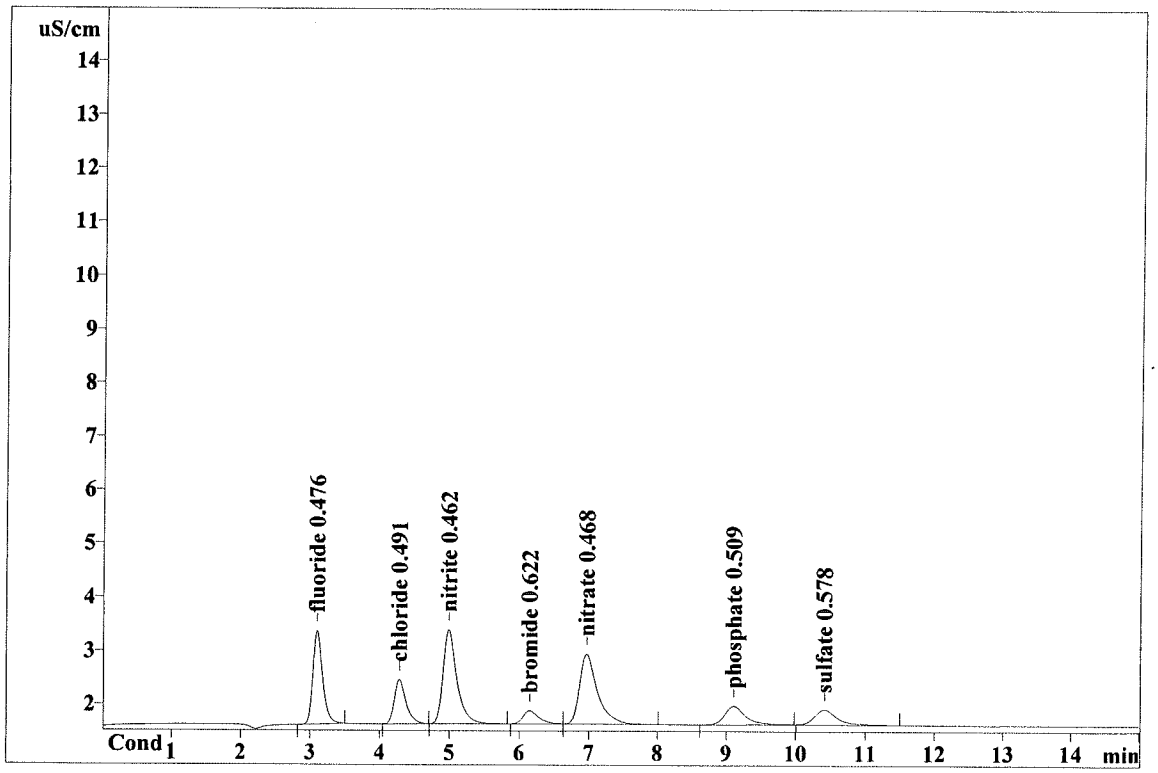
Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.11	0.66	6.748	0.203	fluoride
2	4.29	0.33	3.839	0.240	chloride
3	5.00	0.63	8.927	0.177	nitrite
4	6.16	0.10	1.602	0.388	bromide
5	6.99	0.46	8.473	0.197	nitrate
6	9.12	0.14	2.956	0.288	phosphate
7	10.43	0.11	2.463	0.325	sulfate
7	15.00	2.43	35.008	1.817	

This report has been created by IC Net
METROHM LTD

12/17/21

Report date:	12/14/2021 9:45:01 AM		
Printed by:	VDuran		
Ident:	AL17-06 S4		
Analysis from:	12/13/2021 6:00:48 PM		
File:	_2021-12-13_18-00.chw	Last save:	12/14/2021 9:41:44 AM
Method:	ICD0-L13.mtw	Last save:	12/13/2021 5:58:40 PM
Run operator:	VDuran		
Analysis number:	176666		
SAMPLE:	METHOD 300/9056/4110B		
:	0.5 PPM		
Vial number:	6		
Volume:	1.0 µL		
Dilution:	1.00		
Amount:	1.0000		



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.10	1.74	17.116	0.476	fluoride
2	4.28	0.83	9.653	0.491	chloride
3	4.99	1.76	24.359	0.462	nitrite
4	6.15	0.25	3.836	0.622	bromide
5	6.96	1.31	23.438	0.468	nitrate
6	9.11	0.35	7.416	0.509	phosphate
7	10.41	0.28	6.495	0.578	sulfate
7	15.00	6.51	92.314	3.606	

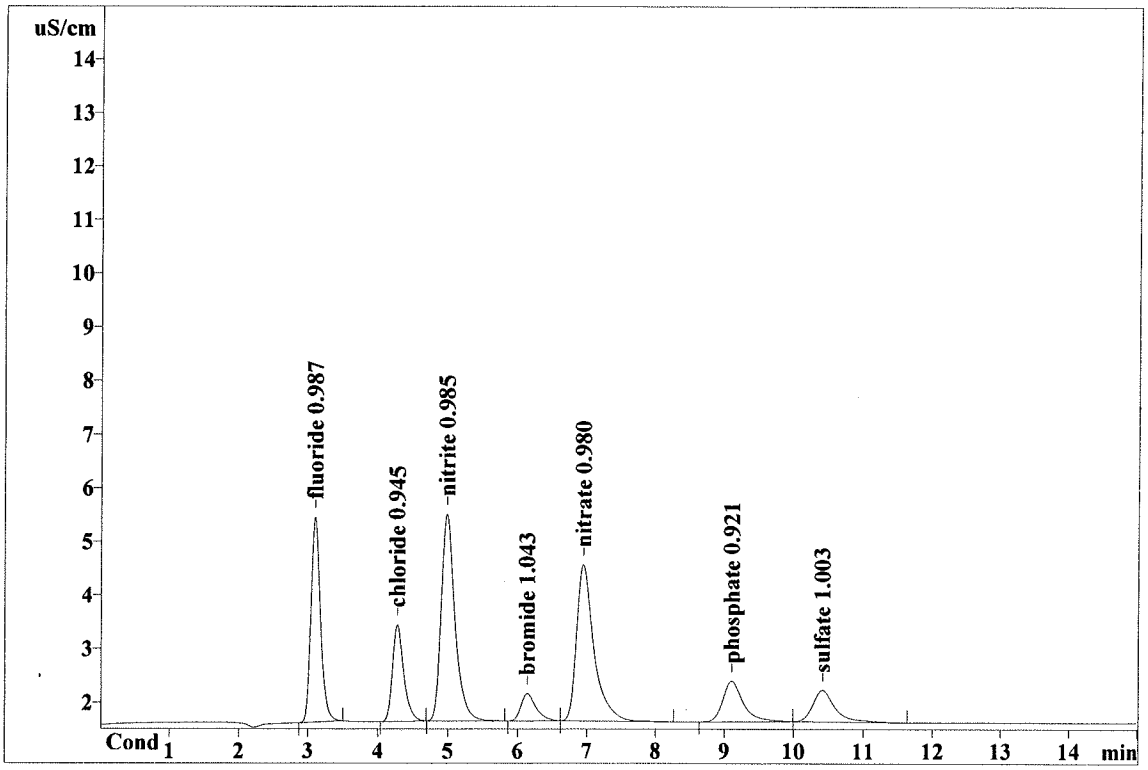
This report has been created by IC Net
METROHM LTD

Report date: 12/14/2021 9:45:05 AM
Printed by: VDuran

Ident: AL17-07 S5
Analysis from: 12/13/2021 6:17:53 PM
File: _2021-12-13_18-17.chw Last save: 12/14/2021 9:41:44 AM

Method: ICD0-L13.mtw Last save: 12/13/2021 5:58:40 PM
Run operator: VDuran
Analysis number: 176667

SAMPLE: METHOD 300/9056/4110B
: 1.0 PPM
Vial number: 7
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.10	3.82	36.515	0.987	fluoride
2	4.28	1.79	20.189	0.945	chloride
3	4.98	3.86	52.668	0.985	nitrite
4	6.14	0.51	7.848	1.043	bromide
5	6.94	2.92	51.637	0.980	nitrate
6	9.10	0.76	15.709	0.921	phosphate
7	10.40	0.59	13.278	1.003	sulfate
7	15.00	14.25	197.844	6.864	

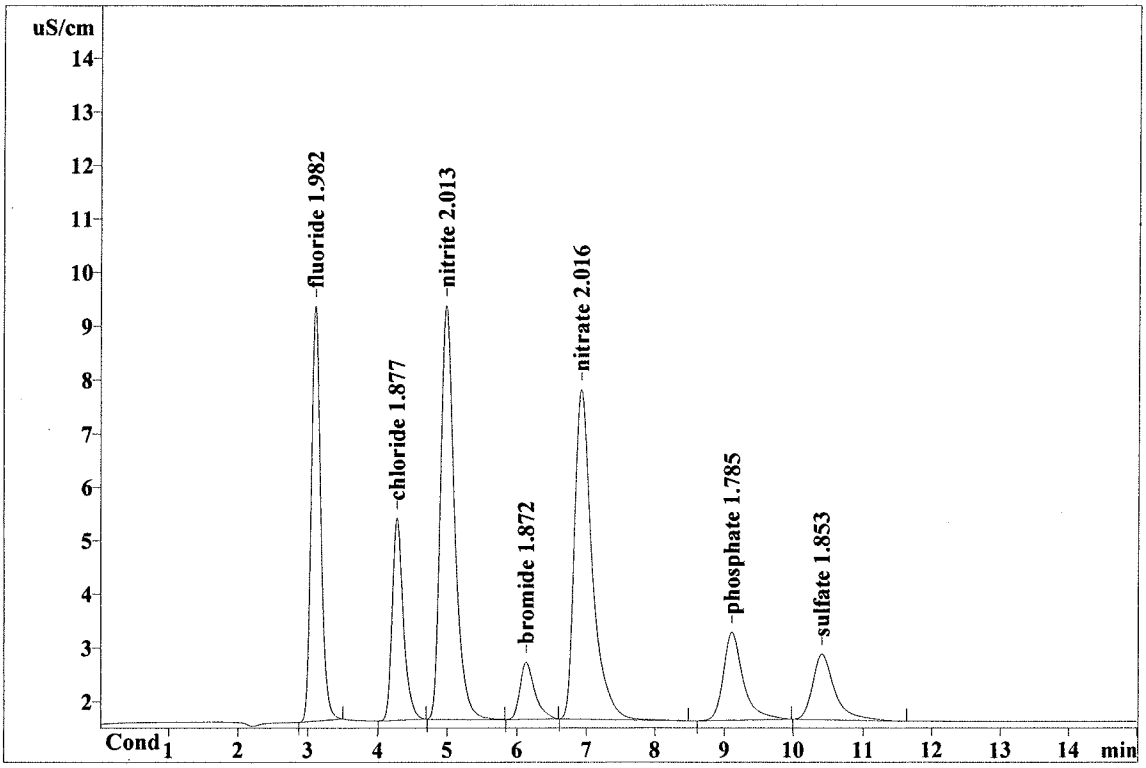
This report has been created by IC Net
METROHM LTD

Report date: 12/14/2021 9:45:08 AM
Printed by: VDuran

Ident: AL17-08 S6
Analysis from: 12/13/2021 6:34:58 PM
File: _2021-12-13_18-34.chw Last save: 12/14/2021 9:41:44 AM

Method: ICD0-L13.mtw Last save: 12/13/2021 5:58:40 PM
Run operator: VDuran
Analysis number: 176668

SAMPLE: METHOD 300/9056/4110B
: 2.0 PPM
Vial number: 8
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.11	7.73	74.294	1.982	fluoride
2	4.28	3.77	41.787	1.877	chloride
3	4.98	7.71	108.315	2.013	nitrite
4	6.13	1.06	15.747	1.872	bromide
5	6.92	6.15	108.760	2.016	nitrate
6	9.11	1.63	33.085	1.785	phosphate
7	10.41	1.22	26.836	1.853	sulfate
7	15.00	29.27	408.824	13.396	

This report has been created by IC Net
METROHM LTD

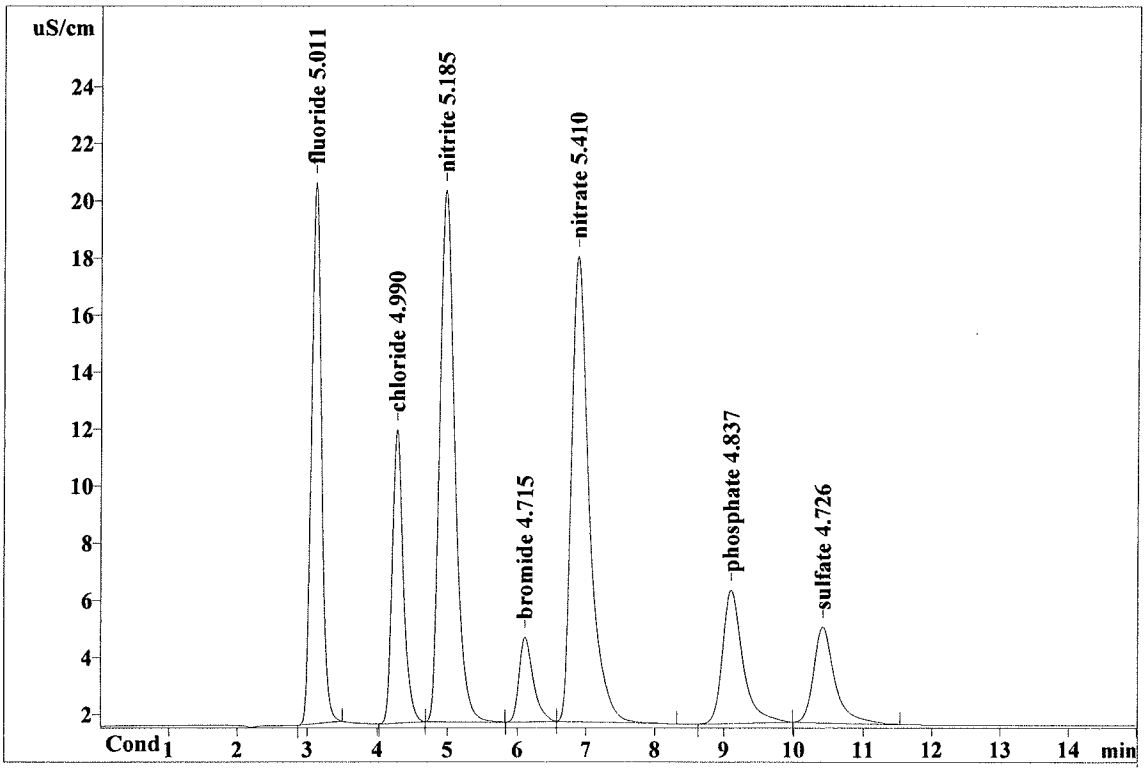
12/17/21

Report date: 12/14/2021 9:45:17 AM
Printed by: VDuran

Ident: AL17-09 S7
Analysis from: 12/13/2021 6:52:03 PM
File: _2021-12-13_18-52.chw Last save: 12/14/2021 9:41:45 AM

Method: ICD0-L13.mtw Last save: 12/13/2021 5:58:40 PM
Run operator: VDuran
Analysis number: 176669

SAMPLE: METHOD 300/9056/4110B
: 5.0 PPM
Vial number: 9
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.11	18.97	189.350	5.011	fluoride
2	4.27	10.29	114.000	4.990	chloride
3	4.96	18.63	280.072	5.185	nitrite
4	6.11	2.97	42.849	4.715	bromide
5	6.87	16.32	295.912	5.410	nitrate
6	9.10	4.68	94.502	4.837	phosphate
7	10.41	3.37	72.668	4.726	sulfate
7	15.00	75.24	1089.352	34.875	

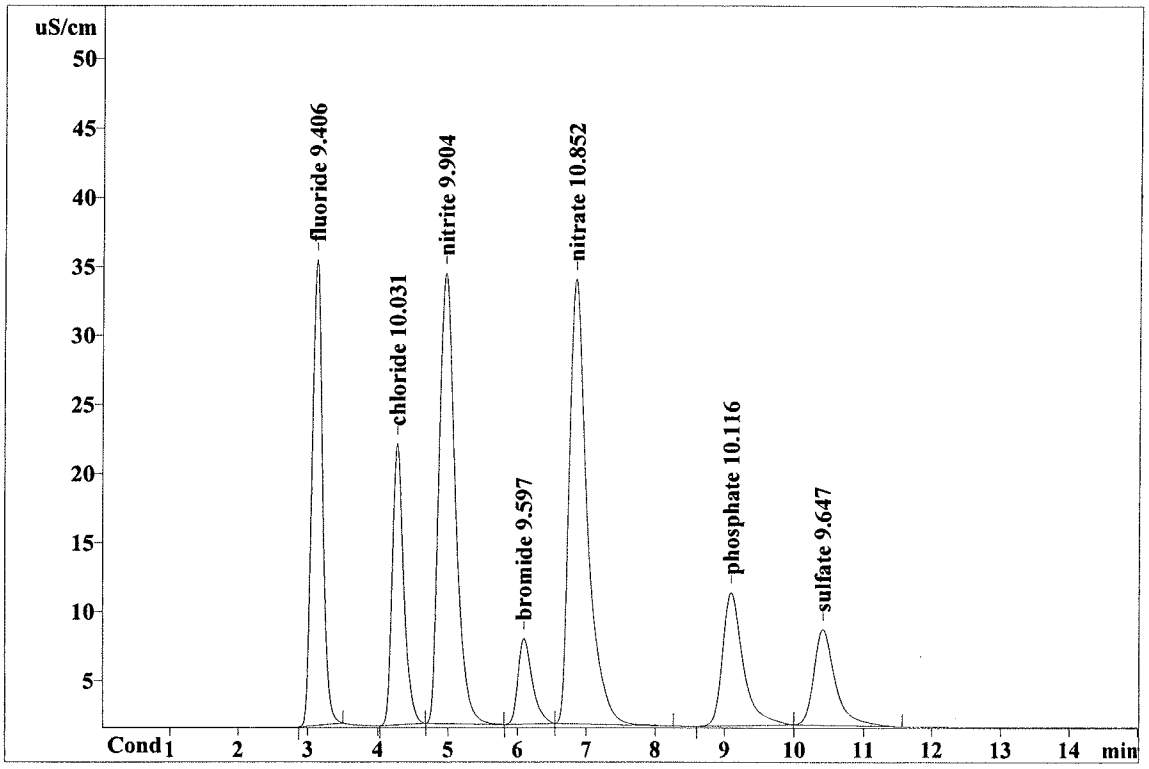
This report has been created by IC Net
METROHM LTD

Report date: 12/14/2021 9:45:27 AM
Printed by: VDuran

Ident: AL17-10 S8
Analysis from: 12/13/2021 7:09:08 PM
File: _2021-12-13_19-09.chw Last save: 12/14/2021 9:41:45 AM

Method: ICD0-L13.mtw Last save: 12/13/2021 5:58:40 PM
Run operator: VDuran
Analysis number: 176670

SAMPLE: METHOD 300/9056/4110B
: 10.0 PPM
Vial number: 10
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	33.76	356.239	9.406	fluoride
2	4.27	20.39	230.899	10.031	chloride
3	4.95	32.63	535.542	9.904	nitrite
4	6.09	6.21	89.384	9.597	bromide
5	6.83	32.24	595.958	10.852	nitrate
6	9.09	9.66	200.742	10.116	phosphate
7	10.41	6.96	151.151	9.647	sulfate
7	15.00	141.85	2159.914	69.552	

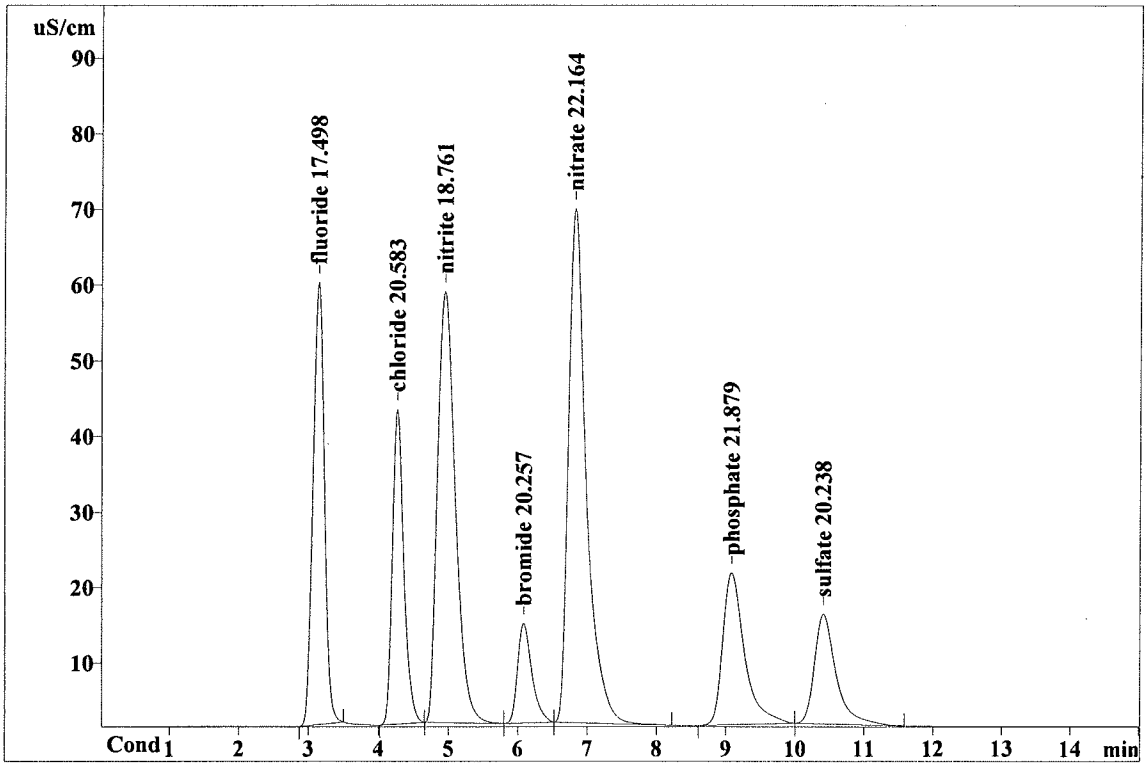
This report has been created by IC Net
METROHM LTD

Report date: 12/14/2021 9:45:50 AM
Printed by: VDuran

Ident: AL17-11 S9
Analysis from: 12/13/2021 7:26:13 PM
File: _2021-12-13_19-26.chw Last save: 12/14/2021 9:41:45 AM

Method: ICD0-L13.mtw Last save: 12/13/2021 5:58:40 PM
Run operator: VDuran
Analysis number: 176671

SAMPLE: METHOD 300/9056/4110B
: 20.0 PPM
Vial number: 11
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.14	58.43	663.562	17.498	fluoride
2	4.26	41.67	475.627	20.583	chloride
3	4.94	56.95	1014.984	18.761	nitrite
4	6.08	13.12	191.003	20.257	bromide
5	6.81	67.98	1219.627	22.164	nitrate
6	9.08	20.09	437.472	21.879	phosphate
7	10.41	14.48	320.079	20.238	sulfate
7	15.00	272.72	4322.354	141.379	

This report has been created by IC Net
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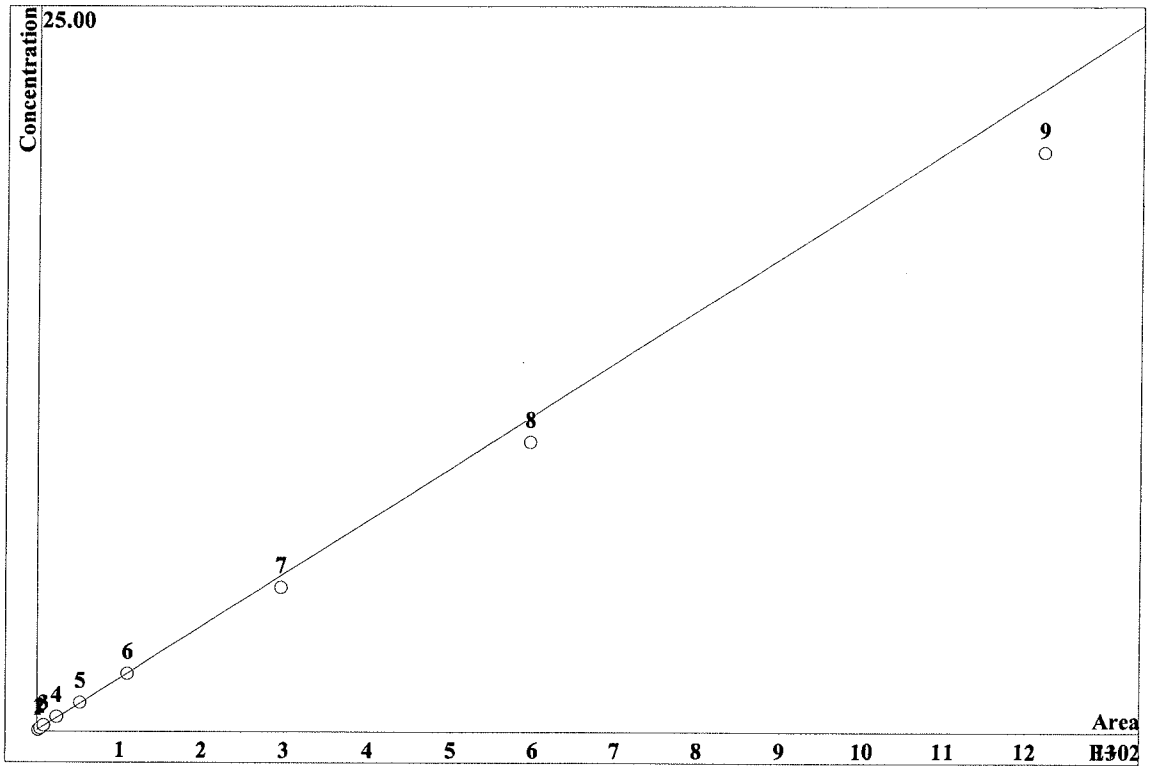
CALIBRATION OF COMPONENT nitrate

Method: ICD0-L13.mtw
Equation: Q = 0.0181371·A + 0.0431969
RSD: 3.908 %
Correlation coefficient: 0.999556



K3 = 0 K2 = 0 K1 = 0.0181371 K0 = 0.0431969
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.09427	1.78	0.05	1	6.92	Yes	_2021-12-13_1
2	0.2093	3.894	0.1	1	6.92	Yes	_2021-12-13_1
3	0.4631	8.473	0.2	1	6.92	Yes	_2021-12-13_1
4	1.306	23.44	0.5	1	6.92	Yes	_2021-12-13_1
5	2.918	51.64	1	1	6.92	Yes	_2021-12-13_1
6	6.149	108.8	2	1	6.92	Yes	_2021-12-13_1
7	16.32	295.9	5	1	6.92	No	_2021-12-13_1
8	32.24	596	10	1	6.92	No	_2021-12-13_1
9	67.98	1220	20	1	6.92	No	_2021-12-13_1

SECOND SOURCE VERIFICATION

IC Result Check FormVersion : L13/AL17(2021)

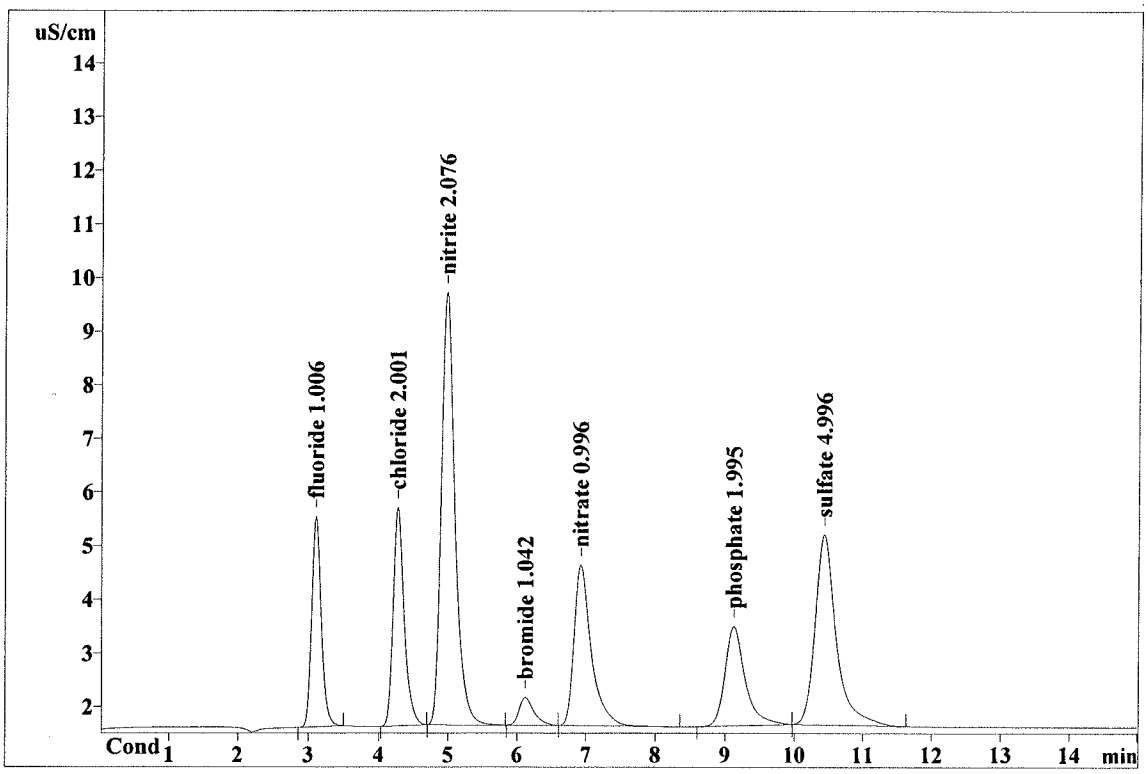
LFID	LSID	Selection	phosphate	nitrite	nitrate	iodide	fluoride	chloride	bromide	sulfate	RawNetID	DF
AL17-01	IB	PINOFCBS	0	0	0	0	0	0	0	0	_2021-12-13_16-35	1
AL17-12	ICV	PINOFCBS	99.7%	103.8%	99.6%	0%*	100.6%	100.1%	104.2%	99.9%	_2021-12-13_19-43	1
AL17-13	ICV1	PINOFCBS	100.1%	97%	98.2%	0%*	100.7%	96.5%	104.9%	102.3%	_2021-12-13_20-00	1
AL17-14	ICB	PINOFCBS	0	0	0	0	0	0	0	0	_2021-12-13_20-17	1

Report date: 12/14/2021 9:45:55 AM
Printed by: VDuran

Ident: AL17-12 ICV
Analysis from: 12/13/2021 7:43:18 PM
File: _2021-12-13_19-43.chw Last save: 12/14/2021 9:41:45 AM

Method: ICD0-L13.mtw Last save: 12/13/2021 5:58:40 PM
Run operator: VDuran
Analysis number: 176672

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 12
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.10	3.92	37.242	1.006	fluoride
2	4.27	4.07	44.683	2.001	chloride
3	4.97	8.06	111.773	2.076	nitrite
4	6.12	0.52	7.835	1.042	bromide
5	6.92	2.99	52.515	0.996	nitrate
6	9.12	1.85	37.310	1.995	phosphate
7	10.42	3.55	76.964	4.996	sulfate
7	15.00	24.96	368.322	14.112	

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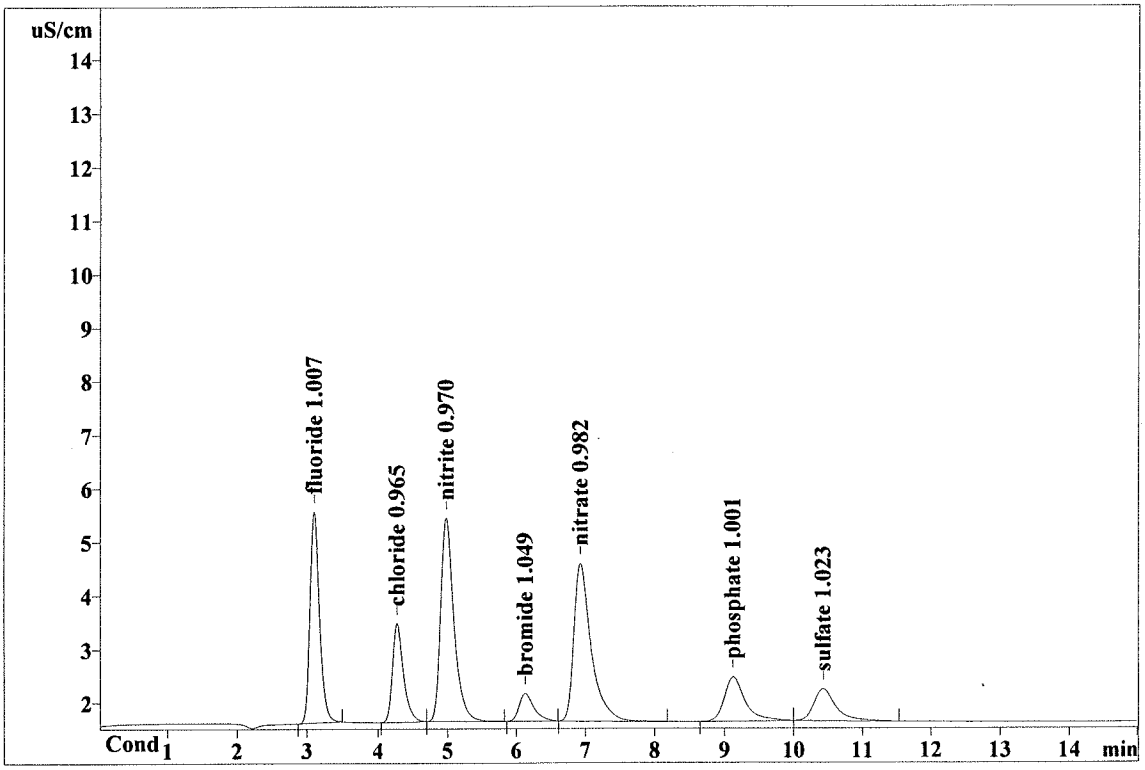
Report date: 12/14/2021 9:46:01 AM
Printed by: VDuran

Ident: AL17-13 ICV1
Analysis from: 12/13/2021 8:00:23 PM
File: _2021-12-13_20-00.chw Last save: 12/14/2021 9:41:45 AM

Method: ICD0-L13.mtw Last save: 12/13/2021 5:58:40 PM
Run operator: VDuran
Analysis number: 176673

SAMPLE: METHOD 300/9056/4110B
: 1.0 PPM
Vial number: 13
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

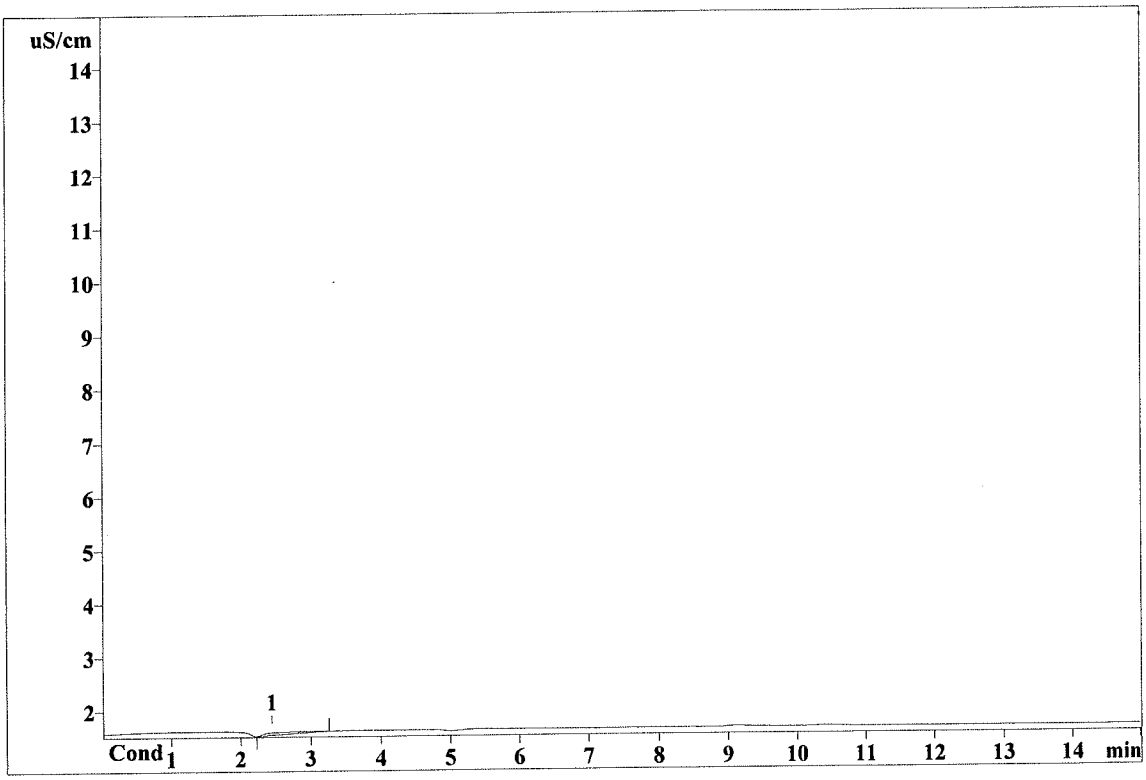
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.11	3.95	37.264	1.007	fluoride
2	4.28	1.85	20.651	0.965	chloride
3	4.98	3.81	51.867	0.970	nitrite
4	6.13	0.52	7.901	1.049	bromide
5	6.93	2.95	51.783	0.982	nitrate
6	9.12	0.83	17.319	1.001	phosphate
7	10.43	0.60	13.596	1.023	sulfate
7	15.00	14.51	200.381	6.997	

This report has been created by IC Net
METROHM LTD

Report date: 12/14/2021 9:46:10 AM
Printed by: VDuran

Ident: AL17-14 ICB
Analysis from: 12/13/2021 8:17:27 PM
File: _2021-12-13_20-17.chw Last save: 12/14/2021 9:41:46 AM
Modified!
Method: ICD0-L13.mtw Last save: 12/13/2021 5:58:40 PM
Run operator: VDuran
Analysis number: 176674

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 14
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.44	0.04	1.666	0.000	

This report has been created by IC Net
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DAILY CALIBRATION(S)

Continuing Calibration Summary Form

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG : 21L159A
Method : E300.0
ICAL Ref. : 21AL17
InstrumentID: DO
Parameter : NITRATE

LFID	LSID	Recovery (%)	AnalysisDateTime
AL21-01	CCV13	99.9	12/15/2110:08
AL21-06	CCV15	96.5	12/15/2111:58
AL21-18	CCV17	92.3	12/15/2115:24

CCV Acceptance Criteria: 90-110%

IC Result Check FormVersion : L13/AL17(2021)

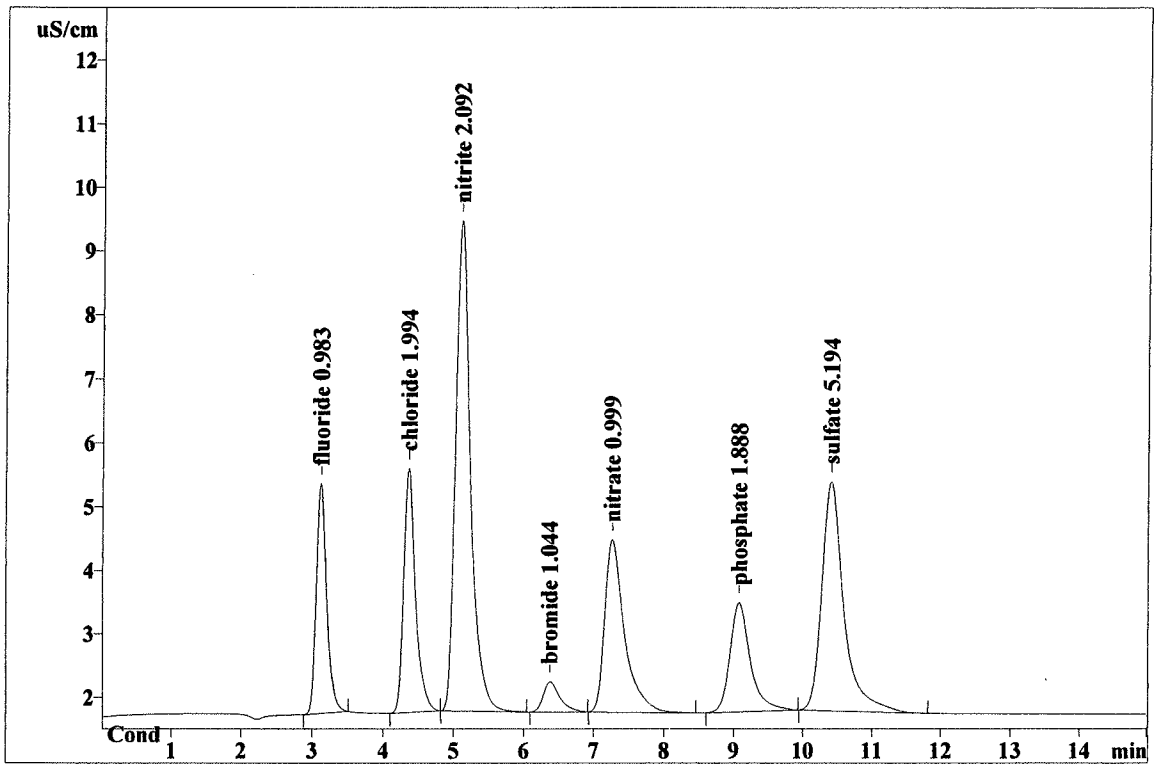
LFID	LSID	Selection	sulfate	nitrite	fluoride	iodide	nitrate	chloride	bromide	phosphate	RawNetID	DF
AL21-01	CCV13	SIFONCBP	103.9%	104.6%	98.3%	0%*	99.9%	99.7%	104.4%	94.4%	_2021-12-15_10-08	1
AL21-02	CCB13	SIFONCBP	0	0	0	0	0	0	0	0	_2021-12-15_10-25	1
AL21-06	CCV15	SIFONCBP	106%	103.1%	98.8%	0%*	96.5%	98.3%	102.9%	93.6%	_2021-12-15_11-58	1
AL21-07	CCB15	SIFONCBP	0	0	0	0	0	0	0	0	_2021-12-15_12-15	1
AL21-18	CCV17	SIFONCBP	103.2%	98.2%	94.5%	0%*	92.3%	99.2%	99.2%	85.9%*	_2021-12-15_15-24	1
AL21-19	CCB17	SIFONCBP	0	0	0	0	0	0	0	0	_2021-12-15_15-41	1
AL21-30	CCV19	SIFONCBP	108%	103.3%	99.7%	0%*	96.5%	101%	103.1%	91.7%	_2021-12-15_19-07	1
AL21-31	CCB19	SIFONCBP	0	0	0	0	0	0	0	0	_2021-12-15_19-24	1
AL21-36	CCV21	SIFONCBP	103%	101.5%	97.9%	0%*	94.7%	96.4%	102%	94.2%	_2021-12-15_20-49	1
AL21-37	CCB21	SIFONCBP	0	0	0	0	0	0	0	0	_2021-12-15_21-07	1
AL21-48	CCV23	SIFONCBP	99.8%	99.2%	95.7%	0%*	91.3%	94.2%	99.8%	88.7%*	_2021-12-16_01-06	1
AL21-49	CCB23	SIFONCBP	0	0	0	0	0	0	0	0	_2021-12-16_01-23	1
AL21-60	CCV25	SIFONCBP	105.5%	97.4%	93.9%	0%*	88%*	99.4%	98.8%	86%*	_2021-12-16_04-31	1
AL21-61	CCB25	SIFONCBP	0	0	0	0	0	0	0	0	_2021-12-16_04-48	1
AL21-72	CCV27	SIFONCBP	111.1%*	98.4%	94.9%	0%*	88.2%*	104.8%	99.5%	85.4%*	_2021-12-16_07-56	1
AL21-73	CCB27	SIFONCBP	0	0	0	0	0	0	0	0	_2021-12-16_08-13	1
AL21-76	CCV29	SIFONCBP	108.9%	99.4%	95.9%	0%*	89.5%*	103.1%	99.7%	88.6%*	_2021-12-16_09-04	1
AL21-77	CCB29	SIFONCBP	0	0	0	0	0	0	0	0	_2021-12-16_09-21	1

Report date: 12/16/2021 9:22:44 AM
Printed by: VDuran

Ident: AL21-01 CCV13
Analysis from: 12/15/2021 10:08:00 AM
File: _2021-12-15_10-08.chw Last save: 12/15/2021 10:23:29 AM

Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176736

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 1
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.12	3.62	36.359	0.983	fluoride
2	4.35	3.84	44.517	1.994	chloride
3	5.10	7.70	112.619	2.092	nitrite
4	6.37	0.47	7.856	1.044	bromide
5	7.26	2.71	52.694	0.999	nitrate
6	9.07	1.72	35.170	1.888	phosphate
7	10.40	3.61	80.125	5.194	sulfate
7	15.00	23.68	369.341	14.194	

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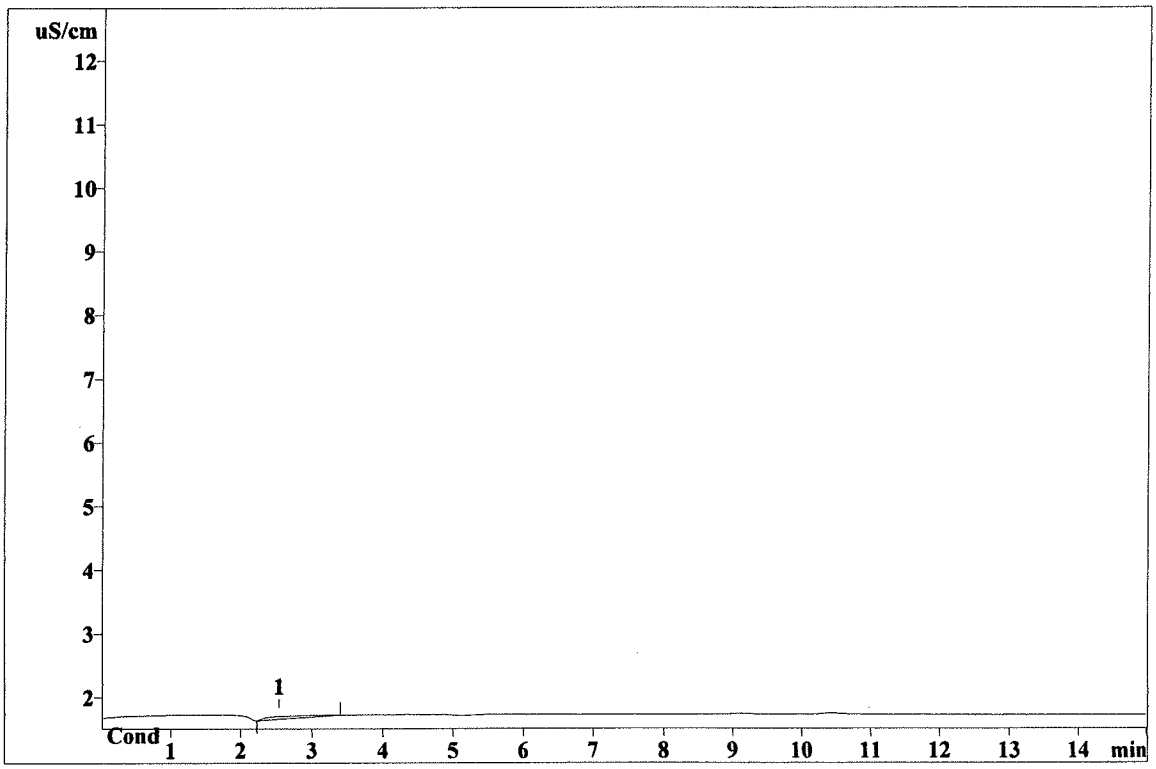
Report date: 12/16/2021 9:22:51 AM
Printed by: VDuran

Ident: AL21-02 CCB13
Analysis from: 12/15/2021 10:25:37 AM
File: _2021-12-15_10-25.chw Last save: 12/15/2021 10:40:34 AM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176737

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.53	0.04	1.829	0.000	

This report has been created by IC Net
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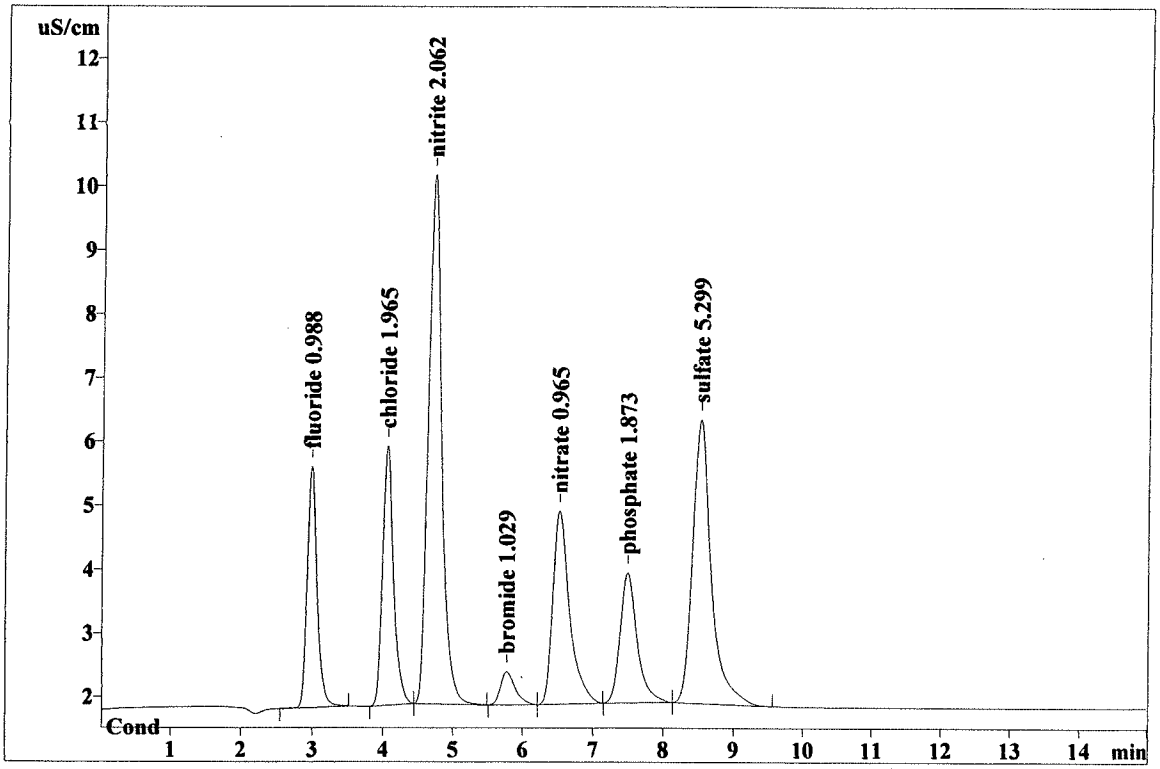
Report date: 12/16/2021 9:23:19 AM
Printed by: VDuran

Ident: AL21-06 CCV15
Analysis from: 12/15/2021 11:58:08 AM
File: _2021-12-15_11-58.chw Last save: 12/15/2021 12:13:06 PM

Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176741

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 6
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	3.77	36.551	0.988	fluoride
2	4.05	4.06	43.838	1.965	chloride
3	4.70	8.29	111.001	2.062	nitrite
4	5.77	0.52	7.714	1.029	bromide
5	6.51	3.03	50.809	0.965	nitrate
6	7.48	2.05	34.858	1.873	phosphate
7	8.52	4.45	81.812	5.299	sulfate
7	15.00	26.18	366.582	14.181	

This report has been created by IC Net
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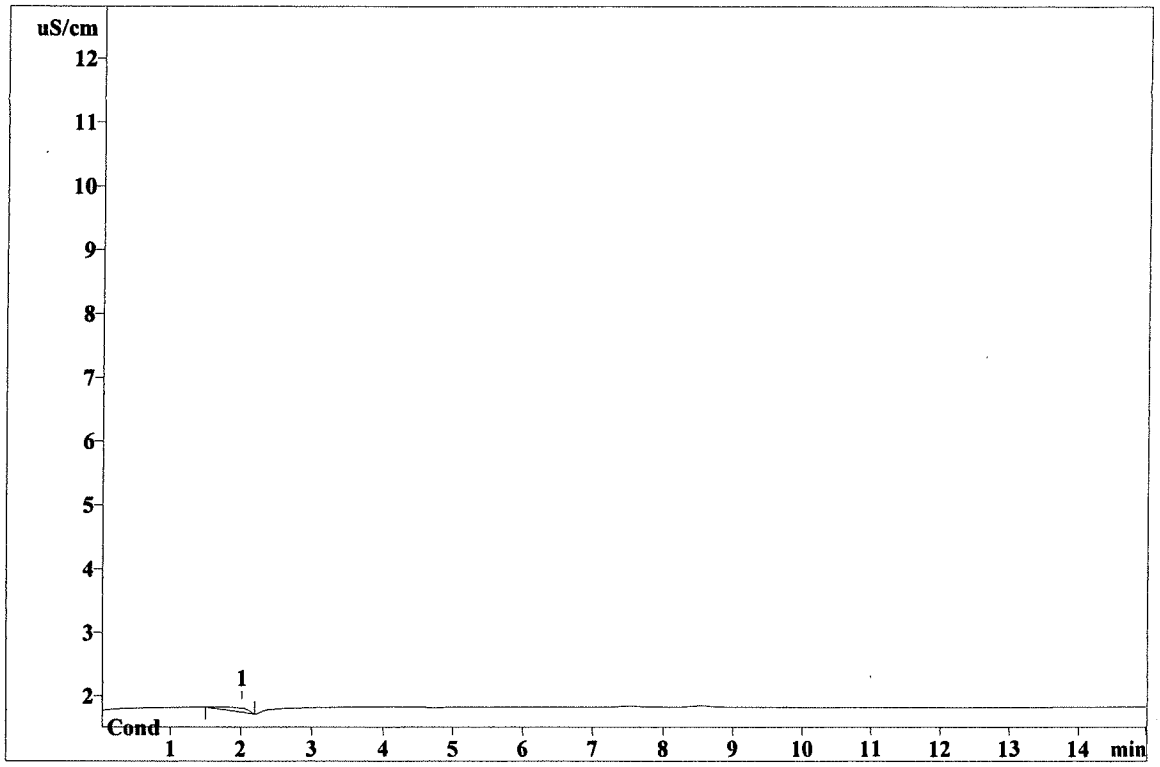
Report date: 12/16/2021 9:23:29 AM
Printed by: VDuran

Ident: AL21-07 CCB15
Analysis from: 12/15/2021 12:15:14 PM
File: _2021-12-15_12-15.chw Last save: 12/15/2021 12:30:11 PM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176742

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 7
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.02	0.06	1.607	0.000	

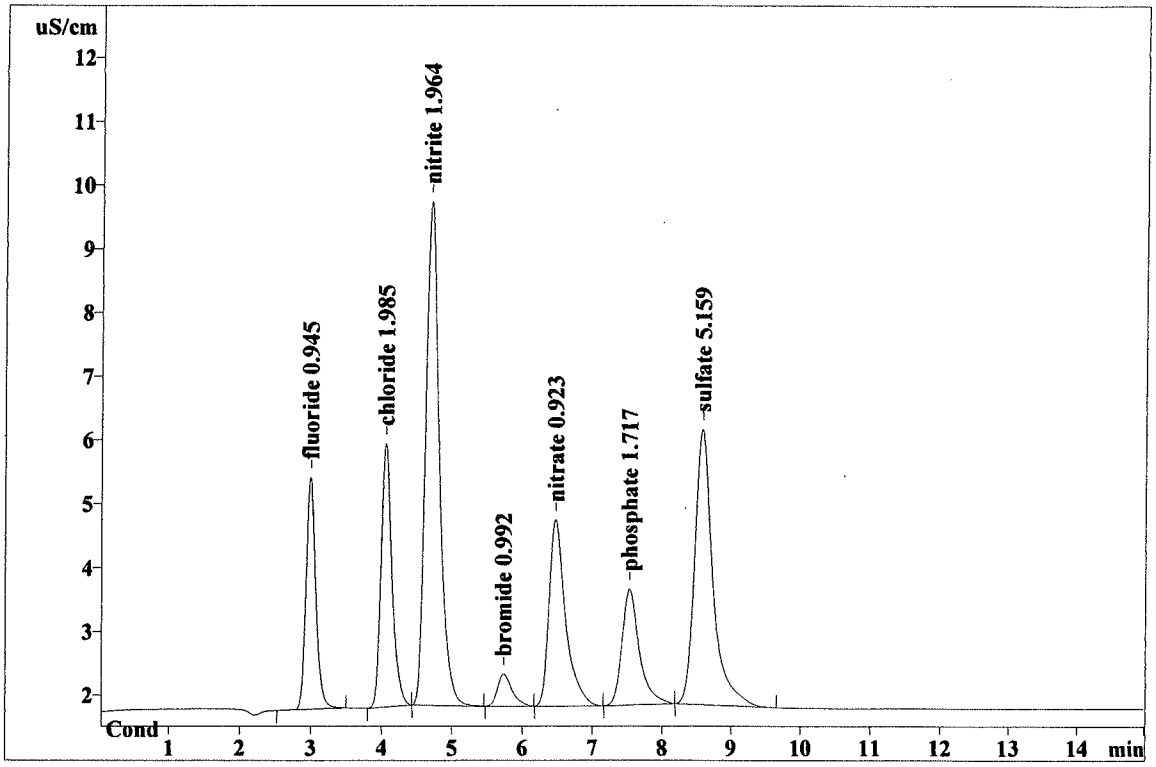
This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:24:25 AM
Printed by: VDuran

Ident: AL21-18 CCV17
Analysis from: 12/15/2021 3:24:31 PM
File: _2021-12-15_15-24.chw Last save: 12/15/2021 3:39:28 PM

Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176753

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 18
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	3.64	34.918	0.945	fluoride
2	4.05	4.14	44.296	1.985	chloride
3	4.69	7.90	105.690	1.964	nitrite
4	5.73	0.51	7.359	0.992	bromide
5	6.46	2.93	48.511	0.923	nitrate
6	7.53	1.83	31.725	1.717	phosphate
7	8.57	4.32	79.566	5.159	sulfate
7	15.00	25.27	352.065	13.684	

This report has been created by IC Net
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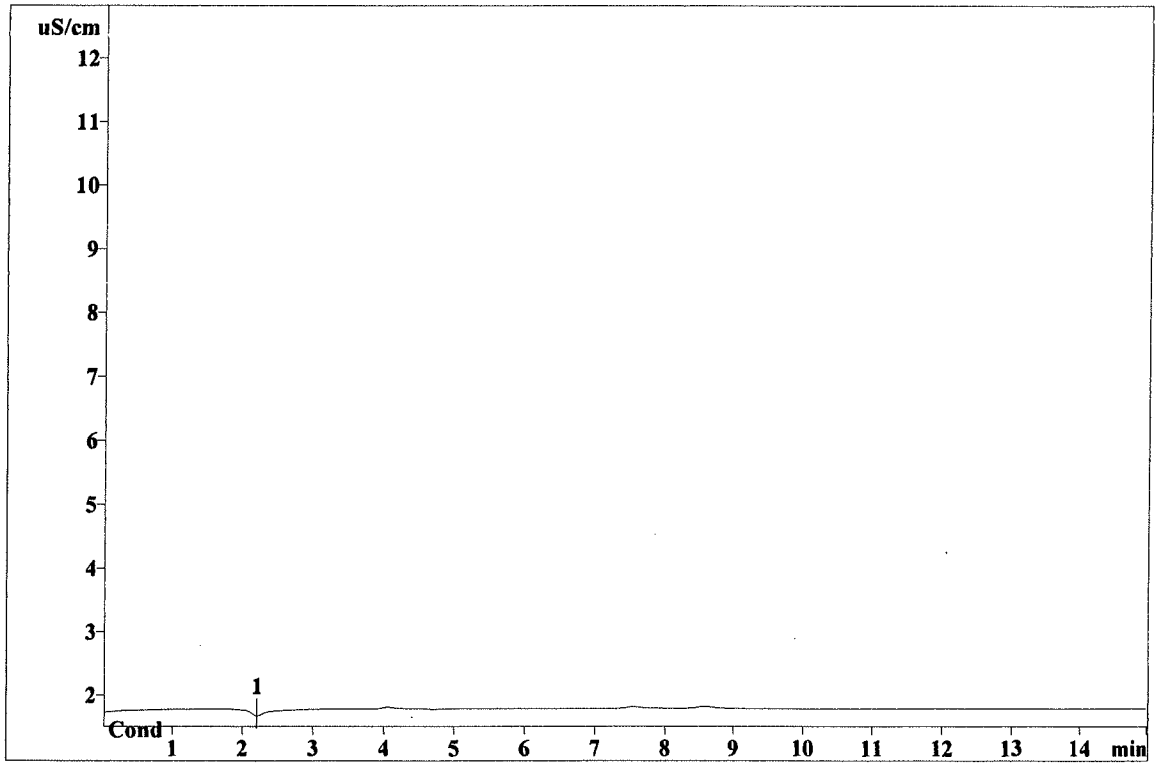
Report date: 12/16/2021 9:24:34 AM
Printed by: VDuran

Ident: AL21-19 CCB17
Analysis from: 12/15/2021 3:41:36 PM
File: _2021-12-15_15-41.chw Last save: 12/15/2021 3:56:33 PM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176754

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 19
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.21	-0.00	-0.000	0.000	

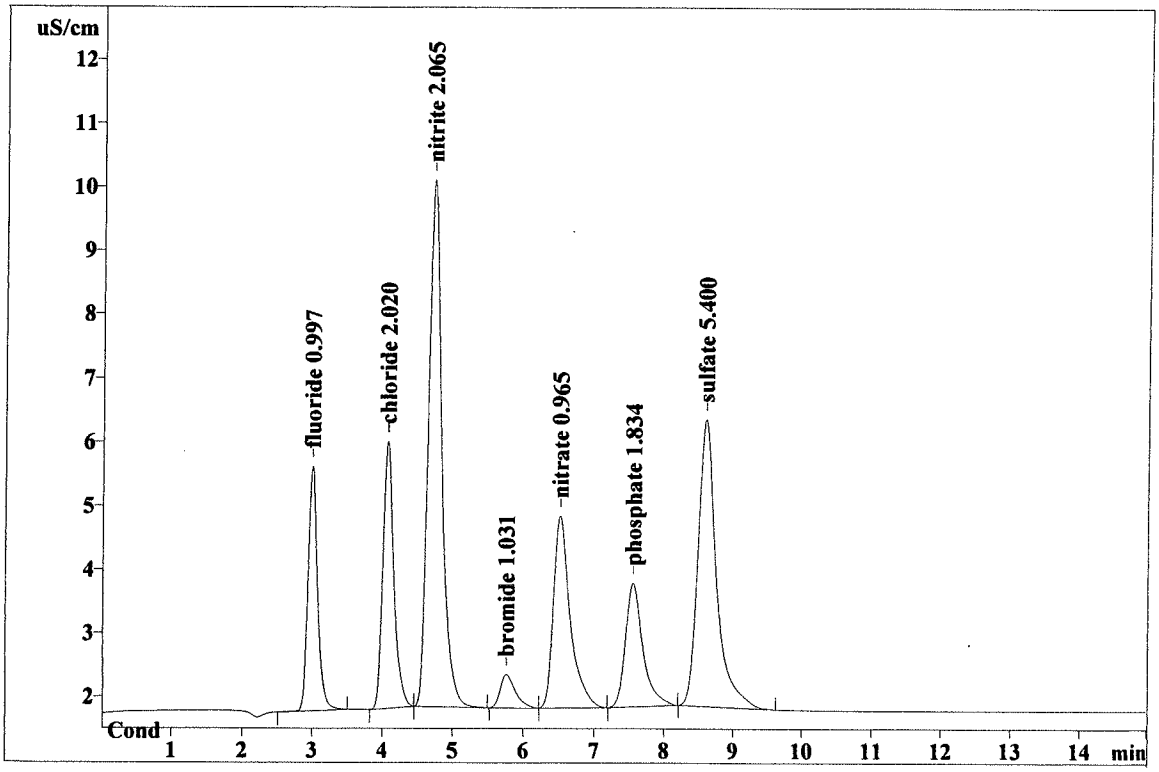
This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:24:43 AM
Printed by: VDuran

Ident: AL21-30 CCV19
Analysis from: 12/15/2021 7:07:27 PM
File: _2021-12-15_19-07.chw Last save: 12/16/2021 7:52:31 AM

Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176766

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 30
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

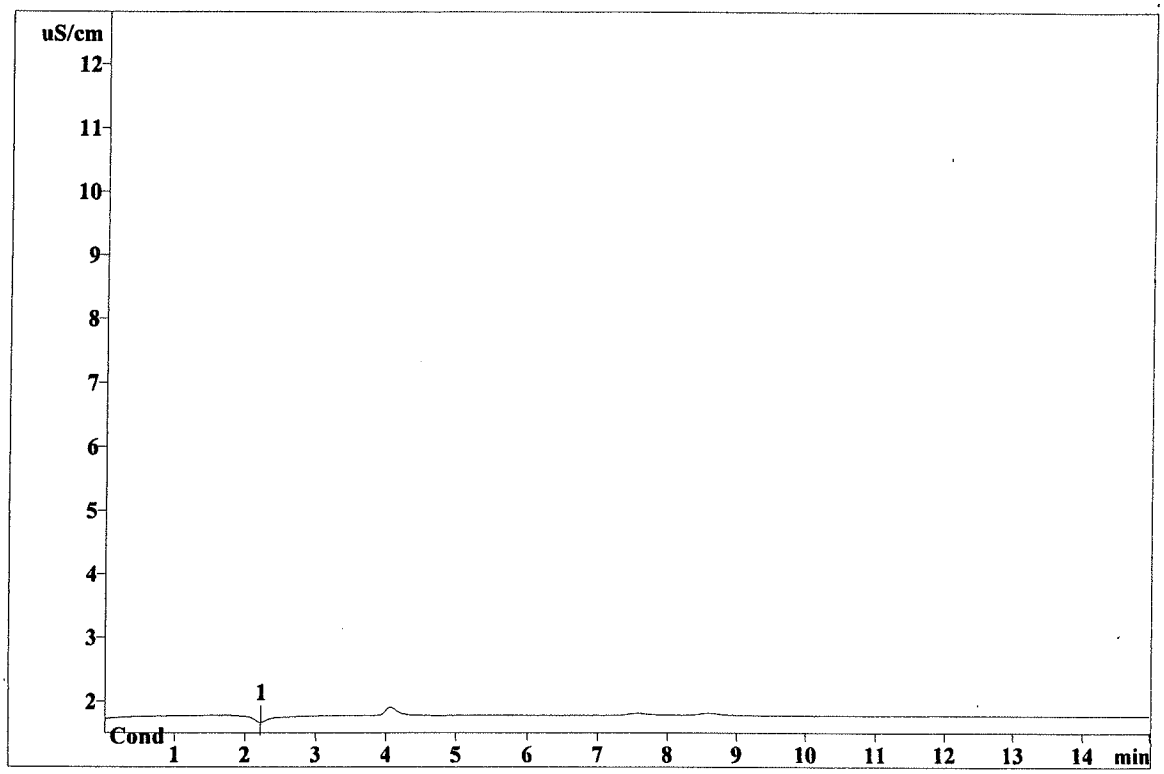
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	3.84	36.905	0.997	fluoride
2	4.06	4.19	45.116	2.020	chloride
3	4.71	8.26	111.170	2.065	nitrite
4	5.76	0.53	7.731	1.031	bromide
5	6.51	3.02	50.798	0.965	nitrate
6	7.55	1.94	34.082	1.834	phosphate
7	8.59	4.51	83.413	5.400	sulfate
7	15.00	26.29	369.215	14.312	

This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:24:59 AM
Printed by: VDuran

Ident: AL21-31 CCB19
Analysis from: 12/15/2021 7:24:32 PM
File: _2021-12-15_19-24.chw Last save: 12/15/2021 7:39:29 PM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176767

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 31
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

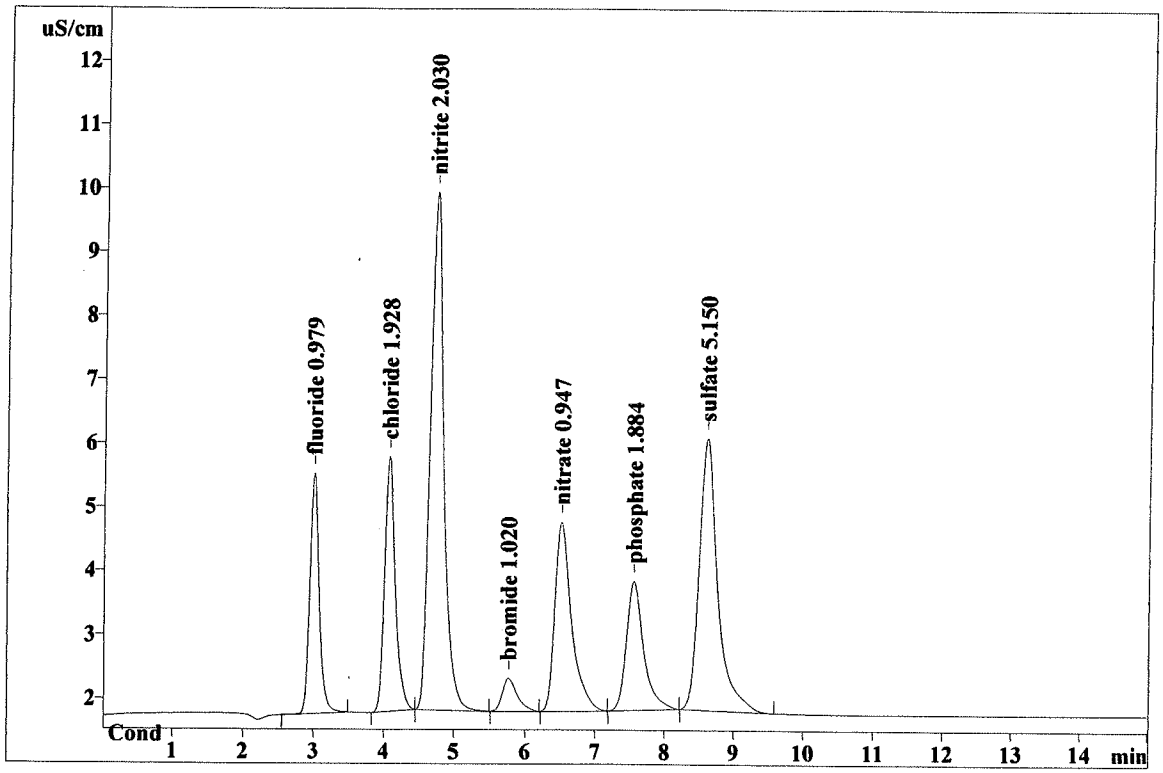
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.22	-0.00	-0.000	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:25:50 AM
Printed by: VDuran

Ident: AL21-36 CCV21
Analysis from: 12/15/2021 8:49:57 PM
File: _2021-12-15_20-49.chw Last save: 12/15/2021 9:04:54 PM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176772

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 36
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

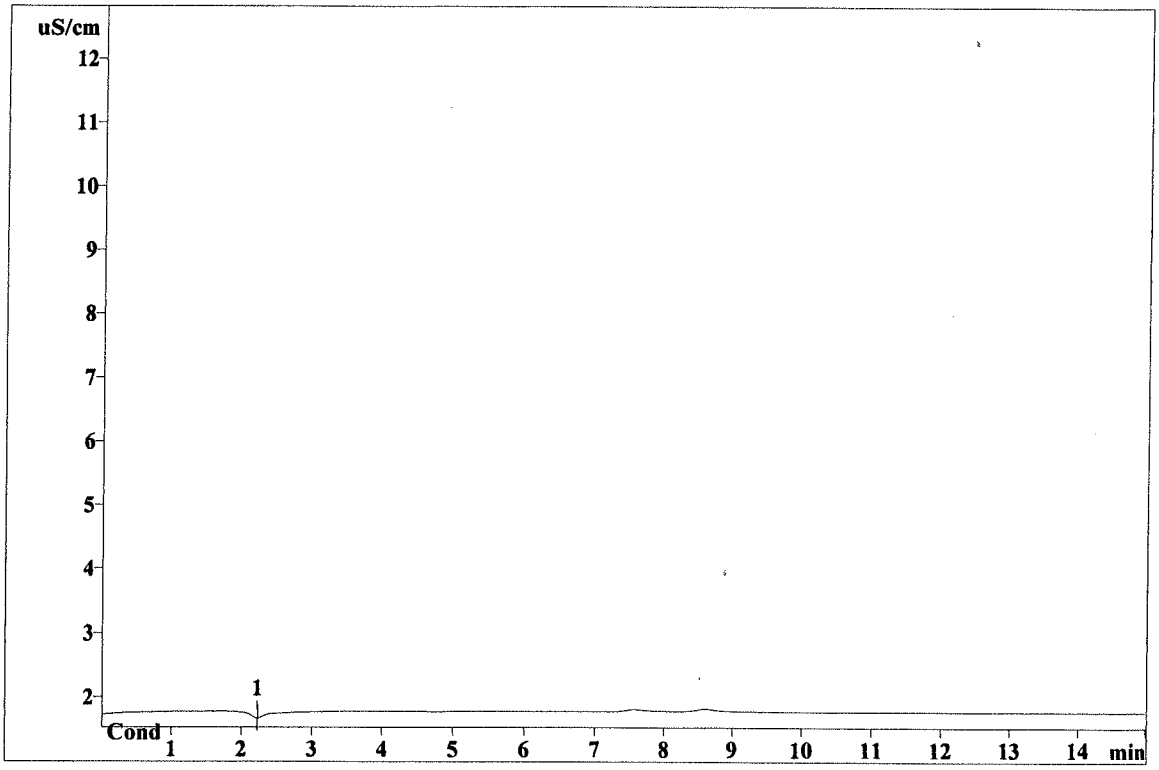
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	3.77	36.207	0.979	fluoride
2	4.06	3.99	42.976	1.928	chloride
3	4.71	8.11	109.263	2.030	nitrite
4	5.76	0.52	7.622	1.020	bromide
5	6.50	2.96	49.821	0.947	nitrate
6	7.55	2.02	35.075	1.884	phosphate
7	8.60	4.27	79.433	5.150	sulfate
7	15.00	25.64	360.397	13.937	

This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:26:03 AM
Printed by: VDuran

Ident: AL21-37 CCB21
Analysis from: 12/15/2021 9:07:02 PM
File: _2021-12-15_21-07.chw Last save: 12/15/2021 9:21:59 PM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176773

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 37
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

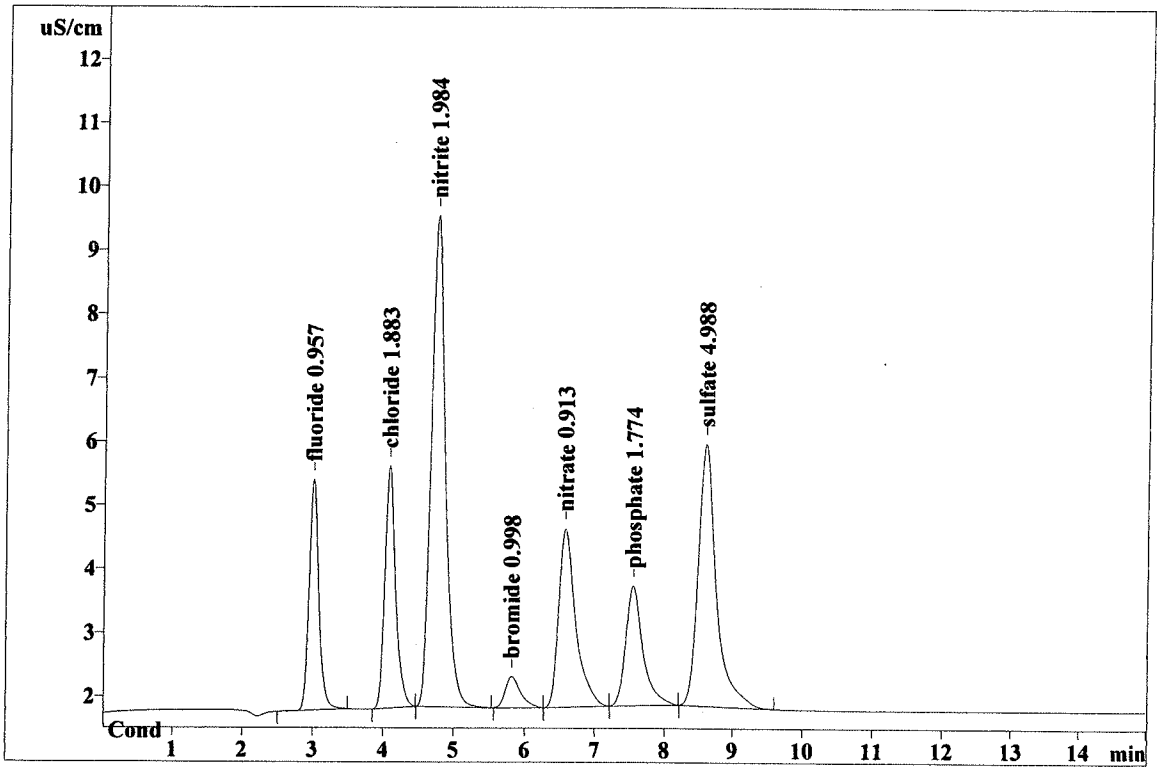
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.22	-0.00	-0.000	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:31:26 AM
Printed by: VDuran

Ident: AL21-48 CCV23
Analysis from: 12/16/2021 1:06:12 AM
File: _2021-12-16_01-06.chw Last save: 12/16/2021 1:21:09 AM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176787

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 48
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

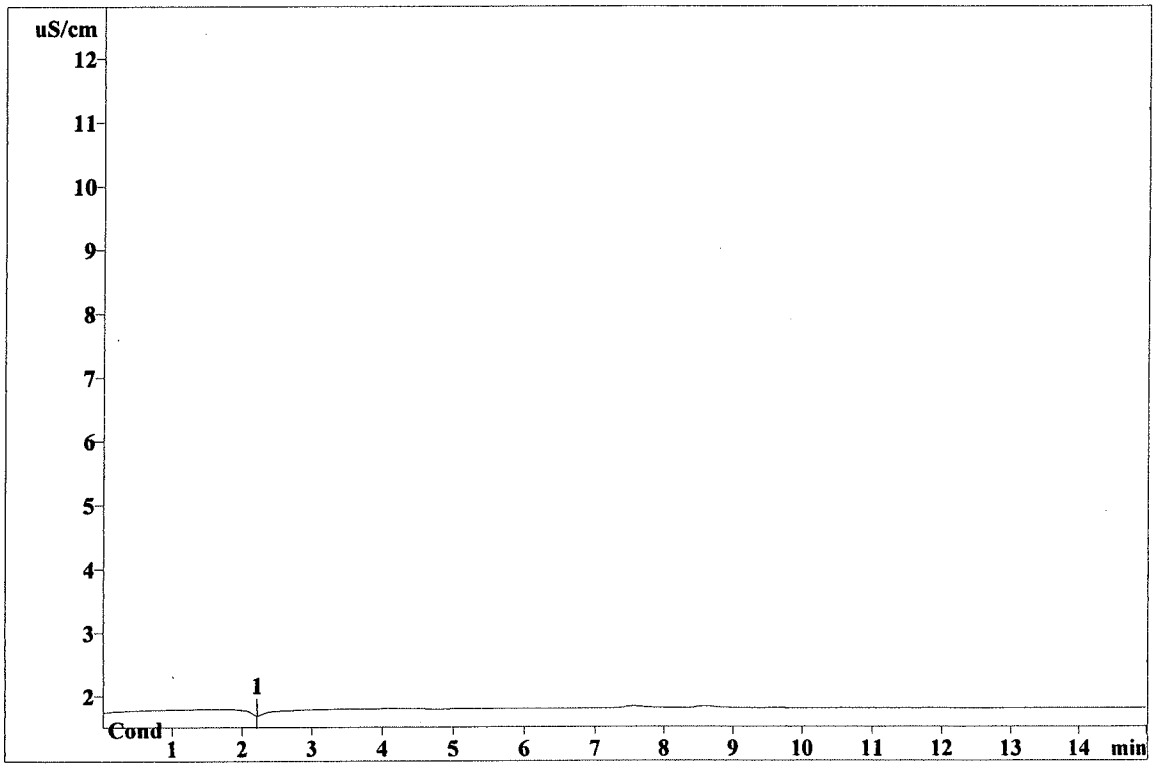
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	3.61	35.371	0.957	fluoride
2	4.08	3.81	41.946	1.883	chloride
3	4.73	7.70	106.755	1.984	nitrite
4	5.81	0.49	7.421	0.998	bromide
5	6.57	2.79	47.943	0.913	nitrate
6	7.54	1.87	32.870	1.774	phosphate
7	8.59	4.11	76.836	4.988	sulfate
7	15.00	24.39	349.142	13.497	

This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:31:43 AM
Printed by: VDuran

Ident: AL21-49 CCB23
Analysis from: 12/16/2021 1:23:18 AM
File: _2021-12-16_01-23.chw Last save: 12/16/2021 1:38:14 AM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176788

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 49
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

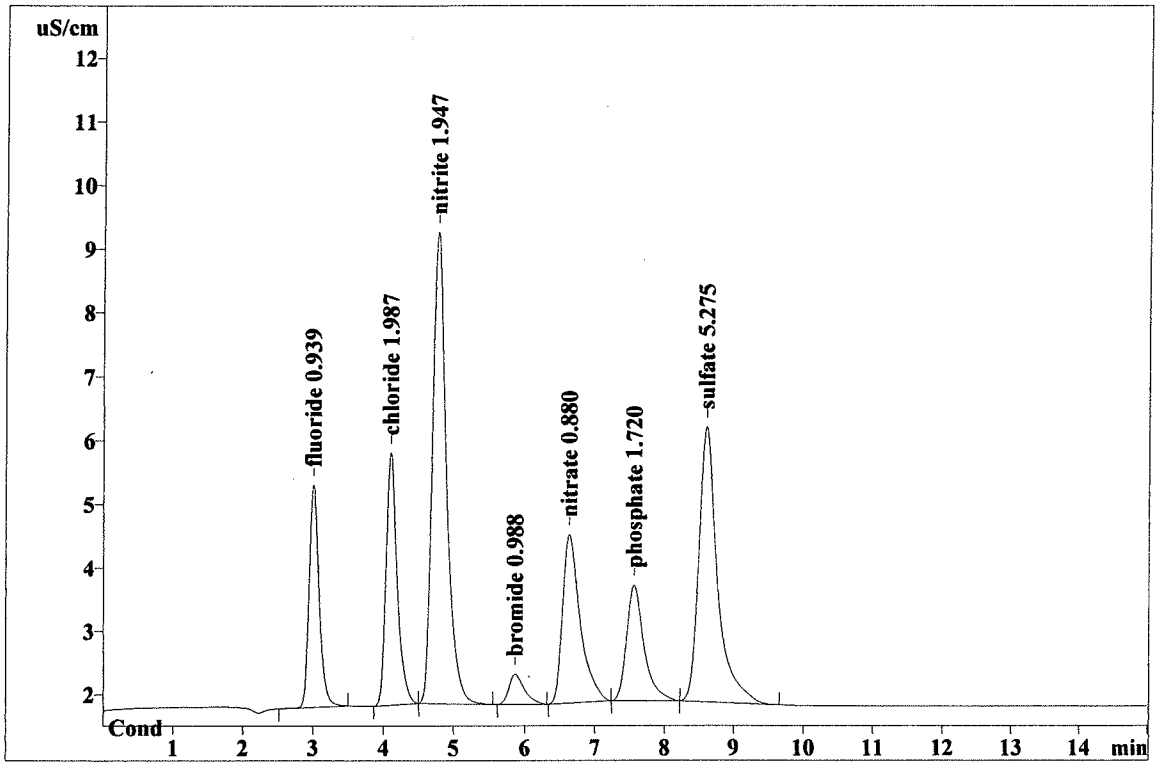
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.21	-0.00	-0.000	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:32:26 AM
Printed by: VDuran

Ident: AL21-60 CCV25
Analysis from: 12/16/2021 4:31:13 AM
File: _2021-12-16_04-31.chw Last save: 12/16/2021 4:46:10 AM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176799

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 60
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

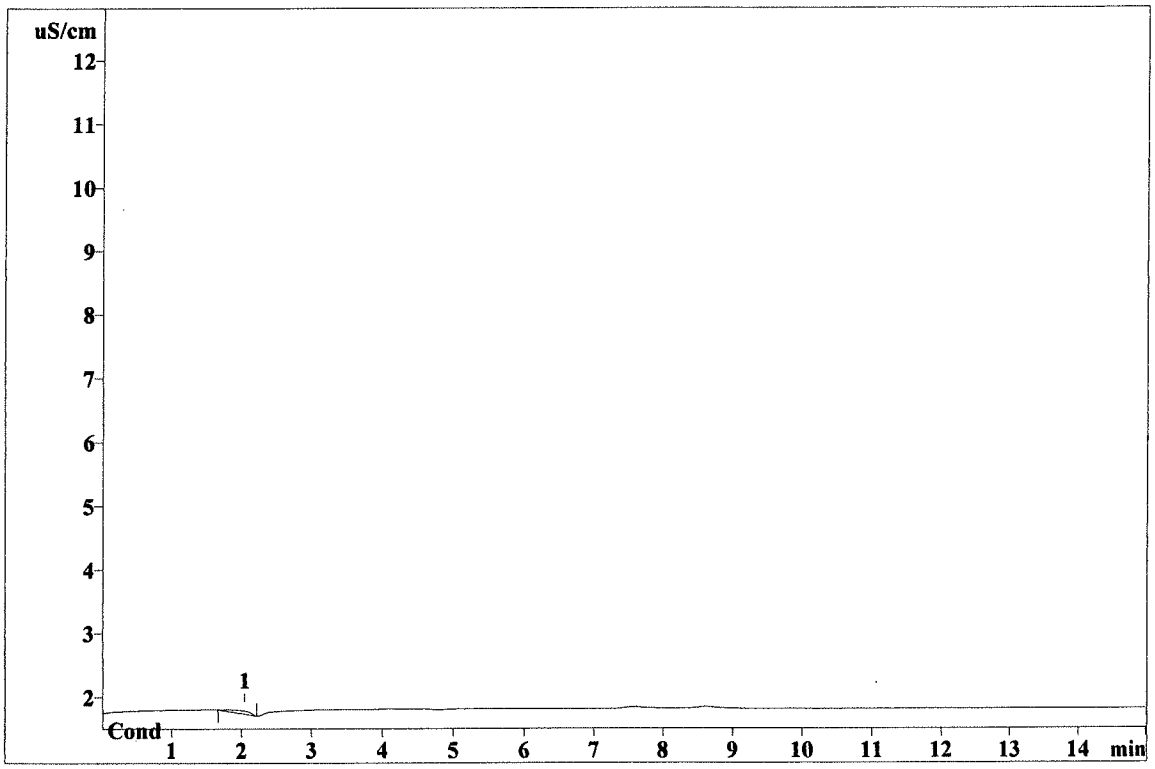
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.51	34.717	0.939	fluoride
2	4.10	3.98	44.359	1.987	chloride
3	4.76	7.41	104.771	1.947	nitrite
4	5.86	0.48	7.319	0.988	bromide
5	6.63	2.66	46.133	0.880	nitrate
6	7.55	1.82	31.778	1.720	phosphate
7	8.61	4.33	81.417	5.275	sulfate
7	15.00	24.18	350.493	13.736	

This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:32:39 AM
Printed by: VDuran

Ident: AL21-61 CCB25
Analysis from: 12/16/2021 4:48:18 AM
File: _2021-12-16_04-48.chw Last save: 12/16/2021 5:03:15 AM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176800

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 61
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

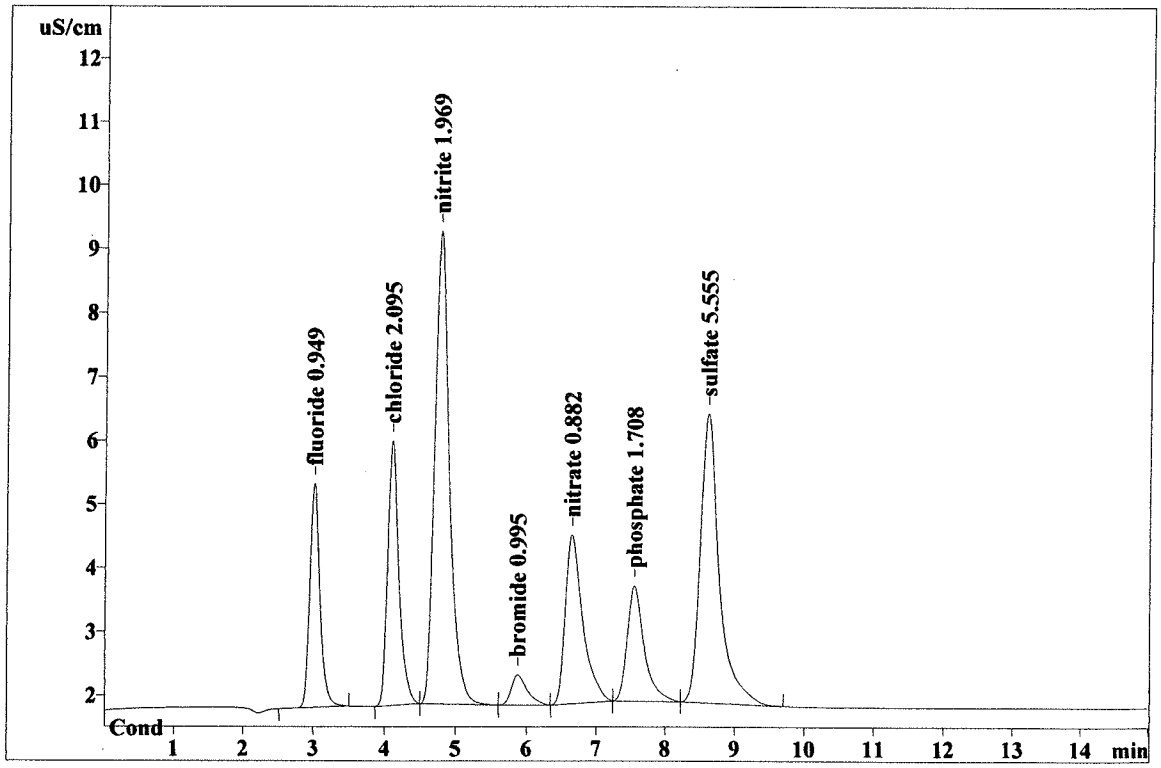
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.04	0.05	1.012	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:33:14 AM
Printed by: VDuran

Ident: AL21-72 CCV27
Analysis from: 12/16/2021 7:56:12 AM
File: _2021-12-16_07-56.chw Last save: 12/16/2021 8:11:10 AM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176811

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 72
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

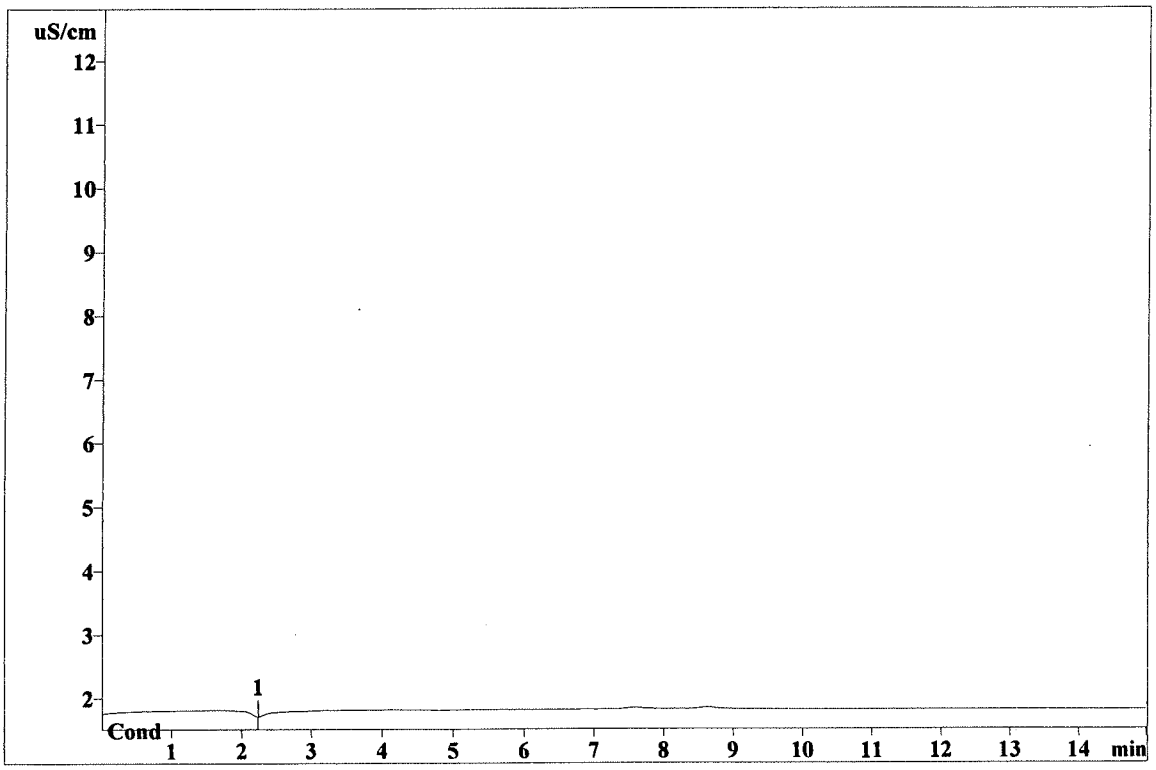
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.51	35.084	0.949	fluoride
2	4.10	4.15	46.856	2.095	chloride
3	4.77	7.41	105.935	1.969	nitrite
4	5.88	0.48	7.387	0.995	bromide
5	6.65	2.65	46.232	0.882	nitrate
6	7.55	1.81	31.546	1.708	phosphate
7	8.61	4.55	85.889	5.555	sulfate
7	15.00	24.55	358.929	14.153	

This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:33:30 AM
Printed by: VDuran

Ident: AL21-73 CCB27
Analysis from: 12/16/2021 8:13:17 AM
File: _2021-12-16_08-13.chw Last save: 12/16/2021 8:28:14 AM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176812

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 73
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.23	-0.00	-0.000	0.000	

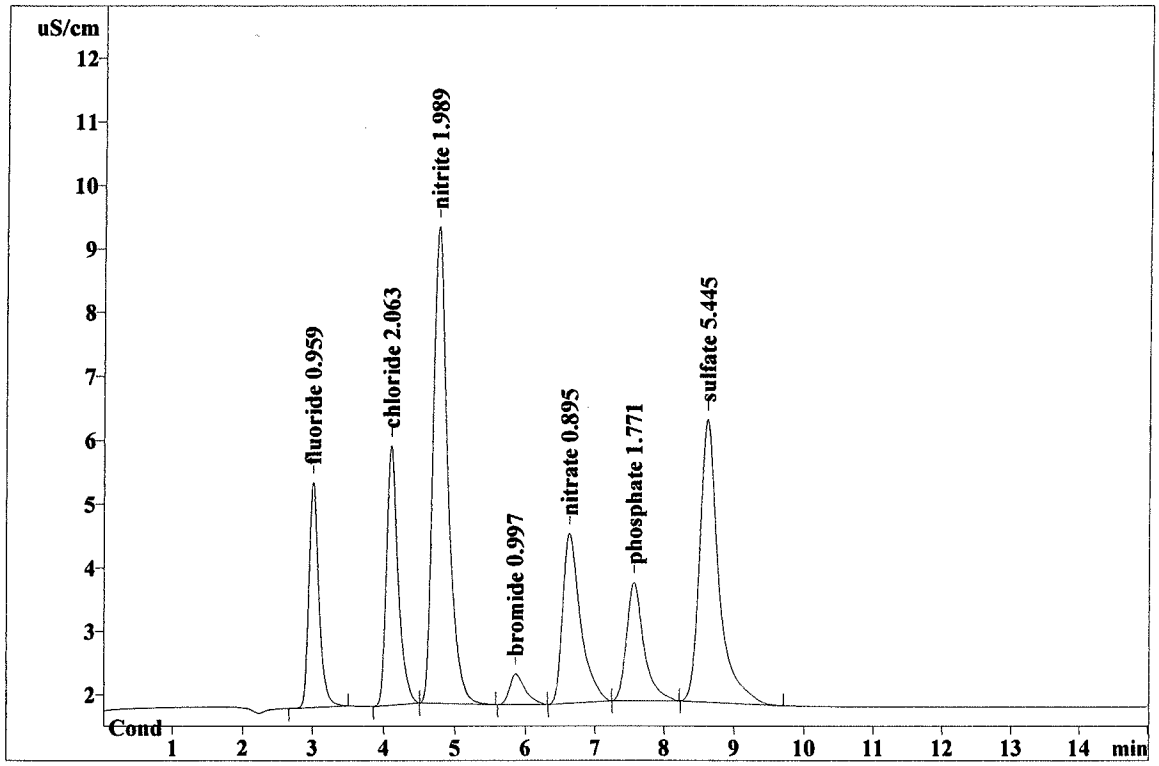
This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:33:47 AM
Printed by: VDuran

Ident: AL21-76 CCV29
Analysis from: 12/16/2021 9:04:33 AM
File: _2021-12-16_09-04.chw Last save: 12/16/2021 9:19:30 AM

Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176815

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 76
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

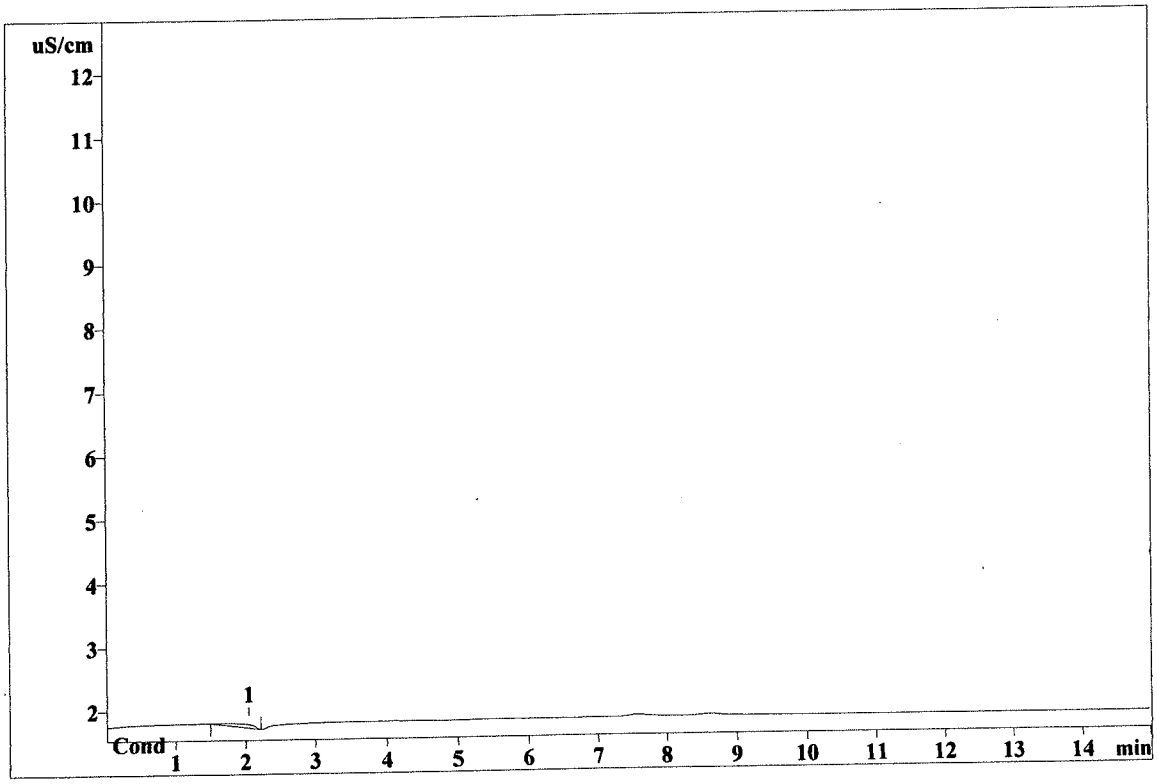
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.54	35.475	0.959	fluoride
2	4.10	4.07	46.108	2.063	chloride
3	4.76	7.49	107.034	1.989	nitrite
4	5.86	0.48	7.410	0.997	bromide
5	6.63	2.68	46.941	0.895	nitrate
6	7.56	1.87	32.816	1.771	phosphate
7	8.61	4.44	84.136	5.445	sulfate
7	15.00	24.57	359.920	14.120	

This report has been created by IC Net
METROHM LTD

Report date: 12/16/2021 9:37:41 AM
Printed by: VDuran

Ident: AL21-77 CCB29
Analysis from: 12/16/2021 9:21:38 AM
File: _2021-12-16_09-21.chw Last save: 12/16/2021 9:36:35 AM
Modified!
Method: ICD0-L13.mtw Last save: 12/15/2021 9:51:05 AM
Run operator: VDuran
Analysis number: 176816

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 77
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.03	0.06	1.497	0.000	

This report has been created by IC Net
METROHM LTD

ANALYTICAL LOG(S)

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence. For dillution preparation (sample aliquot/final volume), refer to sample info

Comments:

	CONCENTRATIONS (PPM)
S1	0.05
S2	0.1
S3	0.2
S4	0.5
S5	1.0
S6	2.0
S7	5.0
S8	10.0
S9	20.0

	LINEARITY (PPM)
F	5
Cl	10
NO_2	10
Br	20
NO_3	2
PO_4	10
SO_4	20

IC ELUENT PREPARATION Expiration Date: 01/10/22

Std ID	Aliquot	Final Vol*
SP2-04-01-03	20 mL	2 L

IC REGENERANT PREPARATION Expiration Date: 01/10/22

Std ID	Aliquot	Final Vol*
SP1-06-02-01	100 mL	1 L

* Reagent Water ID: SW1A-011-05-06

Book #: AD0-074
Instrument No.: D0
Pipette ID's: 039380124
SW3-02-02-02
439350100
Analytical Sequence: AL17
Method File: ICD0-L13.mtw
Analytical Batch: –

SOP #	Rev. #
☒ EMAX-300.0	13
☒ EMAX-4110B	6
☒ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	SW3B-20-34-02
ICV	SW3B-20-33-03
~~CCV~~ ICV1	SW3B-20-34-03
LCS	–
MS	–

Filters Lot #:
0.45 µm: –
0.22 µm: –

Snap Seal Containers Lot #:
4 oz: 1328163
1.5 oz: –

Column: Metrosep A Supp 5-100

Flow Rate: 0.70 mL/min

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: VD

Date: 12/13/21

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
2021-12-13_16-35.chw	ICD0-L13.mtw	AL17-01 IB	1	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-13_16-52.chw	ICD0-L13.mtw	AL17-02 S0	2	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-13_17-09.chw	ICD0-L13.mtw	AL17-03 S1	3	1.0	1.0	1.0	100.0	1	METHOD 300/9056/4110B	0.05 PPM
2021-12-13_17-26.chw	ICD0-L13.mtw	AL17-04 S2	4	1.0	1.0	1.0	100.0	2	METHOD 300/9056/4110B	0.1 PPM
2021-12-13_17-43.chw	ICD0-L13.mtw	AL17-05 S3	5	1.0	1.0	1.0	100.0	3	METHOD 300/9056/4110B	0.2 PPM
2021-12-13_18-00.chw	ICD0-L13.mtw	AL17-06 S4	6	1.0	1.0	1.0	100.0	4	METHOD 300/9056/4110B	0.5 PPM
2021-12-13_18-17.chw	ICD0-L13.mtw	AL17-07 S5	7	1.0	1.0	1.0	100.0	5	METHOD 300/9056/4110B	1.0 PPM
2021-12-13_18-34.chw	ICD0-L13.mtw	AL17-08 S6	8	1.0	1.0	1.0	100.0	6	METHOD 300/9056/4110B	2.0 PPM
2021-12-13_18-52.chw	ICD0-L13.mtw	AL17-09 S7	9	1.0	1.0	1.0	100.0	7	METHOD 300/9056/4110B	5.0 PPM
2021-12-13_19-09.chw	ICD0-L13.mtw	AL17-10 S8	10	1.0	1.0	1.0	100.0	8	METHOD 300/9056/4110B	10.0 PPM
2021-12-13_19-26.chw	ICD0-L13.mtw	AL17-11 S9	11	1.0	1.0	1.0	100.0	9	METHOD 300/9056/4110B	20.0 PPM
2021-12-13_19-43.chw	ICD0-L13.mtw	AL17-12 ICV	12	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-13_20-00.chw	ICD0-L13.mtw	AL17-13 ICV1	13	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	1.0 PPM
2021-12-13_20-17.chw	ICD0-L13.mtw	AL17-14 ICB	14	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	

FINAL VD 12/14/21

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence. For dillution preparation (sample aliquot/final volume), refer to sample info

Comments:

Book #:	AD0-074
Instrument No.:	D0
Pipette ID's:	039380124
	SW3-02-02-02
	439350100
Analytical Sequence:	AL21
Method File:	IC00-L13.mtw
Analytical Batch:	ICL019W1 ICL001S

SOP #	Rev. #
☑ EMAX-300.0	13
☐ EMAX-4110B	6
☐ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	—
ICV	—
CCV	SW3B-20-35-03
LCS	SW3B-20-36-01
MS	SCP refer to LCS Parent ID

Filters Lot #: Snap Seal Containers Lot #:

0.45 µm: 210081103 4 oz:

0.22 µm: 210940103 1.5 oz: 2421009

Column: Metrosep A Supp 5-100

Flow Rate: 0.70 mL/min

IC ELUENT PREPARATION Expiration Date: 01/15/22

Std ID	Aliquot	Final Vol*
SP2-04-01-03	20 mL	2 L

IC REGENERANT PREPARATION Expiration Date: 01/14/21

Std ID	Aliquot	Final Vol*
SP2-06-01-01	100 mL	1 L

* Reagent Water ID: SW1A-011-05-06

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: VD

Date: 12/15/21

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
2021-12-15_10-08.chw	ICD0-L13.mtw	AL21-01 CCV13	1	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_10-25.chw	ICD0-L13.mtw	AL21-02 CCB13	2	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_10-42.chw	ICD0-L13.mtw	AL21-03 ICL019WB	3	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_10-59.chw	ICD0-L13.mtw	AL21-04 ICL019WL	4	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_11-16.chw	ICD0-L13.mtw	AL21-05 ICL019WC	5	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_11-58.chw	ICD0-L13.mtw	AL21-06 CCV15	6	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_12-15.chw	ICD0-L13.mtw	AL21-07 CCB15	7	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_12-33.chw	ICD0-L13.mtw	AL21-08 L159-23I DF=20	8	1.0	20.0	1.0	100.0	0	METHOD 300/9056/4110B	2ml/40ml, HIGH CONDUCTIVITY
2021-12-15_12-50.chw	ICD0-L13.mtw	AL21-09 L159-05	9	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_13-07.chw	ICD0-L13.mtw	AL21-10 L159-06	10	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_13-24.chw	ICD0-L13.mtw	AL21-11 L159-07	11	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_13-42.chw	ICD0-L13.mtw	AL21-12 L159-08I DF=5	12	1.0	5.0	1.0	100.0	0	METHOD 300/9056/4110B	4ml/20ml, HIGH CONDUCTIVITY
2021-12-15_13-59.chw	ICD0-L13.mtw	AL21-13 L159-10I DF=10	13	1.0	10.0	1.0	100.0	0	METHOD 300/9056/4110B	2ml/20ml, HIGH CONDUCTIVITY
2021-12-15_14-16.chw	ICD0-L13.mtw	AL21-14 L159-11I DF=5	14	1.0	5.0	1.0	100.0	0	METHOD 300/9056/4110B	4ml/20ml, HIGH CONDUCTIVITY
2021-12-15_14-33.chw	ICD0-L13.mtw	AL21-15 L159-12	15	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_14-50.chw	ICD0-L13.mtw	AL21-16 L159-14	16	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_15-07.chw	ICD0-L13.mtw	AL21-17 L159-16I DF=5	17	1.0	5.0	1.0	100.0	0	METHOD 300/9056/4110B	4ml/20ml, HIGH CONDUCTIVITY
2021-12-15_15-24.chw	ICD0-L13.mtw	AL21-18 CCV17	18	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_15-41.chw	ICD0-L13.mtw	AL21-19 CCB17	19	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_15-58.chw	ICD0-L13.mtw	AL21-20 L159-18I DF=10	20	1.0	10.0	1.0	100.0	0	METHOD 300/9056/4110B	2ml/20ml, HIGH CONDUCTIVITY
2021-12-15_16-15.chw	ICD0-L13.mtw	AL21-21 L159-20	21	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_16-32.chw	ICD0-L13.mtw	AL21-22 L159-21	22	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_16-49.chw	ICD0-L13.mtw	AL21-23 L159-22I DF=5	23	1.0	5.0	1.0	100.0	0	METHOD 300/9056/4110B	4ml/20ml, HIGH CONDUCTIVITY
2021-12-15_17-07.chw	ICD0-L13.mtw	AL21-24 L159-23ID DF=20	24	1.0	20.0	1.0	100.0	0	METHOD 300/9056/4110B	2ml/40ml, HIGH CONDUCTIVITY
2021-12-15_17-24.chw	ICD0-L13.mtw	AL21-25 L159-23IM DF=20	25	1.0	20.0	1.0	100.0	0	METHOD 300/9056/4110B	2ml/40ml, HIGH CONDUCTIVITY
2021-12-15_17-41.chw	ICD0-L13.mtw	AL21-26 L159-23IS DF=20	26	1.0	20.0	1.0	100.0	0	METHOD 300/9056/4110B	2ml/40ml, HIGH CONDUCTIVITY
2021-12-15_18-16.chw	ICD0-L13.mtw	AL21-27 L159-12I DF=2	27	1.0	2.0	1.0	100.0	0	METHOD 300/9056/4110B	10ml/20ml
2021-12-15_18-33.chw	ICD0-L13.mtw	AL21-28 L159-14I DF=5	28	1.0	5.0	1.0	100.0	0	METHOD 300/9056/4110B	4ml/20ml
2021-12-15_18-50.chw	ICD0-L13.mtw	AL21-29 L159-21I DF=2	29	1.0	2.0	1.0	100.0	0	METHOD 300/9056/4110B	10ml/20ml
2021-12-15_19-07.chw	ICD0-L13.mtw	AL21-30 CCV19	30	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_19-24.chw	ICD0-L13.mtw	AL21-31 CCB19	31	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_19-41.chw	ICD0-L13.mtw	AL21-32 L146-02T DF=40	32	1.0	40.0	1.0	100.0	0	METHOD 300/9056/4110B	1ml/40ml
2021-12-15_19-58.chw	ICD0-L13.mtw	AL21-33 L146-02TD DF=40	33	1.0	40.0	1.0	100.0	0	METHOD 300/9056/4110B	1ml/40ml
2021-12-15_20-15.chw	ICD0-L13.mtw	AL21-34 L146-02TM DF=40	34	1.0	40.0	1.0	100.0	0	METHOD 300/9056/4110B	1ml/40ml
2021-12-15_20-32.chw	ICD0-L13.mtw	AL21-35 L146-02TS DF=40	35	1.0	40.0	1.0	100.0	0	METHOD 300/9056/4110B	1ml/40ml
2021-12-15_20-49.chw	ICD0-L13.mtw	AL21-36 CCV21	36	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_21-07.chw	ICD0-L13.mtw	AL21-37 CCB21	37	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_21-41.chw	ICD0-L13.mtw	AL21-38 ICL001SB	38	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_22-15.chw	ICD0-L13.mtw	AL21-39 ICL001SL	39	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_22-49.chw	ICD0-L13.mtw	AL21-40 ICL001SC	40	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_23-06.chw	ICD0-L13.mtw	AL21-41 L118-01	41	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_23-23.chw	ICD0-L13.mtw	AL21-42 L118-01D	42	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_23-40.chw	ICD0-L13.mtw	AL21-43 L118-01M	43	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-15_23-57.chw	ICD0-L13.mtw	AL21-44 L118-01S	44	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_00-14.chw	ICD0-L13.mtw	AL21-45 L118-02	45	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_00-32.chw	ICD0-L13.mtw	AL21-46 L118-03	46	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_00-49.chw	ICD0-L13.mtw	AL21-47 L118-04	47	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_01-06.chw	ICD0-L13.mtw	AL21-48 CCV23	48	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_01-23.chw	ICD0-L13.mtw	AL21-49 CCB23	49	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_01-40.chw	ICD0-L13.mtw	AL21-50 L118-05	50	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_01-57.chw	ICD0-L13.mtw	AL21-51 L118-06	51	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_02-14.chw	ICD0-L13.mtw	AL21-52 L118-07	52	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_02-31.chw	ICD0-L13.mtw	AL21-53 L118-08	53	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_02-48.chw	ICD0-L13.mtw	AL21-54 L118-09	54	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_03-05.chw	ICD0-L13.mtw	AL21-55 L118-10	55	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_03-22.chw	ICD0-L13.mtw	AL21-56 L118-10I DF=20	56	1.0	20.0	1.0	100.0	0	METHOD 300/9056/4110B	1ml/20ml
2021-12-16_03-39.chw	ICD0-L13.mtw	AL21-57 L118-11	57	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_03-57.chw	ICD0-L13.mtw	AL21-58 L118-12	58	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_04-14.chw	ICD0-L13.mtw	AL21-59 L118-13	59	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
2021-12-16_04-31.chw	ICD0-L13.mtw	AL21-60 CCV25	60	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_04-48.chw	ICD0-L13.mtw	AL21-61 CCB25	61	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_05-05.chw	ICD0-L13.mtw	AL21-62 L118-14	62	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_05-22.chw	ICD0-L13.mtw	AL21-63 L118-15	63	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_05-39.chw	ICD0-L13.mtw	AL21-64 L118-16	64	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_05-56.chw	ICD0-L13.mtw	AL21-65 L118-16I DF=20	65	1.0	20.0	1.0	100.0	0	METHOD 300/9056/4110B	1ml/20ml
2021-12-16_06-13.chw	ICD0-L13.mtw	AL21-66 L118-17	66	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_06-30.chw	ICD0-L13.mtw	AL21-67 L118-18	67	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_06-47.chw	ICD0-L13.mtw	AL21-68 L118-19	68	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_07-04.chw	ICD0-L13.mtw	AL21-69 L118-20	69	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_07-22.chw	ICD0-L13.mtw	AL21-70 L118-01I DF=2	70	1.0	2.0	1.0	100.0	0	METHOD 300/9056/4110B	10ml/20ml
2021-12-16_07-39.chw	ICD0-L13.mtw	AL21-71 L118-01ID DF=2	71	1.0	2.0	1.0	100.0	0	METHOD 300/9056/4110B	10ml/20ml
2021-12-16_07-56.chw	ICD0-L13.mtw	AL21-72 CCV27	72	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_08-13.chw	ICD0-L13.mtw	AL21-73 CCB27	73	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_08-30.chw	ICD0-L13.mtw	AL21-74 L118-01IM DF=2	74	1.0	2.0	1.0	100.0	0	METHOD 300/9056/4110B	10ml/20ml
2021-12-16_08-47.chw	ICD0-L13.mtw	AL21-75 L118-01IS DF=2	75	1.0	2.0	1.0	100.0	0	METHOD 300/9056/4110B	10ml/20ml
2021-12-16_09-04.chw	ICD0-L13.mtw	AL21-76 CCV29	76	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2021-12-16_09-21.chw	ICD0-L13.mtw	AL21-77 CCB29	77	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	

FINAL VD 12/16/21

RETENTION TIME WINDOW

TWENTY FOUR HOUR RETENTION TIME WINDOW
METHOD 300.0

Lab name: EMAX **Method:** EMAX-300.0

Instrument ID: D0 (761 IC) **IC column:** METROSEP A SUPP 5
Column size: 100X4.0mm

Compound	ICAL Mean RT	from	to	RTW
FLUORIDE	**3.11**	2.98	3.25	**0.137**
CHLORIDE	**4.28**	4.10	4.46	**0.181**
NITRITE	**4.98**	4.78	5.17	**0.195**
BROMIDE	**6.13**	5.89	6.37	**0.238**
NITRATE	**6.92**	6.59	7.26	**0.335**
PHOSPHATE	**9.11**	8.85	9.36	**0.256**
SULFATE	**10.41**	10.09	10.74	**0.321**

ICD0-L13.mtw

RETENTION TIME WINDOW
METHOD 300.0

Lab name:	**EMAX**	**Method:**	**EMAX-300.0**
Instrument ID:	D0 (761 IC)	IC column: Column size:	METROSEP A SUPP 5 100X4.0mm

Compound		Retention time Window
FLUORIDE	**(+/-)**	**0.090**
CHLORIDE	**(+/-)**	**0.104**
NITRITE	**(+/-)**	**0.159**
BROMIDE	**(+/-)**	**0.329**
NITRATE	**(+/-)**	**0.420**
PHOSPHATE	**(+/-)**	**0.528**
SULFATE	**(+/-)**	**0.797**
IODIDE	**(+/-)**	**0.652**

AA
06/03/14

STANDARD LOGS

Book No: SW3B-20

Parent ID	Parent Std Name	Conc.	Aliquot	Final Conc.	Micropipette
VD 12/14/21 ~~SW3-02~~ ~~SW3A-03~~ 07-11	F^- ☐	1000 PPM	0.2 mL	1 PPM	A
-07-13	NO_2N ☑		0.4	2	
-07-01	NO_3N ☑		0.2	1	
-06-29	PO_4P ☑		0.4	2	
-06-30	Br^- ☑		0.2	1	
-07-10	Cl^- ☑		0.4	2	
-07-12	SO_4^{-2} ☑		1.0	5	B
	BrO_3^- ☐				
	ClO_3^- ☐				
					VD 12/14/21

Standard ID	SW3B-20-35-01
Name	CCV
Final Volume	200 mL
Solvent	Reagent Water
Solvent ID	SWIA-011-05-07
Prep. Date	12/14/21
Exp. Date	12/15/21
Prepared By	VD

Comments:

Parent ID	Parent Std Name	Conc.	Aliquot	Final Conc.	Micropipette
SW3A-03-01-04	F^- ☑	1000 PPM	0.2 mL	1 PPM	A
SW3-02-07-05	NO_2N ☑	996	0.4	2	
SW3-02-07-07	NO_3N ☑	1004	0.199	1	
SW3A-03-01-03	PO_4P ☑	1004	0.398	2	
SW3A-03-01-05	Br^- ☐	1004	0.199	1	
SW3A-03-01-06	Cl^- ☑	991	0.4	2	
SW3A-03-01-02	SO_4^{-2} ☑	1003	1.0	5	B
	BrO_3 ☐				
	ClO_3^- ☐				
					VD 12/14/21

Standard ID	SW3B-20-35-02
Name	LCS
Final Volume	200 mL
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Prep. Date	12/14/21
Exp. Date	12/15/21
Prepared By	VD

Comments:

Parent ID	Parent Std Name	Conc.	Aliquot	Final Conc.	Micropipette
12/15/21 ~~SW3-02~~ ~~SW3A-03~~ 07-11	F^- ☑	1000 PPM	0.2 mL	1 PPM	A
-07-13	NO_2N ☑		0.4	2	
-07-01	NO_3N ☑		0.2	1	
-06-29	PO_4P ☑		0.4	2	
-06-30	Br^- ☑		0.2	1	
-07-10	Cl^- ☑		0.4	2	
-07-12	SO_4^{-2} ☑		1.0	5	B
	BrO_3 ☐				
	ClO_3^- ☐				
					VD 12/15/21

Standard ID	SW3B-20-35-03
Name	CCV
Final Volume	200 mL
Solvent	Reagent Water
Solvent ID	SWIA-011-05-06
Prep. Date	12/15/21
Exp. Date	12/16/21
Prepared By	VD

Comments:

Micropipette ID: A.: 439350100 B.: SW3-02-02-02 C.: 039380124 D.: 39380025 E.: SW3-01-33 F.: SI1A-04-4

☑ Standards Used

Book No: SW3B-20

Parent ID	Parent Std Name	Conc.	Aliquot	Final Conc.	Micropipette
SW3A-03- 01 - 04	F^- ☑	1000 PPM	0.2 mL	1 PPM	A
SW3-02-07-05	NO_2N ☑	996	0.4	2	
SW3-02-07-07	NO_3N ☑	1004	0.199	1	
SW3A-03-01-03	PO_4P ☑	1004	0.398	2	
SW3A-03-01-05	Br^- ☑	1004	0.199	1	
SW3A-03-01-06	Cl^- ☑	991	0.4	2	
SW3A-03-01-02	SO_4^{-2} ☑	1003	1.0	5	B
	BrO_3^- ☐				
	ClO_3^- ☐				
					VD 12/15/21

Standard ID	SW3B-20-36-01
Name	LCS
Final Volume	200mL
Solvent	Reagent Water
Solvent ID	SW1A-011-05-06
Prep. Date	12/15/21
Exp. Date	12/16/21
Prepared By	VD

Comments:

Parent ID	Parent Std Name	Conc.	Aliquot	Final Conc.	Micropipette
SW3A-03- -	F^- ☐				
	NO_2N ☐				
	NO_3N ☐				
	PO_4P ☐				
	Br^- ☐				
	Cl^- ☐				
	SO_4^{-2} ☐				
	BrO_3^- ☐				
	ClO_3^- ☐				

Standard ID	SW3B-20-36-02
Name	
Final Volume	
Solvent	Reagent Water
Solvent ID	
Prep. Date	
Exp. Date	
Prepared By	

Comments:

Parent ID	Parent Std Name	Conc.	Aliquot	Final Conc.	Micropipette
SW3A-03- -	F^- ☐				
	NO_2N ☐				
	NO_3N ☐				
	PO_4P ☐				
	Br^- ☐				
	Cl^- ☐				
	SO_4^{-2} ☐				
	BrO_3^- ☐				
	ClO_3^- ☐				

Standard ID	SW3B-20-36-03
Name	
Final Volume	
Solvent	Reagent Water
Solvent ID	
Prep. Date	
Exp. Date	
Prepared By	

Comments:

Micropipette ID: A.: 439350100 B.: SW3-02-02-02 C.: 039380124 D.: 39380025 E.: SW3-01-33 F.: SI1A-04-4

☑ Standards Used

Book No: SW3B-20

Parent ID	Parent Std Name	Conc.	Aliquot	Final Conc.	Micropipette
SW3A-03- 01 - 04	F^- ☑	1000 PPM	0.2 mL	1 PPM	A
SW3-02-07-05	NO_2N ☑	996	0.4	2	
SW3-02-07-07	NO_3N ☑	1004	0.199	1	
SW3A-03-01-03	PO_4P ☑	1004	0.398	2	
SW3A-03-01-05	Br^- ☑	1004	0.199	1	
SW3A-03-01-06	Cl^- ☑	991	0.4	2	
SW3A-03-01-02	SO_4^{-2} ☑	1003	1.0	5	B
	BrO_3^- ☐				
	ClO_3^- ☐				
					VD 12/10/21

Standard ID	SW3B-20-33-01
Name	LCS
Final Volume	200 mL
Solvent	Reagent Water
Solvent ID	SW1A-011-05-07
Prep. Date	12/10/21
Exp. Date	12/11/21
Prepared By	VD

Comments:

Parent ID	Parent Std Name	Conc.	Aliquot	Final Conc.	Micropipette
~~SW3-02 SW3A-03~~ 07 - 11	F^- ☑	1000 PPM	0.2 mL	1 PPM	A
- 07-13	NO_2N ☑		0.4	2	
- 07-01	NO_3N ☑		0.2	1	
- 06-29	PO_4P ☑		0.4	2	
- 06-30	Br^- ☑		0.2	1	
- 07-10	Cl^- ☑		0.4	2	
- 07-12	SO_4^{-2} ☑		1.0	5	B
	BrO_3^- ☐				
	ClO_3^- ☐				
					VD 12/13/21

12/13/21

Standard ID	SW3B-20-33-02
Name	CCV
Final Volume	200mL
Solvent	Reagent Water
Solvent ID	SW1A-011-05-06
Prep. Date	12/13/21
Exp. Date	12/14/21
Prepared By	VD

Comments:

Parent ID	Parent Std Name	Conc.	Aliquot	Final Conc.	Micropipette
SW3A-03- 01 - 04	F^- ☑	1000 PPM	0.2 mL	1 PPM	A
SW3-02-07-05	NO_2N ☑	996	0.4	2	
SW3-02-07-07	NO_3N ☑	1004	0.199	1	
SW3A-03-01-03	PO_4P ☑	1004	0.398	2	
SW3A-03-01-05	Br^- ☑	1004	0.199	1	
SW3A-03-01-06	Cl^- ☑	991	0.4	2	
SW3A-03-01-02	SO_4^{-2} ☑	1003	1.0	5	B
	BrO_3^- ☐				
	ClO_3^- ☐				
					VD 12/13/21

Standard ID	SW3B-20-33-03
Name	LCS / ICV
Final Volume	200mL
Solvent	Reagent Water
Solvent ID	SW1A-011-05-06
Prep. Date	12/13/21
Exp. Date	12/14/21
Prepared By	VD

Comments:

Micropipette ID: A.: 439350100 B.: SW3-02-02-02 C.: 039380124 D.: 39380025 E.: SW3-01-33 F.: SI1A-04-4

☑ Standards Used

Book No: SW3B-20

Parent ID	Parent Std Name	Conc.	Aliquot	Final Conc.	Micropipette
~~SW3-02~~ ~~SW3A-03-~~ 07-11	F^- ☑	1000 PPM	10 mL	100 PPM	C
-07-13	NO_2N ☑				
-07-01	NO_3N ☑				
-06-29	PO_4P ☑				
-06-30	Br^- ☑				
-07-10	Cl^- ☑				
-07-12	SO_4^{-2} ☑				
	BrO_3^- ☐				
	ClO_3^- ☐				
					VD 12/13/21

Standard ID	SW3B-20-34-01
Name	ERA MIX
Final Volume	100 mL
Solvent	Reagent Water
Solvent ID	SW1A-011-05-06
Prep. Date	12/13/21
Exp. Date	12/14/21
Prepared By	VD

Comments:

Parent ID	Parent Std Name	Conc.	Aliquot	Final Conc.	Micropipette
~~SW3B-20-34-01~~ ~~SW3A-03-~~	F^- ☑	100 PPM	0.05 mL	0.05 PPM	A
	NO_2N ☑		0.1		A
	NO_3N ☑		0.2		A
	PO_4P ☑		0.5		B
	Br^- ☑		1.0		B
	Cl^- ☑		2.0		B
	SO_4^{-2} ☑		5.0		C
	BrO_3^- ☐		10.0		C
	ClO_3^- ☐		20.0		C
					VD 12/13/21

Standard ID	SW3B-20-34-02
Name	ICAL
Final Volume	100 mL
Solvent	Reagent Water
Solvent ID	SW1A-011-05-06
Prep. Date	12/13/21
Exp. Date	12/14/21
Prepared By	VD

Comments:

Parent ID	Parent Std Name	Conc.	Aliquot	Final Conc.	Micropipette
SW3A-03-01-04	F^- ☑	1000 PPM	0.1 mL	1 PPM	A
SW3-02-07-05	NO_2N ☑	996			
SW3-02-07-07	NO_3N ☑	1004			
SW3A-03-01-03	PO_4P ☑	1004			
SW3A-03-01-05	Br^- ☑	1004			
SW3A-03-01-06	Cl^- ☑	991			
SW3A-03-01-02	SO_4^{-2} ☑	1003			
	BrO_3^- ☐				
	ClO_3^- ☐				
					VD 12/13/21

Standard ID	SW3B-20-34-03
Name	ICV1
Final Volume	100 mL
Solvent	Reagent Water
Solvent ID	SW1A-011-05-06
Prep. Date	12/13/21
Exp. Date	12/14/21
Prepared By	VD

Comments:

Micropipette ID: A.: 439350100 B.: SW3-02-02-02 C.: 039380124 D.: 39380025 E.: SW3-01-33 F.: SI1A-04-4

☑ Standards Used

EMAX LABORATORIES, INC.

STANDARDS LOG FOR ION CHROMATOGRAPHY

Book No: SW3A-03

Standard ID	Name	Source	Lot #	Location	Rcvd. on	Rcvd. By	Exp. Date	Comments
SW3A-03-01-01	Nitrate	SCP Science	5210511001	IC	08/02/21	VD	02/01/23	opened exp. date:
SW3A-03-01-02	Sulfate	SCP Science	S 210625008	IC	08/02/21	VD	04/01/23	opened exp. date: 11/05/22
SW3A-03-01-03	Phosphate	SCP Science	S200709008	IC	04/02/21	VD	04/01/22	opened exp date: 08/31/22
SW3A-03-01-04	Fluoride	SCP Science	S210122001	IC	04/02/21	VD	10/01/22	opened exp. date 10/01/21
SW3A-03-01-05	Bromide	SCP Science	S201127003	IC	04/02/21	VD	09/01/22	opened exp. date: 08/31/22
SW3A-03-01-06	Chloride	SCP Science	S210318024	IC	06/21/21	VD	12/01/22	opened exp. date: 11/01/22
SW3A-03-01-07	Nitrite	SCP Science	S210223040	IC	06/21/21	VD	12/01/22	opened exp. date:
SW3A-03-01-08	Sulfate	ERA	060720m	IC	06/14/21	VD	07/06/22	
SW3A-03-01-09	Chloride	ERA	080121m	IC	06/14/21	VD	01/08/23	
SW3A-03-01-10	Nitrite	ERA	120421m	IC	06/14/21	VD	04/07/23	

EMAX LABORATORIES, INC.

STANDARDS PURCHASE LOG FOR IC

Book No: SW3-02

Standard ID	Name	Source	Lot #	Location	Rcvd. on	Rcvd. by	Exp. Date	Comments
SW3-02-06-01	CHLORATE	ERA	500519m	IC	09/11/19	LD	05/24/21	
SW3-02-06-02	PHOSPHATE	ERA	080719m	IC	10/07/19	LD	07/10/21	
SW3-02-06-03	SULFATE	SCP SCIENCE	S190913029	IC	10/11/19	LD	06/01/21	OPENED EXP. DATE 12/04/20
SW3-02-06-04	PHOSPHATE	SCP SCIENCE	S190827034	IC	10/11/19	LD	01/01/21	OPENED EXP DATE 01/01/21
SW3-02-06-05	Metrosep A supp 5-100/4.0	METROHM	S/N: 5180810097	IC	01/14/19	LD	—	DATE USED: 02/11/19
SW3-02-06-06	Metrosep A supp 5-150/4.0	METROHM	S/N: S180915001	IC	01/04/19	LD	—	DATE USED: 03/21/19
SW3-02-06-07	METROSEP A supp 5-100/4.0	METROHM	S/N: S180910010	IC	02/21/19	LD	—	DATE IN USE: 07/23/20
SW3-02-06-08	METROSEP A supp 5-150/4.0	METROHM	S/N: S181015190	IC	03/26/19	LD	—	DATE IN USE: 11/12/19
SW3-02-06-09	METROSEP A supp 5-150/4.0	METROHM	S/N: S190415073	IC	11/22/19	LD	—	DATE IN USE: 2/14/20
SW3-02-06-10	NITRITE	ERA	511118m	IC	12/06/19	LD	3/11/21	
SW3-02-06-11	Chlorate	SCP SCIENCE	S191009001	IC	12/11/19	LD/TW	07/01/21	OPENED EXP. DATE 07/8/21 1/28/21
SW3-02-06-12	Nitrate	SCP SCIENCE	S190813002	IC	12/11/19	LD/TW	05/01/21	OPENED EXP. DATE @5/1/2021
SW3-02-06-13	Chloride	SCP SCIENCE	S191015047	IC	12/11/19	LD/TW	7/01/21	OPENED EXP. DATE 7/1/21
SW3-02-06-14	oxalic acid dihydrate, 98%.	Alfa Aesar	10218563	IC	01/16/20	LD	01/16/30	1 x 1000 g
SW3-02-06-15	BROMATE	SCP	S190816l2	IC	01/22/20	LD	05/2021	opened EXP DATE: 2/18/21
SW3-02-06-16	NITRITE	SCP	S19101033	IC	01/28/20	LD	07/2021	OPENED EXP DATE: @7/1/2021
SW3-02-06-17	SULFATE	SCP	S190923029	IC	01/28/20	LD	06/2021	OPENED EXP DATE: 4/23/2021
SW3-02-06-18	BROMATE	ERA	460220m	IC	2/27/20	LD	02/21/22	opened: 3/10/20
SW3-02-06-19	METROSEP A supp 5-150/4.0	METROHM	S/N: S190615244	IC	2/27/20	LD	—	DATE IN USE: 11/13/20
SW3-02-06-20	Fluoride	ERA	010619m	IC	3/20/20	JC	6/3/2021	
SW3-02-06-21	Nitrate	ERA	190220m	IC	3/20/20	JC	2/10/2022	
SW3-02-06-22	Sulfate	ERA	100819m	IC	3/20/20	JC	8/6/2021	
SW3-02-06-23	Bromide	SCP	S200413026	IC	5/19/20	TW	01/01/2022	OPENED EXP. DATE @9/1/2021
SW3-02-06-24	Phosphate	SCP	S191125022	IC	5/19/20	TW	09/01/2021	OPENED EXP. DATE: 9/1/21
SW3-02-06-25	Fluoride	SCP	S200229008	IC	5/19/20	TW	12/12/2021	OPENED EXP. DATE 10/01/21
SW3-02-06-26	SULFATE	SCP	S200625036	IC	7/22/20	LD	04/01/22	OPENED EXP DATE: 9/9/2021
SW3-02-06-27	CHLORIDE	SCP	S200218022	IC	7/22/20	LD	11/01/21	OPENED EXP DATE:
SW3-02-06-28	METROSEP A supp 5-100/4.0	METROHM	S/N: S200110062	IC	7/31/20	LD	—	DATE USED: 10/26/20
SW3-02-06-29	PHOSPHATE	ERA	2120520m	IC	11/3/20	LD	5/28/2022	
SW3-02-06-30	BROMIDE	ERA	050720m	IC	11/3/20	LD	7/6/2022	

EMAX LABORATORIES, INC.

STANDARDS PURCHASE LOG FOR IC

Book No: SW3-02

Standard ID	Name	Source	Lot #	Location	Rcvd. on	Rcvd. by	Exp. Date	Comments
SW3-02-07-01	NITRATE	ERA	190220m	IC	11/3/20	Lo	7/10/2022	
SW3-02-07-02	METROSEP A SUPP-5 100/4.0	METROHM	S/N = S200410048	IC	11/6/20	Lo	——	DATE IN USE 01/15/21
SW3-02-07-03	METROSEP A SUPP-5 150/4.0	METROHM	S/N: S200215086	IC	11/30/20	Lo	——	DATE IN USE [illegible]
SW3-02-07-04	CHLORATE	SCP SCIENCE	S200914018	IC	11/30/20	Lo	06/1/2022	DATE 1st USED OPENED EXP DATE 4/13/22
SW3-02-07-05	NITRITE	SCP SCIENCE	S200929013	IC	11/30/20	Lo	07/1/2022	OPENED EXP ON 8/9/22
SW3-02-07-06	SULFATE	SCP SCIENCE	S201103005	IC	11/30/20	Lo	08/1/2022	OPENED EXP ON 03/05/22
SW3-02-07-07	NITRATE	SCP SCIENCE	S200917004	IC	11/30/20	Lo	6/1/2022	OPENED EXP ON
SW3-02-07-08	BROMATE	SCP SCIENCE	S200601014	IC	11/30/20	Lo	3/1/2022	OPENED EXP ON 3/1/22
SW3-02-07-09	Metrosep A Supp 5-100/4.0	Metrohm	S/N = S20011002 7	IC	01/27/21	TW	——	Date in use :
SW3-02-07-10	Chloride	ERA	480320m	IC	02/03/21	TW	05/24/22	Opened Exp. d
SW3-02-07-11	Fluoride	ERA	590420m	IC	02/3/21	TW	04/29/22	Opened Exp date
SW3-02-07-12	Sulfate	ERA	060720m	IC	2/3/21	TW	07/6/22	Opened Exp dat
SW3-02-07-13	Nitrite	ERA	291020m	IC	2/3/21	TW	10/21/22	Opened Exp dat 3/12/22
SW3-02-07-14	Chlorate	ERA	420420m	IC	2/3/21	TW	4/22/22	
SW3-02-07-15	Bromide	SCP Science	S201127003	IC	4/2/21 3/22/22 TW added	TW	9/1/22	Opened Exp date NEW ID
SW3-02-07-16	Sulfate	SCP Science	S201103005	IC	4/2/21 3/22/22 TW added	TW	9/1/22	Opened Exp dat
SW3-02-07-17	Fluoride	SCP Science	S210122001	IC	4/2/21 3/22/22 TW added	TW	10/1/22	Opened Exp date NEW ID
SW3-02-07-18	Phosphate	SCP Science	S200709008	IC	4/2/21 3/22/22 TW added	TW	4/1/22	Opened Exp date NEW ID
SW3-02-07-19	Metrosep A Supp 5-150/4.0	Metrohm	S/N: S200815034	IC	4/6/21	TW	—	Date in use 5/6/21
SW3-02-07-20	Metrosep A Supp 5-100/4.0	Metrohm	S/N: S200510004	IC	5/6/21	TW	—	Date in use.
SW3-02-07-21	Metrosep A Supp 5-150/4.0	Metrohm	S/N: S200915009	IC	5/14/21	TW	—	Date in use:
SW3-02-07-22	Metrosep A Supp 5-100/4.0	Metrohm	S/N: S200710023	IC	6/3/21	TW	—	Date in use:
SW3-02-07-23	Sulfate	ERA	060720m	IC	6/14/21	TW	07/06/2022	NEW ID
SW3-02-07-24	Chloride	ERA	080121m	IC	6/14/21	TW	01/08/2023	NEW ID
SW3-02-07-25	Nitrite	ERA	120421m	IC	6/14/21	TW	04/07/2023 TW added	NEW ID
SW3-02-07-26	Nitrate	ERA	420121m	IC	6/14/21	TW	01/20/2023	NEW ID
SW3-02-07-27	Chloride	SCP Science	S210318024	IC	6/21/21	TW	12/1/22	Opened Exp da NEW ID
SW3-02-07-28	Nitrite	SCP Science	S210223040	IC	6/21/21	TW	12/1/22	Opened Exp dd NEW ID
SW3-02-07-29	Sea Sand	Sigma Aldrich TASH5112034 TW added	TASH5112034	IC	6/30/21	TW	2/28/25	
SW3-02-07-30	Nitrate	SCP Science	S210511001	IC	08/02/21	VD	02/01/23	opened Exp Date:

* SW3-02-07-23, SW3-02-07-24, SW3-02-07-25, SW3-02-07-26, SW3-02-07-27, SW3-02-07-28, VD 08/16/21

SW3-02-07-11

Rec: 2/3/21
Exp: 4/29/22

Certificate of Analysis

PRODUCT:	1000 mg/L Fluoride
CATALOG NUMBER:	050 -125 mL; 989 - 500 mL
LOT NUMBER:	590420m
ISSUE DATE:	May 8, 2020
REVISION DATE:	Original
STARTING MATERIAL:	Potassium Fluoride (KF)
CERTIFIED CONCENTRATION[1]:	1000 mg/L
UNCERTAINTY[2]:	2.4%
MATRIX:	18 megohm deionized water
DENSITY:	1.0132 ± 0.0005 g/mL at 19.5°C and 761 mm Hg
TRACEABILITY[3]:	98.0%
NIST/SRM:	3183 Fluoride
VERIFICATION METHOD:	Ion Chromatography
STORAGE:	Store at 20-25°C

1. The Certified Concentration is the actual made-to concentration confirmed by ERA analytical verification.

2. The stated Uncertainty is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation of the product and includes uncertainty related to the starting material used and the volumetric and gravimetric measurements made. The method of calculating uncertainty is taken from the ISO Guide to the Expression of Uncertainty in Measurement (current version). The uncertainty applies to the product as supplied and does not take into account any required or optional dilutions and/or preparations the laboratory may perform while using this product.

3. Traceability ((% Recovery Certified Standard)/(% Recovery NIST SRM))* 100.

   The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs. Where a NIST SRM is not available, the product is metrologically traceable through an unbroken chain of calibrations to NIST weights, each having stated uncertainties and utilizing measurement standards that are appropriate for the physical and/or chemical property being measured.

This standard expires 04/29/2022. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

This product is intended to be used as either a calibration standard or a quality control check of the entire analytical process for the analytes/matrix included in the standard.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or email to info@eraqc.com

Certifying Officer: Brian Miller - Product Line Manager

ISO/IEC GUIDE 34:2009 ISO/IEC 17025:2005

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SRS: 02-04-13
Rec: 2/3/21
Exp: 10/21/22

Certified Reference Material

▪ Certificate of Analysis ▪

Product:	1000 mg/L Nitrite as N (NO_2-N)
Catalog Number:	053-125mL, 990-500mL
Lot No.	291020m
Starting Material:	Sodium Nitrite ($NaNO_2$)
Matrix:	18 megohm deionized water
Density:	1.0019 ± 0.0016 g/ml at 18.4 °C and 752 mm Hg
Verification Method:	Ion Chromatography
Certificate Issue Date:	October 29, 2020
Expiration Date:	October 21, 2022
Revision Number:	Original

CERTIFICATION

Parameter	Certified Value[1]	Uncertainty[2]	NIST Traceability	
	mg/L	%	SRM Number[3]	Recovery %
Nitrite as N (NO_2-N)	1000	0.950	-	NA

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SW3-02-07-01
Rcd: 11/3/20
EXP: 2/10/22

ERA
A Waters Company

Certificate of Analysis

PRODUCT:	1000 mg/L Nitrate as N (NO_3-N)
CATALOG NUMBER:	052 -125 mL; 991 - 500 mL
LOT NUMBER:	190220m
ISSUE DATE:	February 19, 2020
REVISION DATE:	Original
STARTING MATERIAL:	Potassium Nitrate (KNO_3)
CERTIFIED CONCENTRATION[1]:	1000 mg/L
UNCERTAINTY[2]:	0.6%
MATRIX:	18 megohm deionized water
DENSITY:	0.9988 ± 0.0020 g/mL at 19.4°C and 753 mm Hg
TRACEABILITY[3]:	101%
NIST/SRM:	3185 Nitrate
VERIFICATION METHOD:	Ion Chromatography
STORAGE:	Store at 20-25°C

1. The **Certified Concentration** is the actual made-to concentration confirmed by ERA analytical verification.

2. The stated **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation of the product and includes uncertainty related to the starting material used and the volumetric and gravimetric measurements made. The method of calculating uncertainty is taken from the ISO Guide to the Expression of Uncertainty in Measurement (current version). The uncertainty applies to the product as supplied and does not take into account any required or optional dilutions and/or preparations the laboratory may perform while using this product.

3. Traceability ((% Recovery Certified Standard)/(% Recovery NIST SRM))* 100.

   The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs. Where a NIST SRM is not available, the product is metrologically traceable through an unbroken chain of calibrations to NIST weights, each having stated uncertainties and utilizing measurement standards that are appropriate for the physical and/or chemical property being measured.

This standard **expires 2/10/2022.** The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

This product is intended to be used as either a calibration standard or a quality control check of the entire analytical process for the analytes/matrix included in the standard.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or email to info@eraqc.com

Certifying Officer: Brian Miller - Product Line Manager

ISO/IEC GUIDE 34:2009
ACCREDITED
REFERENCE MATERIAL PRODUCER
CERTIFICATE NO. 1539.03

ISO/IEC 17025:2005
ACCREDITED
CHEMICAL TESTING LABORATORY
CERTIFICATE NO. 1539.02

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ERA

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SW3-02-06-29
Rcvd: 11/3/20
Exp: 5/28/22

Certified Reference Material

▪ Certificate of Analysis ▪

Product:	1000 mg/L Phosphate as P (PO_4-P)
Catalog Number:	061-125mL, 993-500mL
Lot No.	2120520m
Starting Material:	Potassium Dihydrogen Phosphate (KH_2PO_4)
Matrix:	18 megohm deionized water
Density:	1.0015 ± 0.0016 mg/L at 21.8 °C and 760 mm Hg
Verification Method:	Ion Chromatography
Certificate Issue Date:	June 19, 2020
Expiration Date:	May 28, 2022
Revision Number:	Original

CERTIFICATION

Parameter	Certified Value[1]	Uncertainty[2]	NIST Traceability	
	mg/L	%	SRM Number[3]	Recovery %
Phosphate as P (PO_4-P)	1000	1.50	3186	101

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SW3-02-06-30
Rcvd: 11/3/20
Exp: 7/6/22

ERA
A Waters Company

Certified Reference Material

▪ Certificate of Analysis ▪

Product:	1000 mg/L Bromide
Catalog Number:	046-125mL, 987-500mL
Lot No.	050720m
Starting Material:	Potassium Bromide (KBr)
Matrix:	18 megohm deionized water
Density:	0.9990 ± 0.0010 mg/L at 21.2 °C and 756 mm Hg
Verification Method:	Ion Chromatography
Certificate Issue Date:	July 14, 2020
Expiration Date:	July 6, 2022
Revision Number:	Original

CERTIFICATION

Parameter	Certified Value[1]	Uncertainty[2]	NIST Traceability	
	mg/L	%	SRM Number[3]	Recovery %
Bromide	1000	2.88	3184	102

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SW3-02-07-10

Rec: 2/3/21

Exp: 03/24/22

Certificate of Analysis

PRODUCT:	1000 mg/L Chloride
CATALOG NUMBER:	047 -125 mL; 988 - 500 mL
LOT NUMBER:	480320m
ISSUE DATE:	April 10, 2020
REVISION DATE:	Original
STARTING MATERIAL:	Sodium Chloride (NaCl)
CERTIFIED CONCENTRATION[1]:	1000 mg/L
UNCERTAINTY[2]:	0.6%
MATRIX:	18 megohm deionized water
DENSITY:	1.0010 ± 0.0020 g/mL at 18.0°C and 758 mm Hg
TRACEABILITY[3]:	95.1%
NIST/SRM:	3182 Chloride
VERIFICATION METHOD:	Ion Chromatography
STORAGE:	Store at 20-25°C

1. The **Certified Concentration** is the actual made-to concentration confirmed by ERA analytical verification.

2. The stated **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation of the product and includes uncertainty related to the starting material used and the volumetric and gravimetric measurements made. The method of calculating uncertainty is taken from the ISO Guide to the Expression of Uncertainty in Measurement (current version). The uncertainty applies to the product as supplied and does not take into account any required or optional dilutions and/or preparations the laboratory may perform while using this product.

3. Traceability ((% Recovery Certified Standard)/(% Recovery NIST SRM))* 100.

The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs. Where a NIST SRM is not available, the product is metrologically traceable through an unbroken chain of calibrations to NIST weights, each having stated uncertainties and utilizing measurement standards that are appropriate for the physical and/or chemical property being measured.

This standard **expires 03/24/2022**. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

This product is intended to be used as either a calibration standard or a quality control check of the entire analytical process for the analytes/matrix included in the standard.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or email to info@eraqc.com

Certifying Officer: Brian Miller - Product Line Manager

ISO/IEC GUIDE 34:2009 ACCREDITED
REFERENCE MATERIAL PRODUCER
CERTIFICATE NO. 1539.03

ISO/IEC 17025:2005 ACCREDITED
CHEMICAL TESTING LABORATORY
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SW3-02-07-12
Rec: 2/3/21
Exp: 7/6/22

Certified Reference Material

▪ Certificate of Analysis ▪

Product:	1000 mg/L Sulfate
Catalog Number:	062-125mL, 995-500mL
Lot No.	060720m
Starting Material:	Potassium Sulfate (K_2SO_4)
Matrix:	18 megohm deionized water
Density:	1.0001 ± 0.0010 mg/L at 21.2 °C and 755 mm Hg
Verification Method:	Ion Chromatography
Certificate Issue Date:	July 13, 2020
Expiration Date:	July 6, 2022
Revision Number:	Original

CERTIFICATION

Parameter	Certified Value[1]	Uncertainty[2]	NIST Traceability	
	mg/L	%	SRM Number[3]	Recovery %
Sulfate	1000	0.984	3181	97.7

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SW3A-03-01-04

SCP SCIENCE

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Certificate of Analysis

F⁻

1.0 DESCRIPTION: ***Accu*SPEC – IC Standard – Fluoride 1000 µg/ml**

Catalogue Number:	250-220-40x
Starting Material:	Sodium Fluoride, ACS
Lot Number:	**S210122001**
Expiration Date:	**October 2022**
	(or 12 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Certified Value:	**1000 ± 7 µg/ml**
Method of analysis:	Ion Chromatography Assay
Traceability:	NIST Standard Reference Materials 3183 Lot: 140203

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

ACCREDITED

Reference Material Producer

CERTIFICATE #28

3.0 REFERENCE VALUES:

Density:	**1.000 g/ml @ 22.5°C**

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval:	Yaling Sui, Chemist
Certification Date:	January 28, 2021

Yaling Sui

SW3-02-07-05

SCP SCIENCE

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Certificate of Analysis

NO_2^- as N

1.0 DESCRIPTION: ***Accu*SPEC – IC Standard – Nitrite as Nitrogen 1000 µg/ml**

Catalogue Number:	250-220-550/-551
Starting Material:	Sodium nitrite, ACS
Lot Number:	**S200929013**
Expiration Date (End of month):	**July 2022**
	(or 12 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Certified Value:	**996 ± 7 µg/ml**
Method of analysis:	Ion Chromatography Assay
Traceability:	Secondary Standard Reference Material

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

ACCREDITED

Reference Material Producer

3.0 REFERENCE VALUES:

Density: **1.001 g/ml @ 22.7 °C**

4.0 APPROVAL AND DATE OF CERTIFICATION:

CERTIFIED

Certification Approval: Yaling Sui, Chemist Yaling Sui 5.02

Certification Date: October 1, 2020

SW3-02-07-07
UNOPENED EXP: 06/1/2022
Rcvd: 11/30/20
LO 11/30/20

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Certificate of Analysis

NO_3^- as N

1.0 DESCRIPTION:

	***Accu*SPEC – IC Standard – Nitrate as Nitrogen 1000 µg/ml**
Catalogue Number:	250-220-520/-521
Starting Material:	Sodium Nitrate, ACS
Lot Number:	**S200917004**
Expiration Date (End of month):	**June 2022**
	(or 12 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Certified Value:	**1004 ± 6 µg/ml**
Method of analysis:	Ion Chromatography Assay
Traceability:	NIST Standard Reference Materials: 3185 Lot: 170309

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model: $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

ACCREDITED
Reference Material Producer

3.0 REFERENCE VALUES:

Density:	**1.002 g/ml @ 22.8 °C**

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval:	Yaling Sui, Chemist
Certification Date:	September 23, 2020

CERTIFICATE # Yaling Sui

SW3A-03-01-03

SCP SCIENCE

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Certificate of Analysis

PO_4^{-3} as P

1.0 DESCRIPTION: ***Accu*SPEC – IC Standard – Phosphate as Phosphorus 1000 µg/ml**

Catalogue Number: 250-220-61x

Starting Material: Potassium phosphate monobasic, ACS

Lot Number: **S200709008**

Expiration Date: **April 2022**

(or 12 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY

Certified Value: [illegible] ± 8 µg/ml

Method of ana[illegible]romatography Assay

Traceability: [illegible]ndard Reference Ma[illegible]

[illegible]06

Note: The unce[illegible]en calculated from [illegible] (u_i) including uncertainty estab[illegible] material (u_{char}), [illegible]ort-term stability (u_{sts}) and [illegible] (u_{lts}) [illegible] to the model $u_c = \sqrt{(u_{[illegible]}^2)}$. [illegible]ined uncertainty has been [illegible]plied by a coverage factor (k) of 2 to [illegible]dence interval.

3.0 REFERENCE VALUES:

Density: 1.00[illegible] g/ml [illegible]

ACCREDITED

Reference Material Producer

CERTIFICATE #2[illegible]

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Yaling Sui, Chemist

Certification Date: July 13, 2020

Yaling Sui

SW3A-03-01-02

SCP SCIENCE

Providing Innovative Solutions to Analytical Chemists

Certificate of Analysis

SO_4^{2-}

1.0 DESCRIPTION: ***Accu*SPEC – IC Standard – Sulfate 1000 µg/ml**

Catalogue Number:	250-220-700/-701
Starting Material:	Potassium Sulfate, ACS
Lot Number:	**S210625008**
Expiration Date:	**April 2023** (or 12 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Certified Value:	**1000 ± 8 µg/ml**
Method of analysis:	Ion Chromatography Assay
Traceability:	NIST Standard Reference Materials: 3181 Lot: 080805

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model: $u_c = \sqrt{u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

ACCREDITED

Reference Material Producer

CERTIFICATE #2885.02

3.0 REFERENCE VALUES:

Density: **0.999 g/ml @ 24.0°C**

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval:	Daniel Boisvert, Chemist
Certification Date:	**July 14th, 2021**

Daniel Boisvert

SW3A-03-01-05

SCP SCIENCE

Providing Innovative Solutions to Analytical Chemists

Certificate of Analysis

Br -

1.0 DESCRIPTION: ***Accu*SPEC – IC Standard – Bromide 1000 µg/ml**

Catalogue Number: 250-220-23x
Starting Material: Sodium Bromide, ACS
Lot Number: **S201127003**
Expiration Date: **September 2022**
(or 12 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Certified Value: **1000 ± 7 µg/ml**
Method of analysis: Ion Chromatography Assay
Traceability: NIST Standard Reference Materials, 3184
Lot: 151130

Note: The uncertainty of the certified value has been calculated from applicable component distributions (u_x) including uncertainty established during characterization of the material (u_{char}), the between-bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

ACCREDITED

Reference Material Producer

3.0 REFERENCE VALUES:

Density: 0.999 g/ml @ 23 °C

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Yaling Sui, Chemist
Certification Date: December 7, 2020

CERTIFICA Yaling Sui 5.02

SW3A-03-01-06

SCP SCIENCE

Providing Innovative Solutions to Analytical Chemists

Certificate of Analysis

Cl^-

1.0 DESCRIPTION: ***Accu*SPEC – IC Standard – Chloride 1000 µg/ml**

Catalogue Number:	250-220-37x
Starting Material:	Sodium Chloride, ACS
Lot Number:	**S210318024**
Expiration Date:	**December 2022**
	(or 12 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Certified Value: **[illegible] µg/ml**

Method of analysis: Ion Chromatography Assay

Traceability: NIST Standard Reference Materials: 3182
Lot: [illegible]

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_x) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

ACCREDITED

3.0 REFERENCE VALUES:

Density: **0.999 g/ml @ 23.0°C**

Reference Material Producer

CERTIFICATE #2885.02

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Yaling Sui, Chemist

Certification Date: March 25 2021

Yaling Sui

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 21L159A

METHOD E218.6
HEXAVALENT CHROMIUM

A total of five(5) water samples were received on 12/15/21 to be analyzed for Hexavalent Chromium in accordance with Method E218.6 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, two(2) method blanks were analyzed. HCL019WB and HCL021WB were compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, two(2) sets of LCS/LCD were analyzed. HCL019WL/HCL019WC and HCL021WL/HCL021WC were within LCS limits. Refer to LCS summary forms for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD and four(4) sets of MSs were analyzed.
- Hexavalent Chromium was within MS/MSD QC limits in L159-05M/L159-05S.
- Percent recovery for Hexavalent Chromium was within MS QC limits in L159-06M, -07M, -08M and -09M.
Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

Samples L159-08I and -08M were reported at 5X dilution due to matrix interference.

Samples L159-05M, -05S, -06M, -08M and -09M were spiked at 1 ppb.

Sample L159-07M was spiked at 2 ppb.

SAMPLE RESULTS

METHOD E218.6
HEXAVALENT CHROMIUM

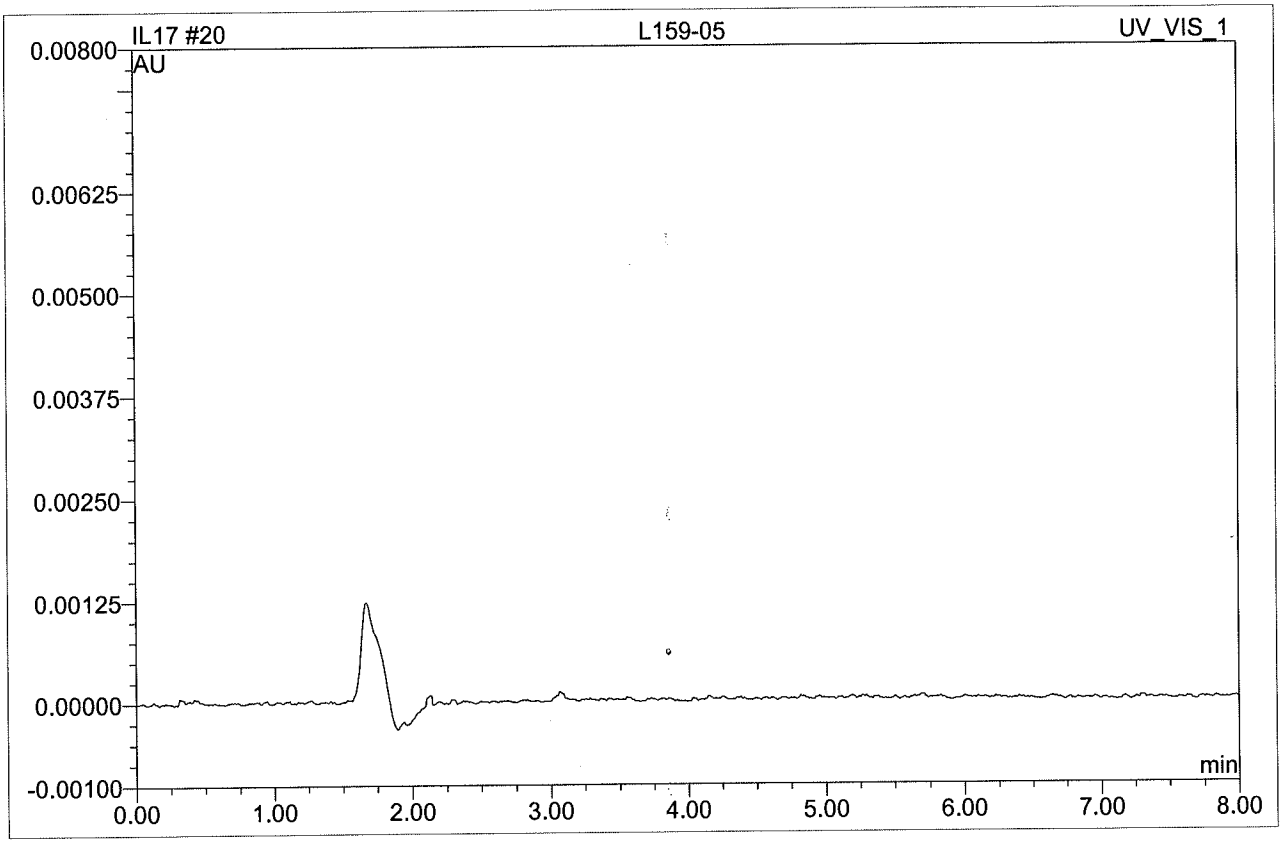
Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 21L159A

Matrix : WATER
InstrumentID : 59

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N. FACTOR	MOIST (%)	LOQ (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HCL019WB	ND	1	NA	0.2	0.05	12/16/2118:39	NA	IL16015	IL16013	HCL019W	NA	NA
LCS1W	HCL019WL	2.00	1	NA	0.2	0.05	12/16/2118:49	NA	IL16016	IL16013	HCL019W	NA	NA
LCD1W	HCL019WC	2.00	1	NA	0.2	0.05	12/16/2118:59	NA	IL16017	IL16013	HCL019W	NA	NA
EB-745-Q421	L159-09	ND	1	NA	0.2	0.05	12/17/2100:16	NA	IL16047	IL16037	HCL019W	12/14/2110:50	12/15/21
EB-745-Q421MS	L159-09M	1.02	1	NA	0.2	0.05	12/17/2100:26	NA	IL16048	IL16037	HCL019W	12/14/2110:50	12/15/21
MBLK2W	HCL021WB	ND	1	NA	0.2	0.05	12/17/2113:33	NA	IL17003	IL17001	HCL021W	NA	NA
LCS2W	HCL021WL	1.87	1	NA	0.2	0.05	12/17/2113:44	NA	IL17004	IL17001	HCL021W	NA	NA
LCD2W	HCL021WC	1.85	1	NA	0.2	0.05	12/17/2115:29	NA	IL17005	IL17001	HCL021W	NA	NA
MW-92-037-Q421	L159-05	ND	1	NA	0.2	0.05	12/17/2116:04	NA	IL17008	IL17001	HCL021W	12/14/2109:04	12/15/21
MW-92-037-Q421MS	L159-05M	0.990	1	NA	0.2	0.05	12/17/2116:15	NA	IL17009	IL17001	HCL021W	12/14/2109:04	12/15/21
MW-92-037-Q421MSD	L159-05S	1.03	1	NA	0.2	0.05	12/17/2116:25	NA	IL17010	IL17001	HCL021W	12/14/2109:04	12/15/21
MW-92-072-Q421	L159-06	ND	1	NA	0.2	0.05	12/17/2117:17	NA	IL17015	IL17013	HCL021W	12/14/2108:36	12/15/21
MW-92-072-Q421MS	L159-06M	0.943	1	NA	0.2	0.05	12/17/2117:27	NA	IL17016	IL17013	HCL021W	12/14/2108:36	12/15/21
MW-92-102-Q421	L159-07	4.85	1	NA	0.2	0.05	12/17/2117:38	NA	IL17017	IL17013	HCL021W	12/14/2108:08	12/15/21
MW-92-102-Q421MS	L159-07M	6.84	1	NA	0.2	0.05	12/17/2117:49	NA	IL17018	IL17013	HCL021W	12/14/2108:08	12/15/21
MW-92-122-Q421	L159-08I	ND	5	NA	1	0.25	12/17/2118:22	NA	IL17021	IL17013	HCL021W	12/14/2107:38	12/15/21
MW-92-122-Q421MS	L159-08M	4.65	5	NA	1	0.25	12/17/2118:32	NA	IL17022	IL17013	HCL021W	12/14/2107:38	12/15/21

IL17 008 L159-05

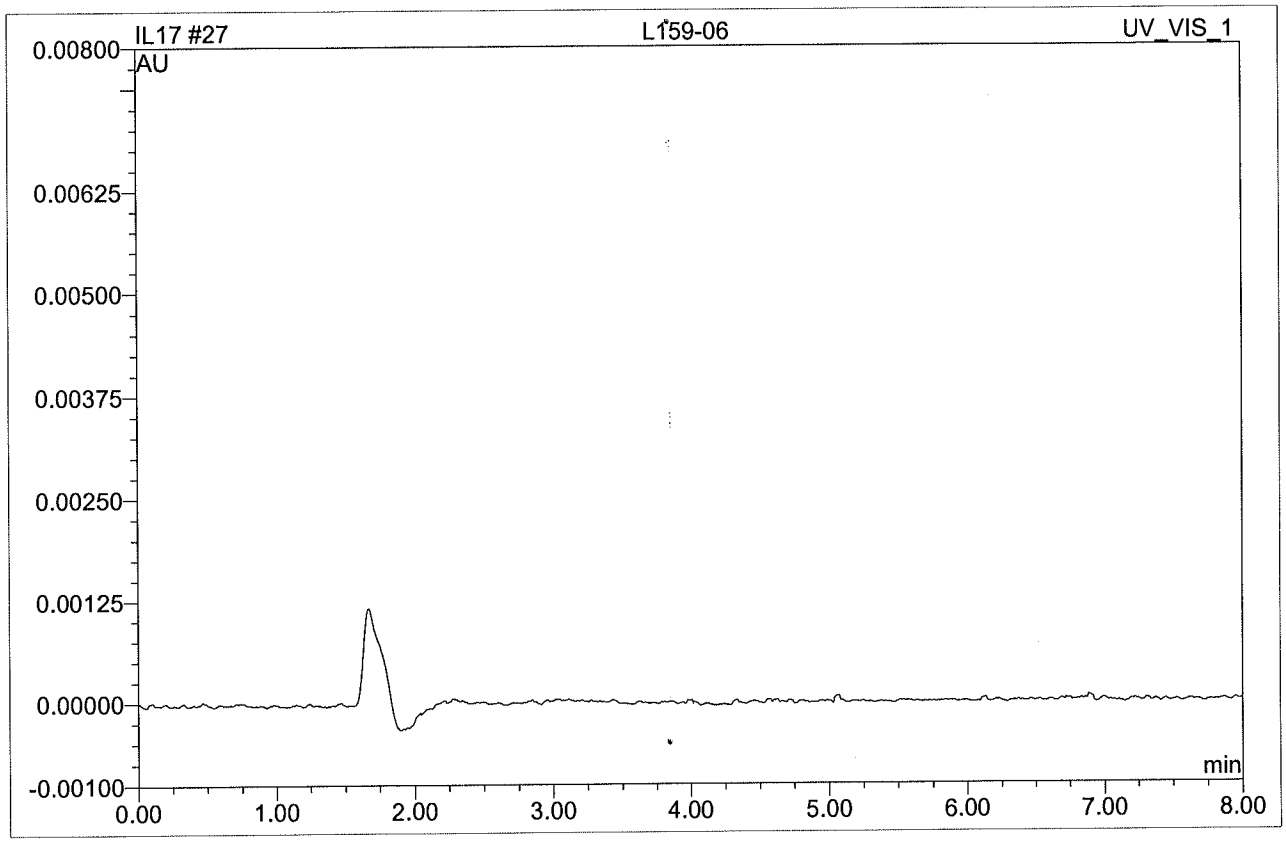
Sample Name:	**L159-05**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 16:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL17 015 L159-06

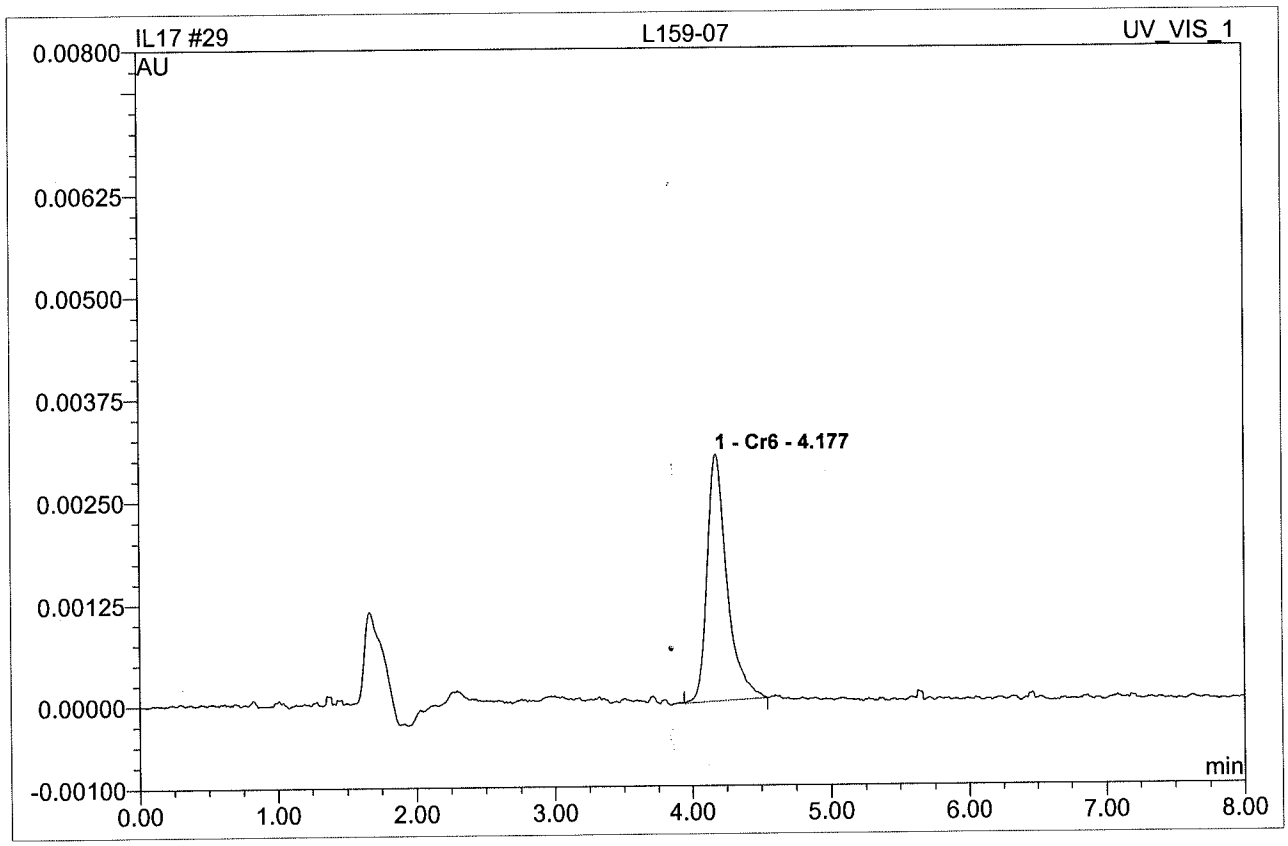
Sample Name:	**L159-06**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 17:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL17 017 L159-07

Sample Name:	**L159-07**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 17:38**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

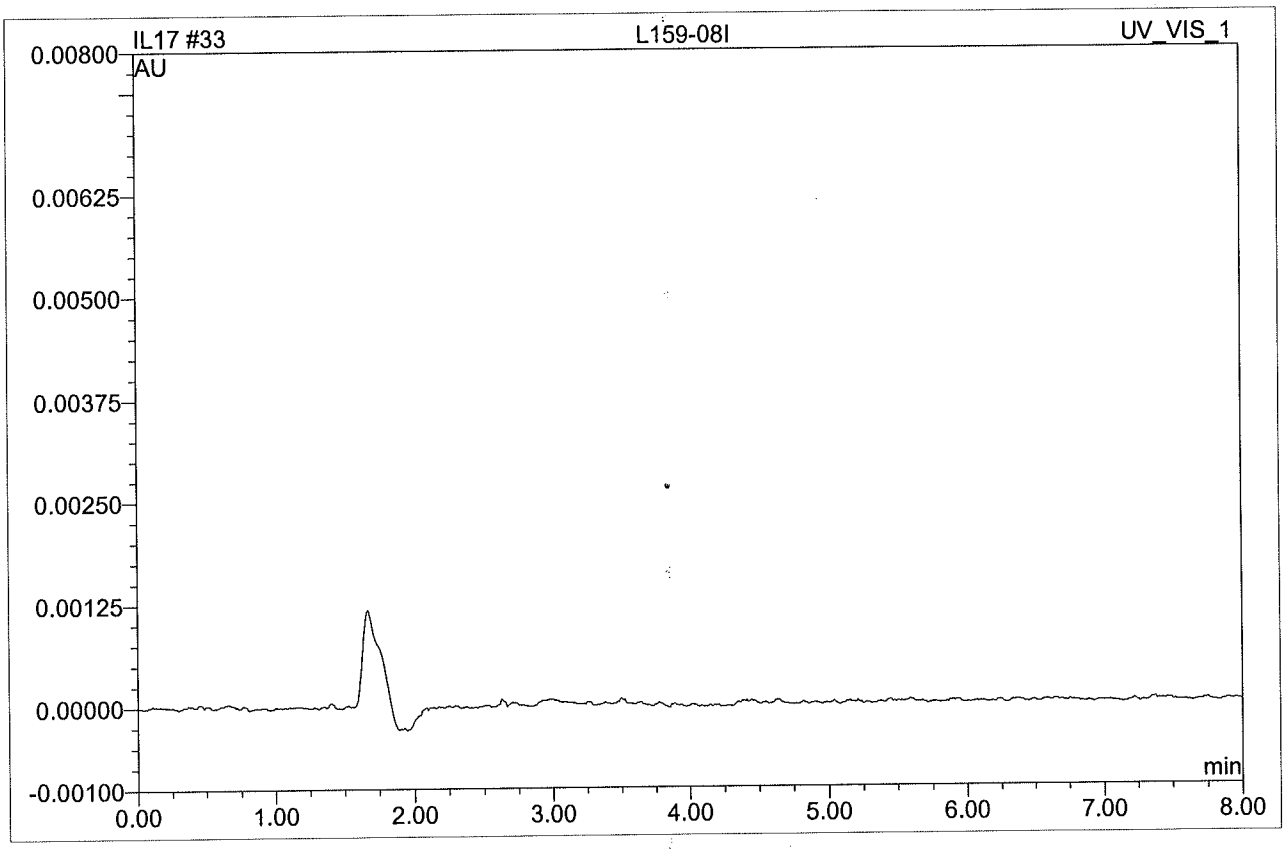


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.18	Cr6	0.0030140	0.0005054	100.00	4.850	BMB
Total:			0.003	0.001	100.00	4.850	

IL17 021 L159-08I

1mLto5mL

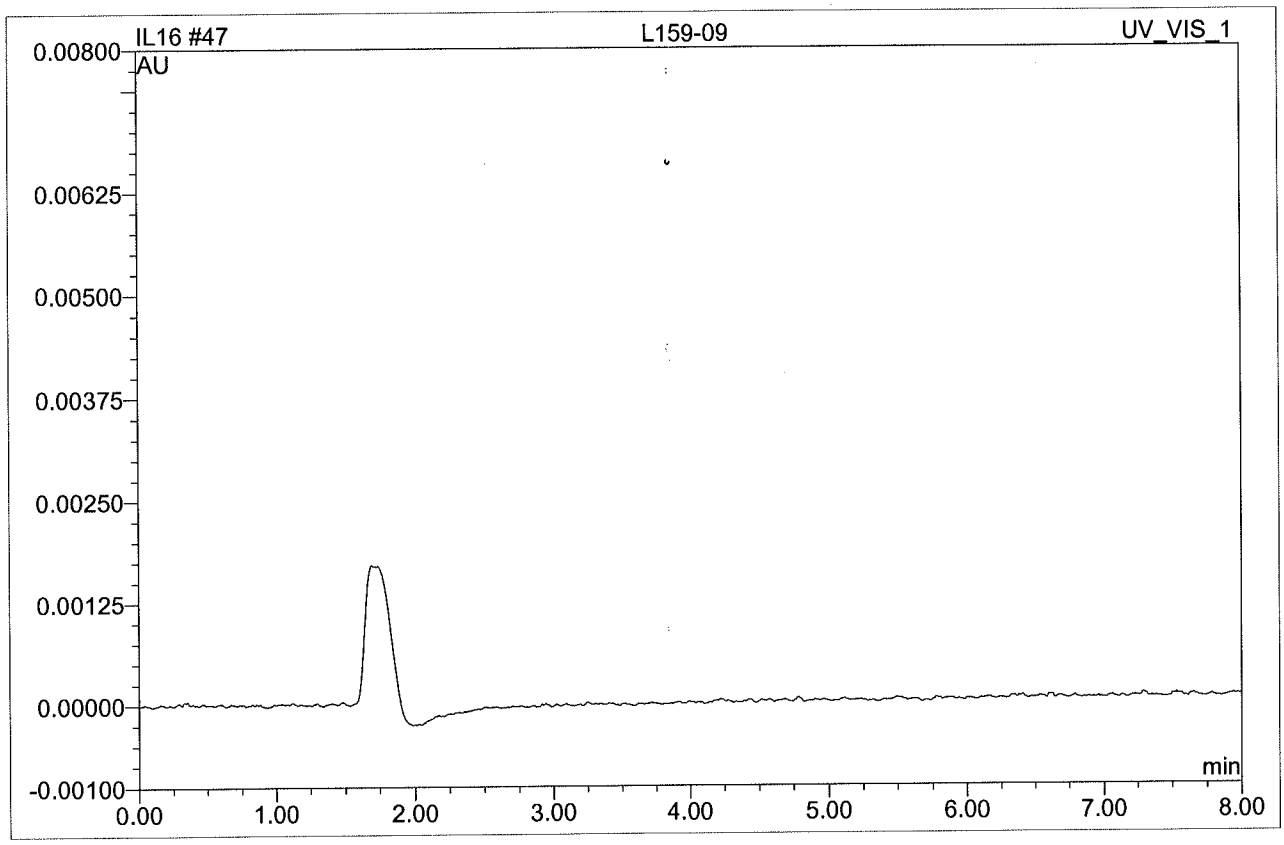
Sample Name:	**L159-08I**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**5**
Recording Time:	**12/17/2021 18:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 047 L159-09

Sample Name:	**L159-09**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 0:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21L159A
METHOD : E218.6

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: HCL019WB	HCL019WL	HCL019WC
LAB FILE ID	: IL16015	IL16016	IL16017
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 12/16/2118:39	12/16/2118:49	12/16/2118:59
PREP BATCH	: HCL019W	HCL019W	HCL019W
CALIBRATION REF	: IL16013	IL16013	IL16013

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpkAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
HEXAVALENT CHROMIUM	ND	2.00	2.00	100	2.00	2.00	100	0	90-110	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21L159A
METHOD : E218.6

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK2W	LCS2W	LCD2W
LAB SAMPLE ID	: HCL021WB	HCL021WL	HCL021WC
LAB FILE ID	: IL17003	IL17004	IL17005
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 12/17/2113:33	12/17/2113:44	12/17/2115:29
PREP BATCH	: HCL021W	HCL021W	HCL021W
CALIBRATION REF	: IL17001	IL17001	IL17001

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpkAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
HEXAVALENT CHROMIUM	ND	2.00	1.87	93.5	2.00	1.85	92.5	1	90-110	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21L159A
METHOD : E218.6

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MW-92-037-Q421	MW-92-037-Q421MS	MW-92-037-Q421MSD
LAB SAMPLE ID	: L159-05	L159-05M	L159-05S
LAB FILE ID	: IL17008	IL17009	IL17010
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 12/17/2116:04	12/17/2116:15	12/17/2116:25
PREP BATCH	: HCL021W	HCL021W	HCL021W
CALIBRATION REF	: IL17001	IL17001	IL17001

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpkAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
HEXAVALENT CHROMIUM	ND	1.00	0.990	99.0	1.00	1.03	103	4	90-110	20

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21L159A
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-92-072-Q421	MW-92-072-Q421MS
LAB SAMPLE ID	: L159-06	L159-06M
LAB FILE ID	: IL17015	IL17016
DATE PREPARED	: NA	NA
DATE ANALYZED	: 12/17/2117:17	12/17/2117:27
PREP BATCH	: HCL021W	HCL021W
CALIBRATION REF	: IL17013	IL17013

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.00	0.943	94.3	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21L159A
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-92-102-Q421	MW-92-102-Q421MS
LAB SAMPLE ID	: L159-07	L159-07M
LAB FILE ID	: IL17017	IL17018
DATE PREPARED	: NA	NA
DATE ANALYZED	: 12/17/2117:38	12/17/2117:49
PREP BATCH	: HCL021W	HCL021W
CALIBRATION REF	: IL17013	IL17013

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	4.85	2.00	6.84	99.5	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21L159A
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-92-122-Q421	MW-92-122-Q421MS
LAB SAMPLE ID	: L159-08I	L159-08M
LAB FILE ID	: IL17021	IL17022
DATE PREPARED	: NA	NA
DATE ANALYZED	: 12/17/2118:22	12/17/2118:32
PREP BATCH	: HCL021W	HCL021W
CALIBRATION REF	: IL17013	IL17013

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5.00	4.65	93.0	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 21L159A
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: EB-745-Q421	EB-745-Q421MS
LAB SAMPLE ID	: L159-09	L159-09M
LAB FILE ID	: IL16047	IL16048
DATE PREPARED	: NA	NA
DATE ANALYZED	: 12/17/2100:16	12/17/2100:26
PREP BATCH	: HCL019W	HCL019W
CALIBRATION REF	: IL16037	IL16037

ACCESSION:

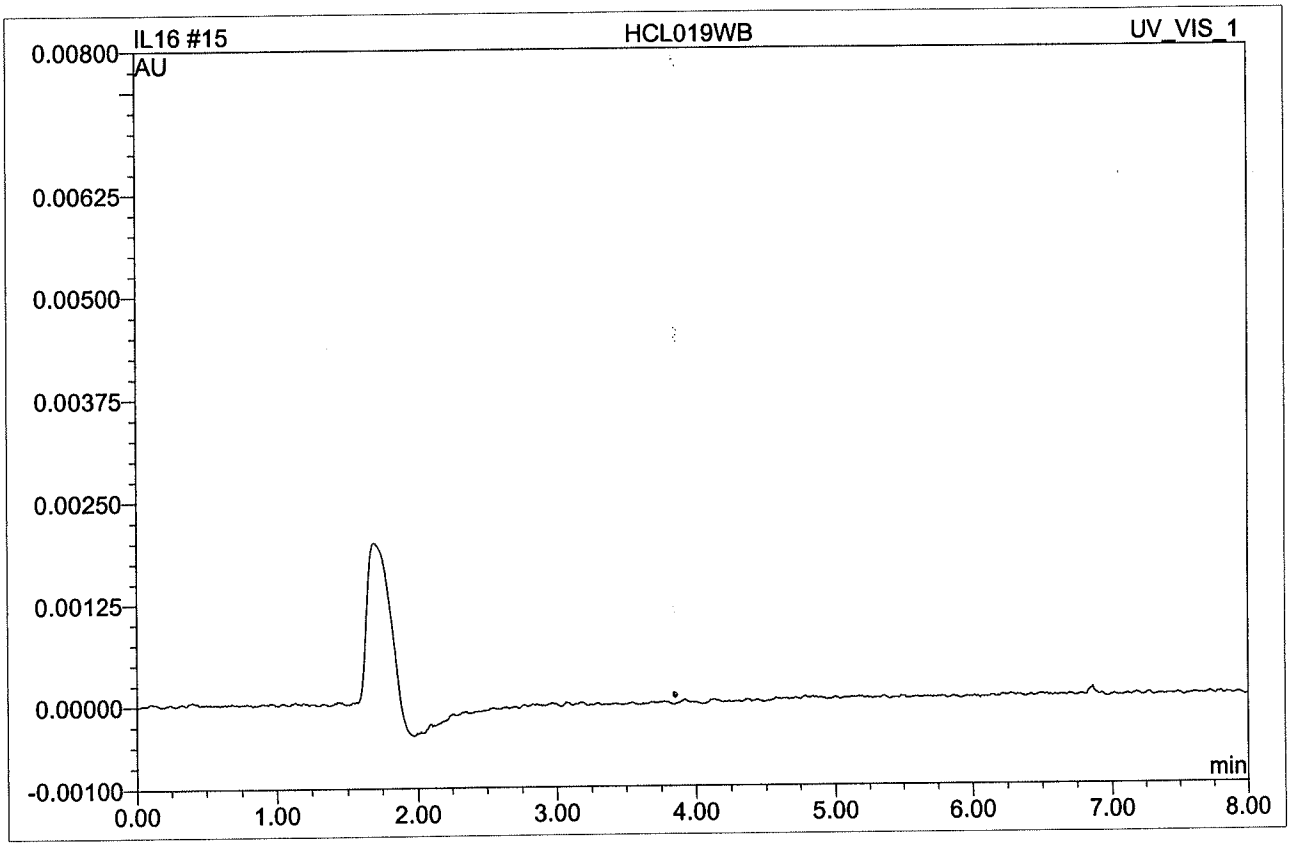
PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.00	1.02	102	90-110

PS: Parent Sample MS: Matrix Spike

QC DATA

IL16 015 HCL019WB

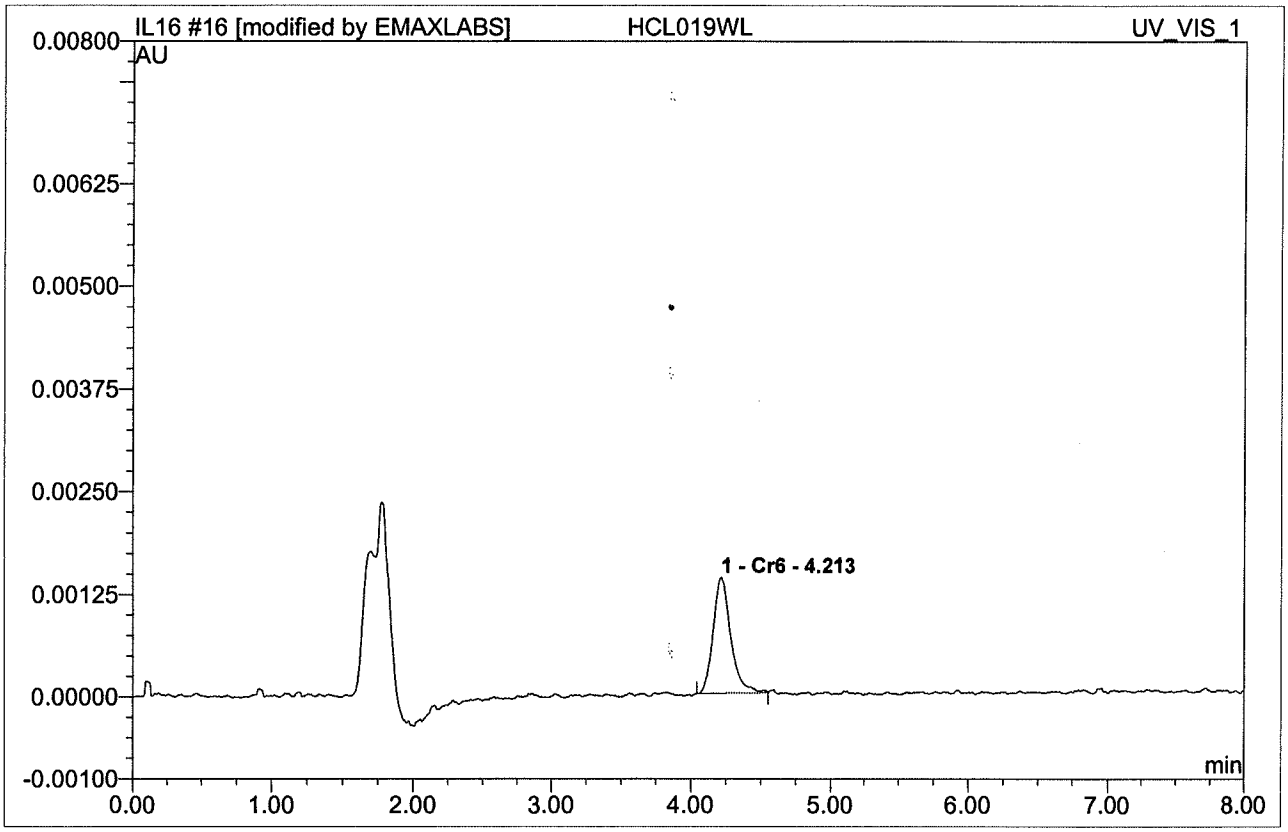
Sample Name:	**HCL019WB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 18:39**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 016 HCL019WL

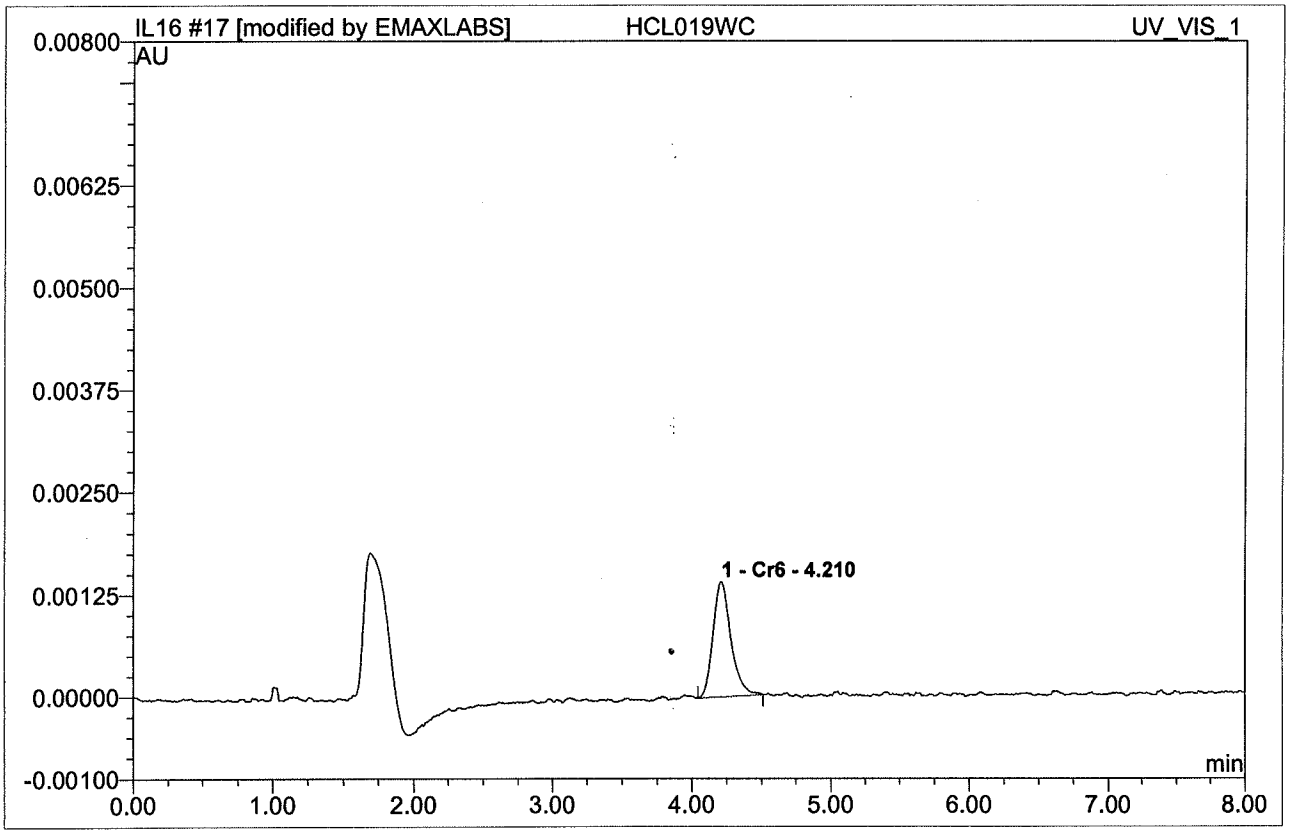
Sample Name:	**HCL019WL**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 18:49**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0014090	0.0002070	100.00	1.995	BMB*
Total:			0.001	0.000	100.00	1.995	

IL16 017 HCL019WC

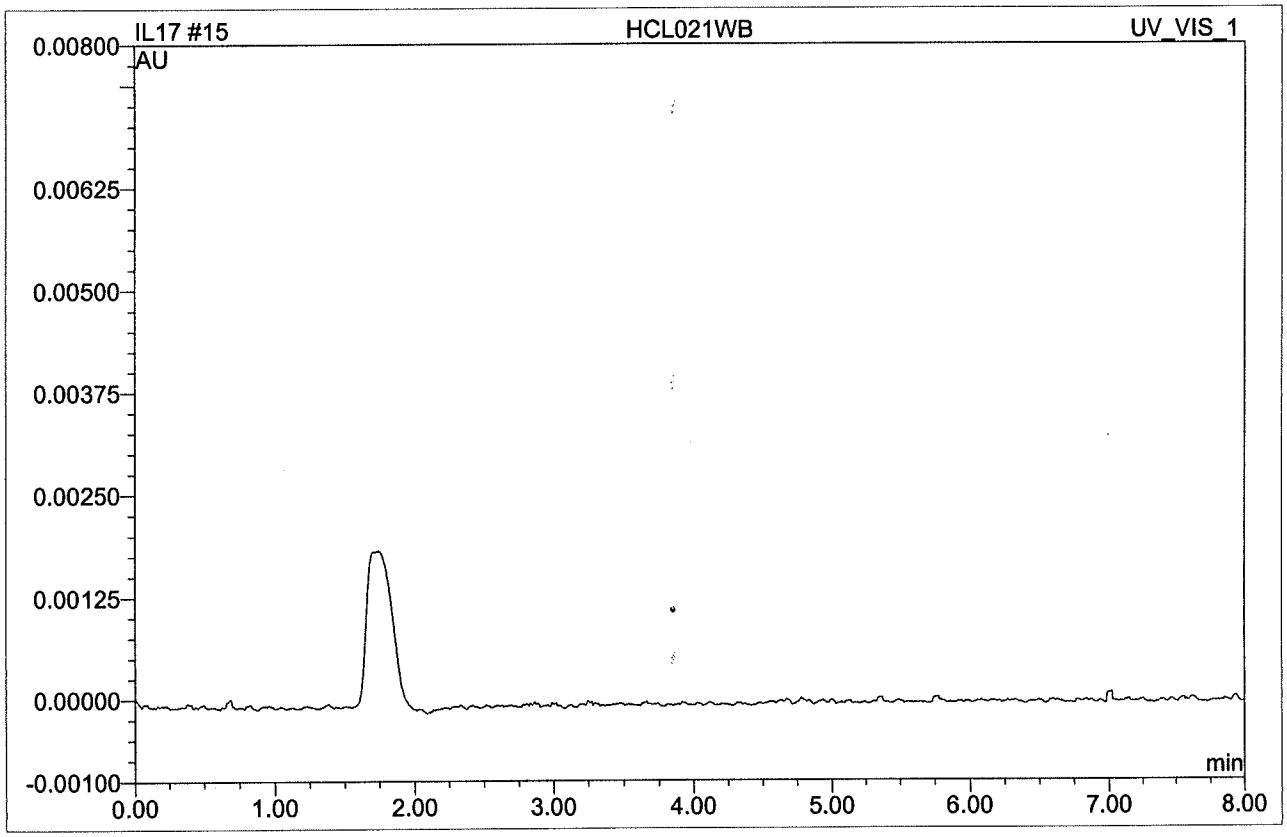
Sample Name:	**HCL019WC**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 18:59**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0014080	0.0002075	100.00	2.000	BMB*
Total:			0.001	0.000	100.00	2.000	

IL17 003 HCL021WB

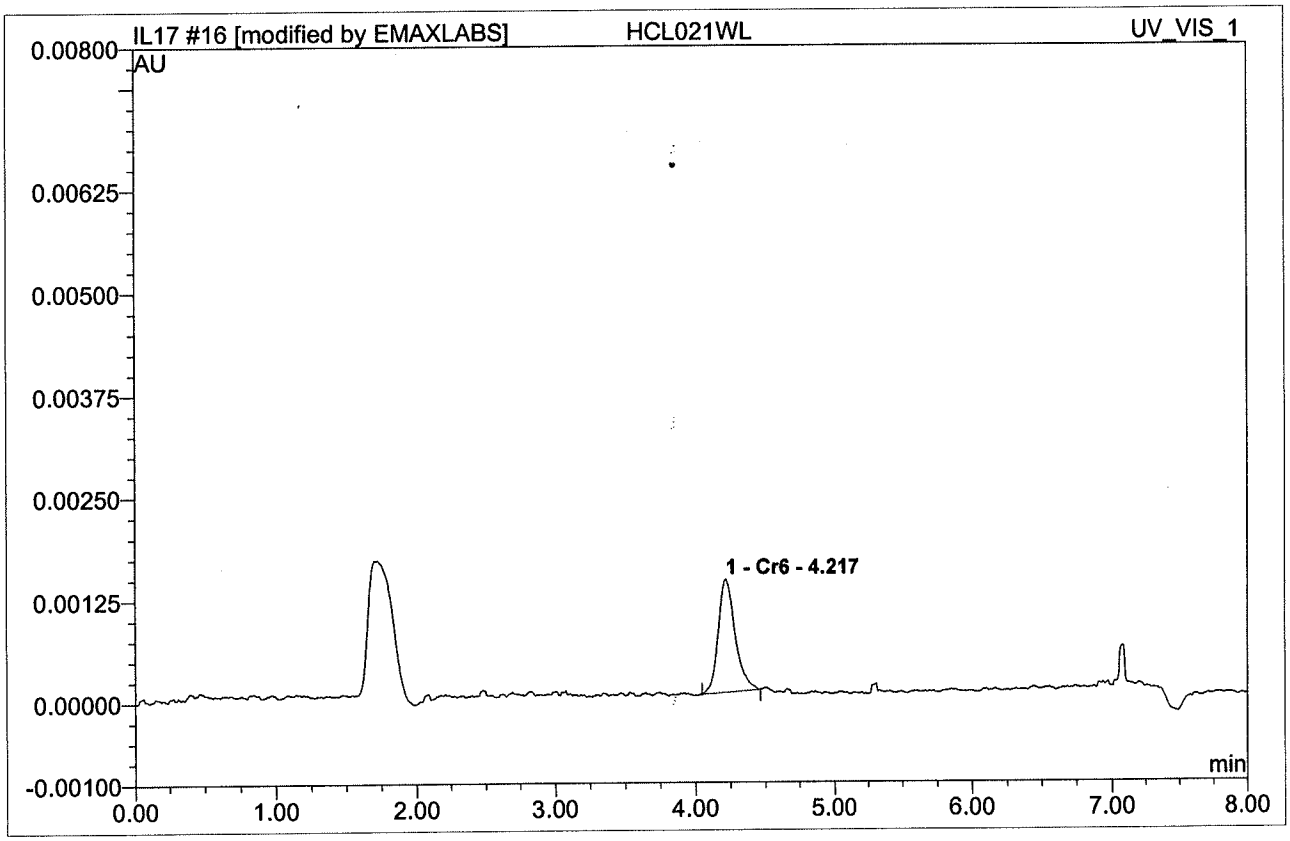
Sample Name:	**HCL021WB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 13:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL17 004 HCL021WL

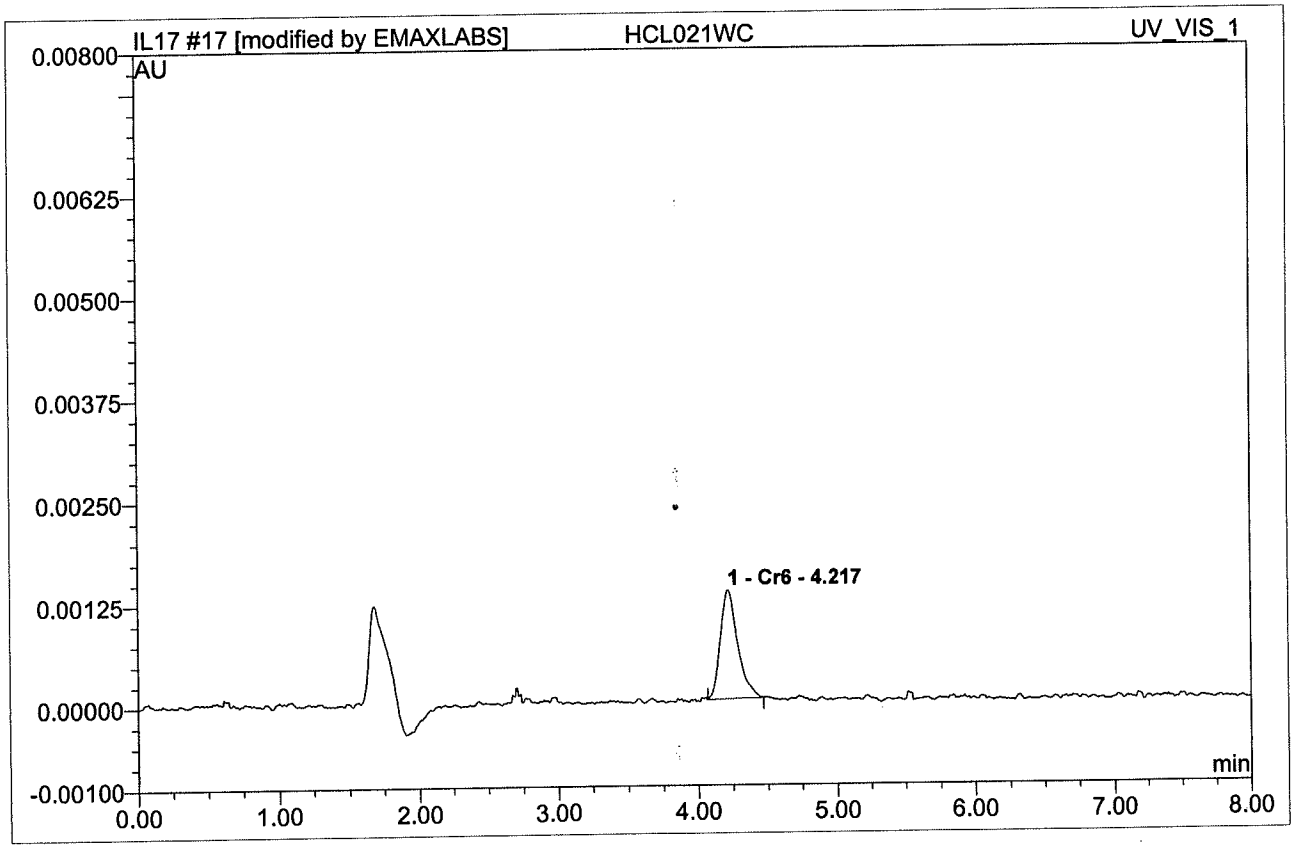
Sample Name:	**HCL021WL**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 13:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.22	Cr6	0.0013810	0.0001944	100.00	1.875	BMB
Total:			0.001	0.000	100.00	1.875	

IL17 005 HCL021WC

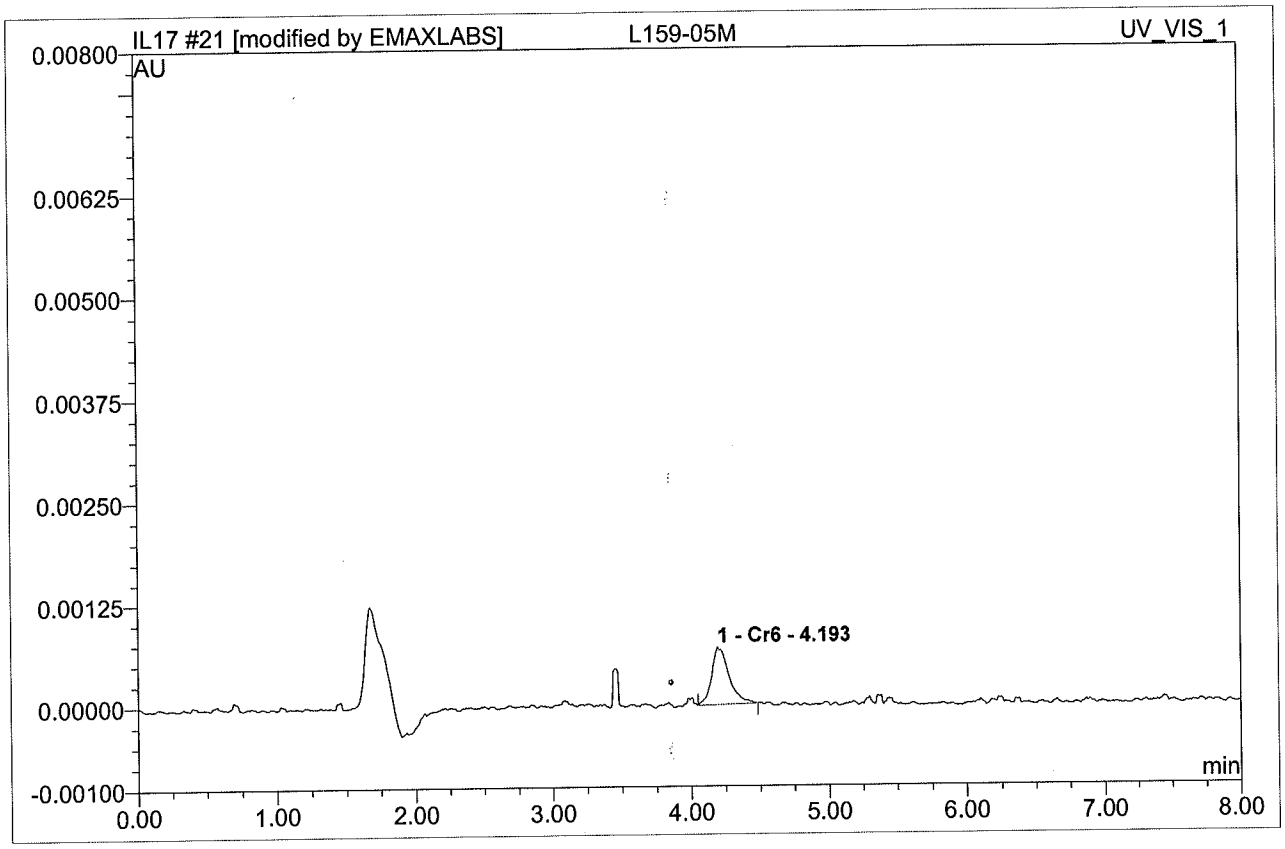
Sample Name:	**HCL021WC**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 15:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.22	Cr6	0.0013320	0.0001916	100.00	1.848	BMB*
Total:			0.001	0.000	100.00	1.848	

IL17 009 L159-05M

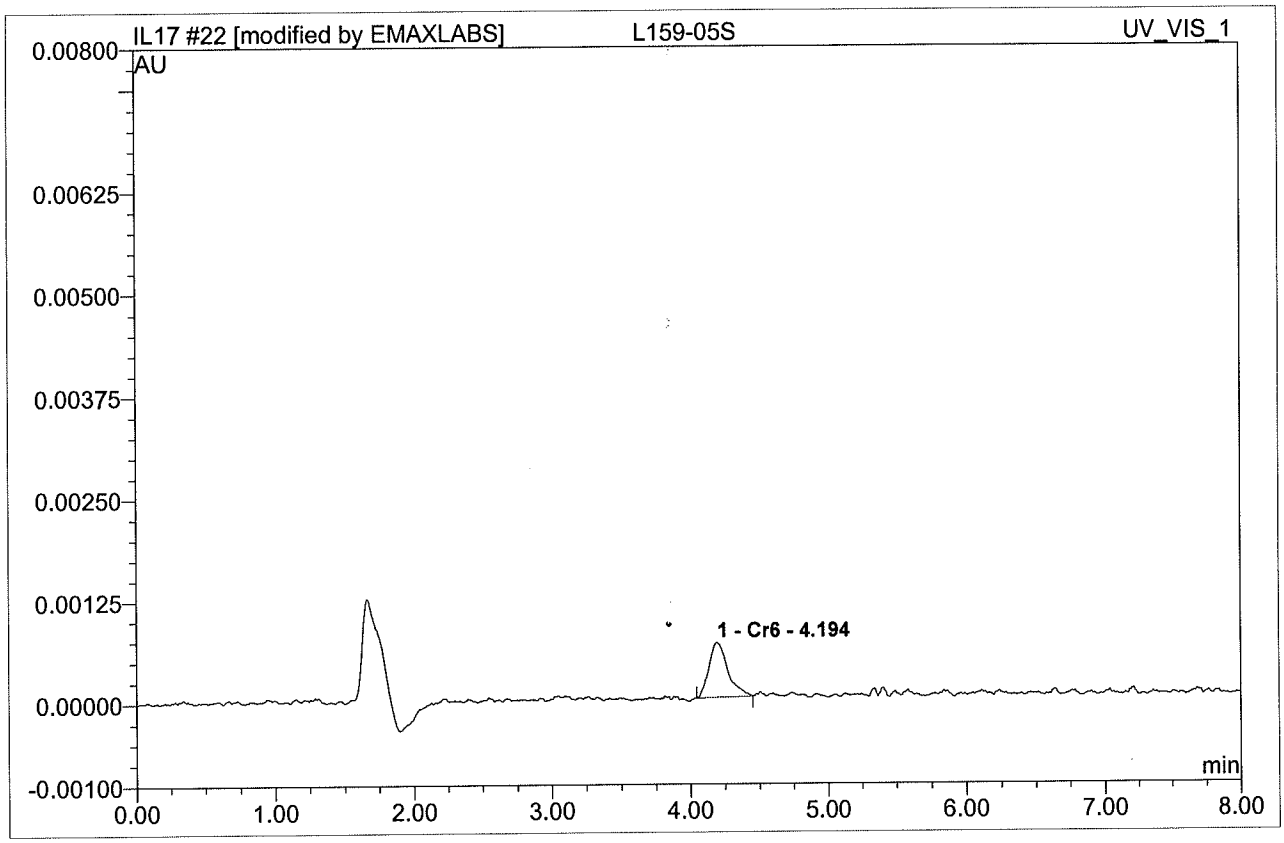
Sample Name:	**L159-05M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 16:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.19	Cr6	0.0007030	0.0001020	100.00	0.990	BMB*
Total:			0.001	0.000	100.00	0.990	

IL17 010 L159-05S

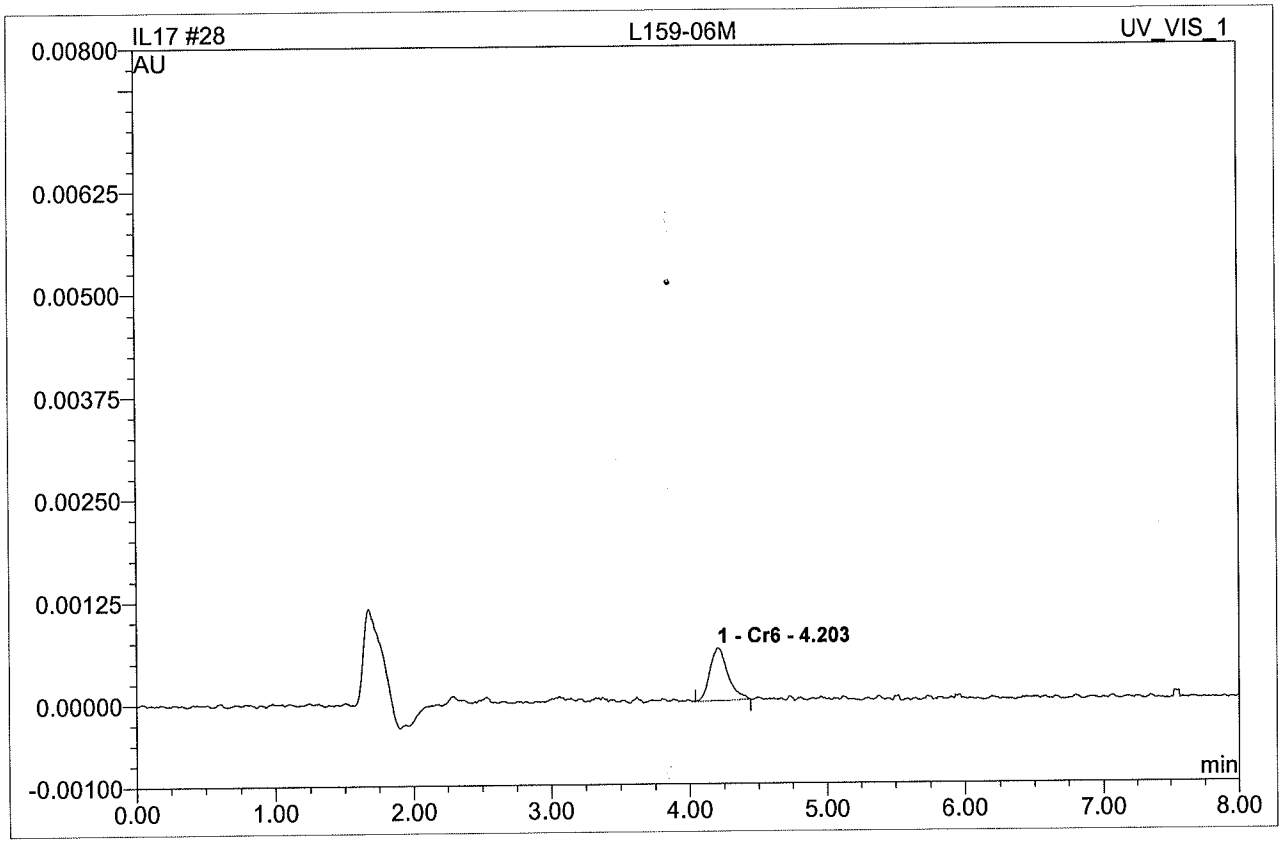
Sample Name:	**L159-05S**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 16:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.19	Cr6	0.0006700	0.0001057	100.00	1.026	BMB*
Total:			0.001	0.000	100.00	1.026	

IL17 016 L159-06M

Sample Name:	**L159-06M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 17:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



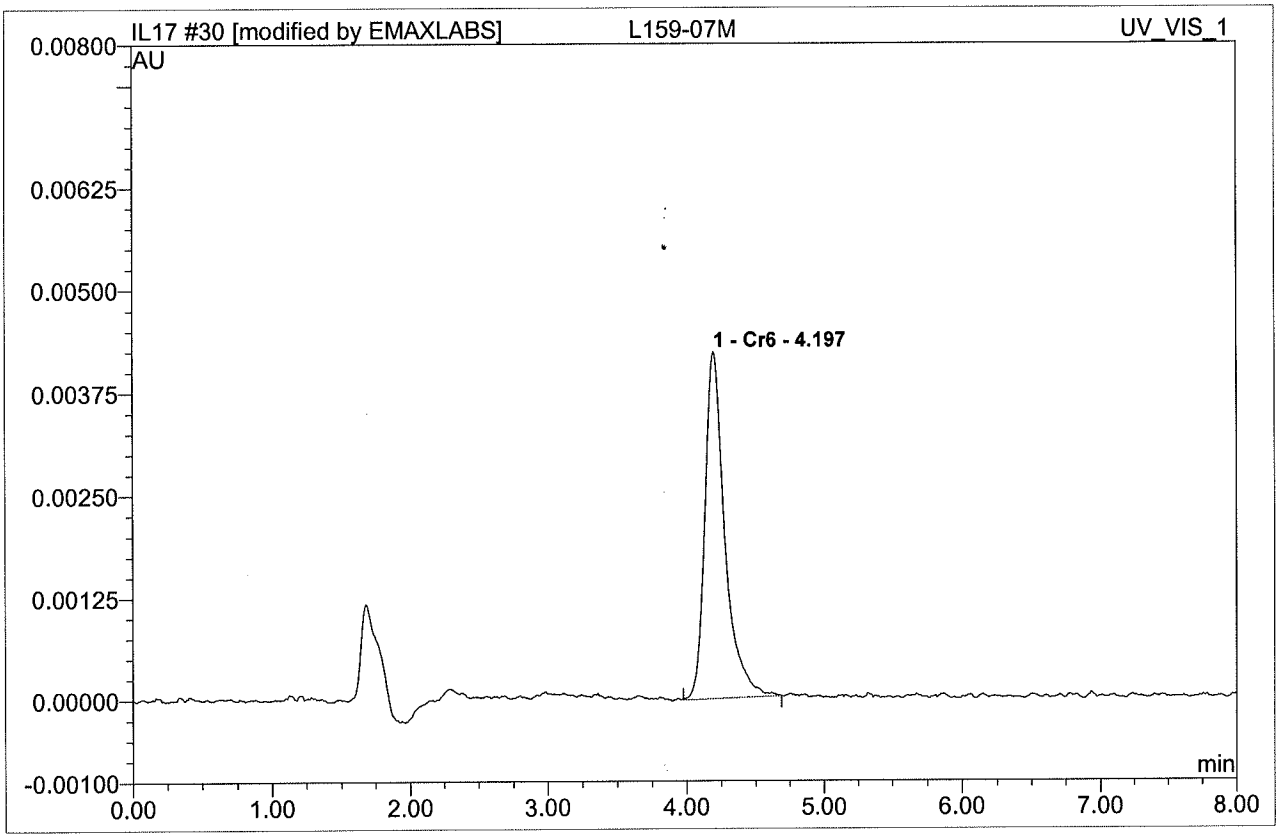
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.20	Cr6	0.0006450	0.0000971	100.00	0.943	BMB
Total:			0.001	0.000	100.00	0.943	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IL17 018 L159-07M

Sample Name:	**L159-07M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 17:49**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

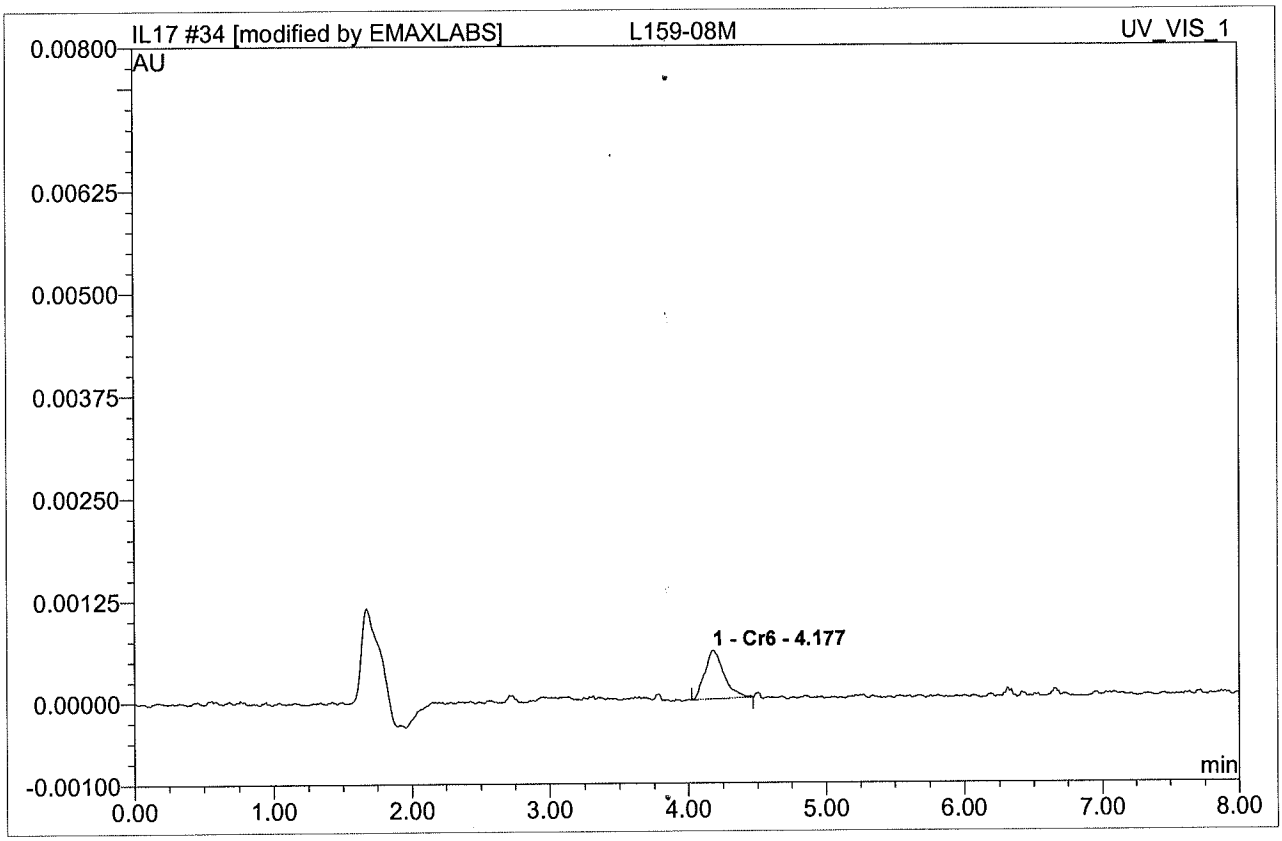


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.20	Cr6	0.0042290	0.0007134	100.00	6.841	BMB*
Total:			0.004	0.001	100.00	6.841	

IL17 022 L159-08M

1mLto5mL

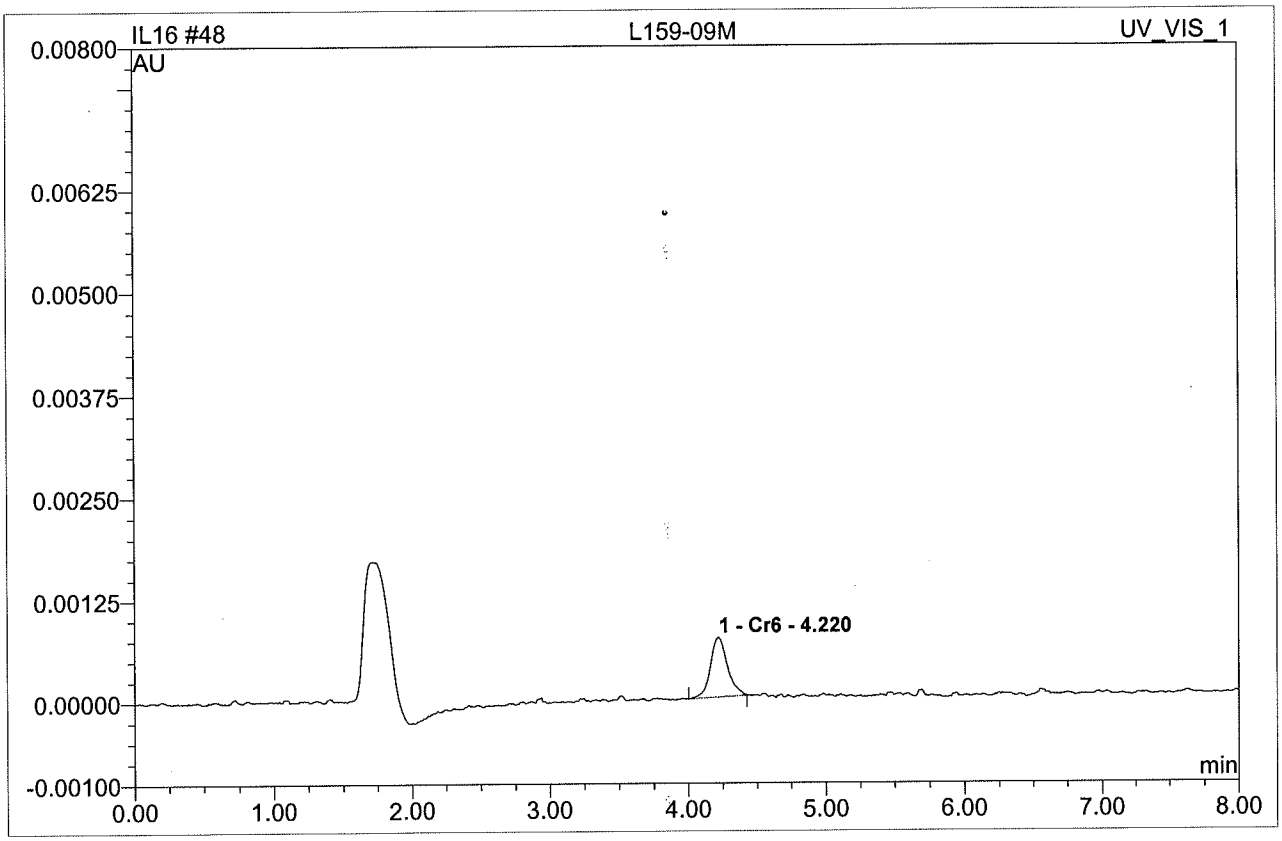
Sample Name:	**L159-08M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**5**
Recording Time:	**12/17/2021 18:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.18	Cr6	0.0005940	0.0000956	100.00	4.648	BMB*
Total:			0.001	0.000	100.00	4.648	

IL16 048 L159-09M

Sample Name:	**L159-09M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 0:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.22	Cr6	0.0007280	0.0001047	100.00	1.017	BMB
Total:			0.001	0.000	100.00	1.017	

INITIAL CALIBRATION

IC RESULT FORM CalVersion : CR6.L16/IL16(2021)

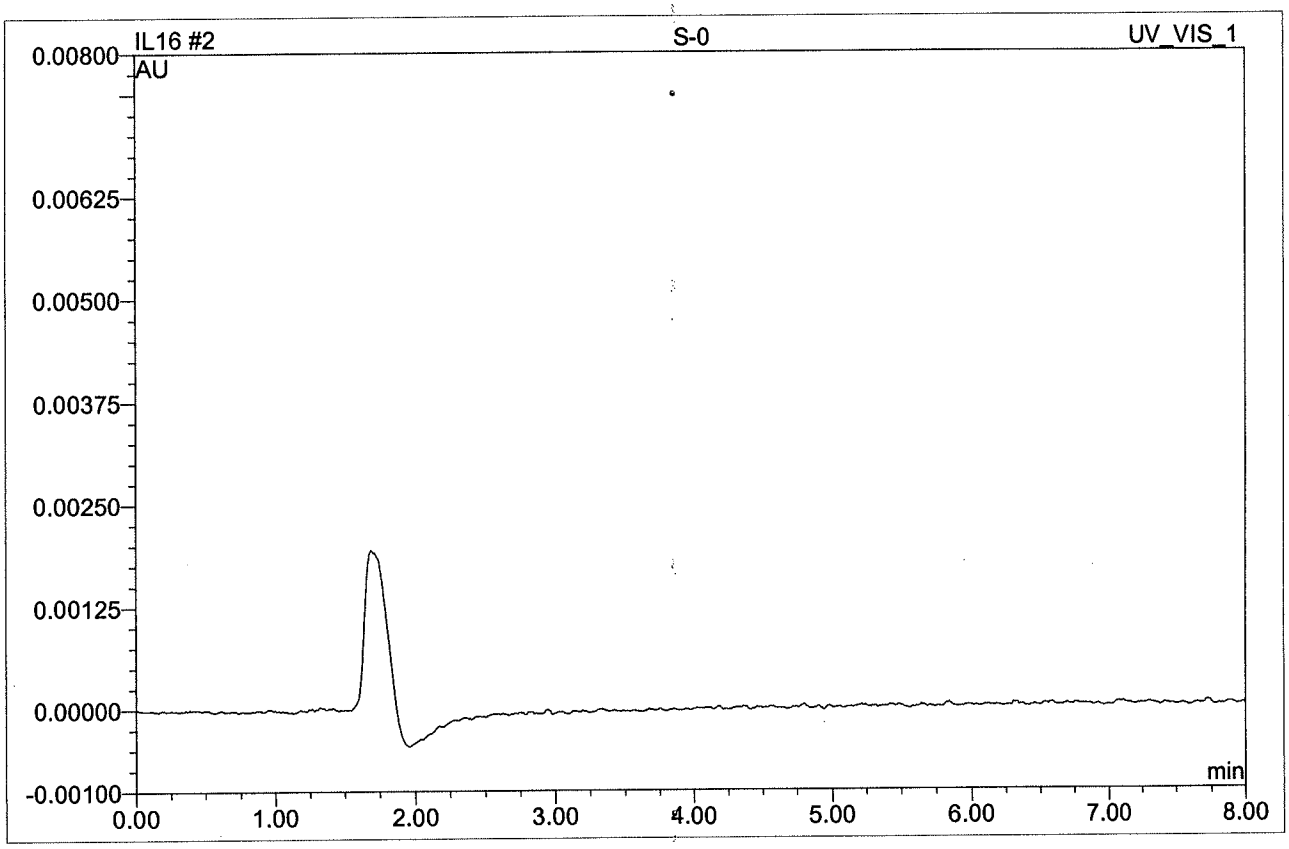
LFID	LSID	SelCmp	Cr6	DateTime	DF
IL16001	IB	C	ND	12/16/2116:00	1
IL16002	S-0	C	ND	12/16/2116:10	1
IL16003	S-1	C	0.198	12/16/2116:31	1
IL16004	S-2	C	0.503	12/16/2116:41	1
IL16005	S-3	C	0.993	12/16/2116:52	1
IL16006	S-4	C	1.985	12/16/2117:02	1
IL16007	S-5	C	5.011	12/16/2117:13	1
IL16008	S-6	C	7.495	12/16/2117:23	1
IL16009	S-7	C	10.002	12/16/2117:33	1
IL16010	ICV	C	101%	12/16/2117:44	1
IL16011	ICB	C	ND	12/16/2117:54	1
IL16012	LOW CCV	C	0.202	12/16/2118:05	1

METHOD: IC59L16
SOLVENT: BUFFER (SP2-05-06-01)

KE 12/29/21

IL16 002 S-0

Sample Name:	**S-0**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 16:10**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

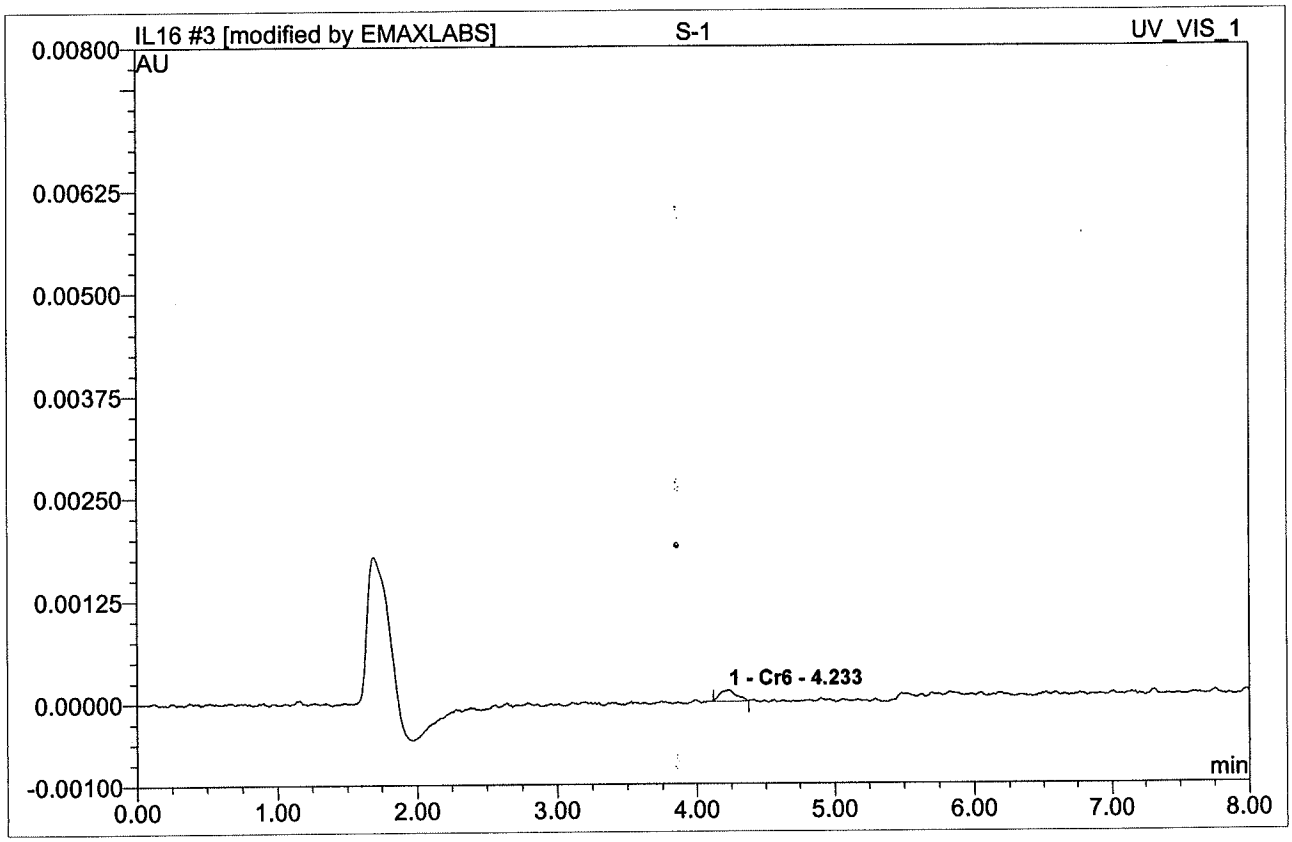


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 003 S-1

0.2 PPB

Sample Name:	**S-1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 16:31**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



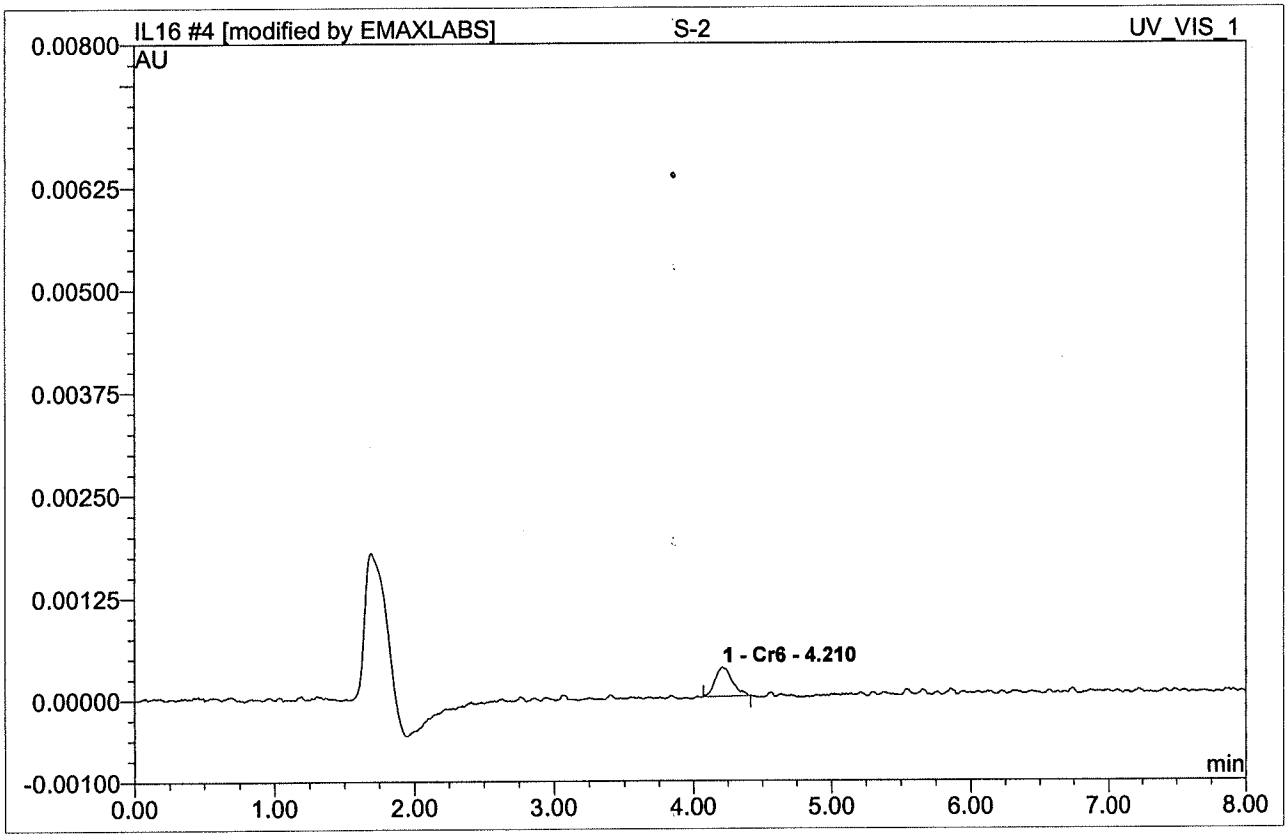
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.23	Cr6	0.0001400	0.0000192	100.00	0.198	BMB*
Total:			0.000	0.000	100.00	0.198	

12/9/21

IL16 004 S-2

0.5 PPB

Sample Name:	**S-2**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 16:41**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



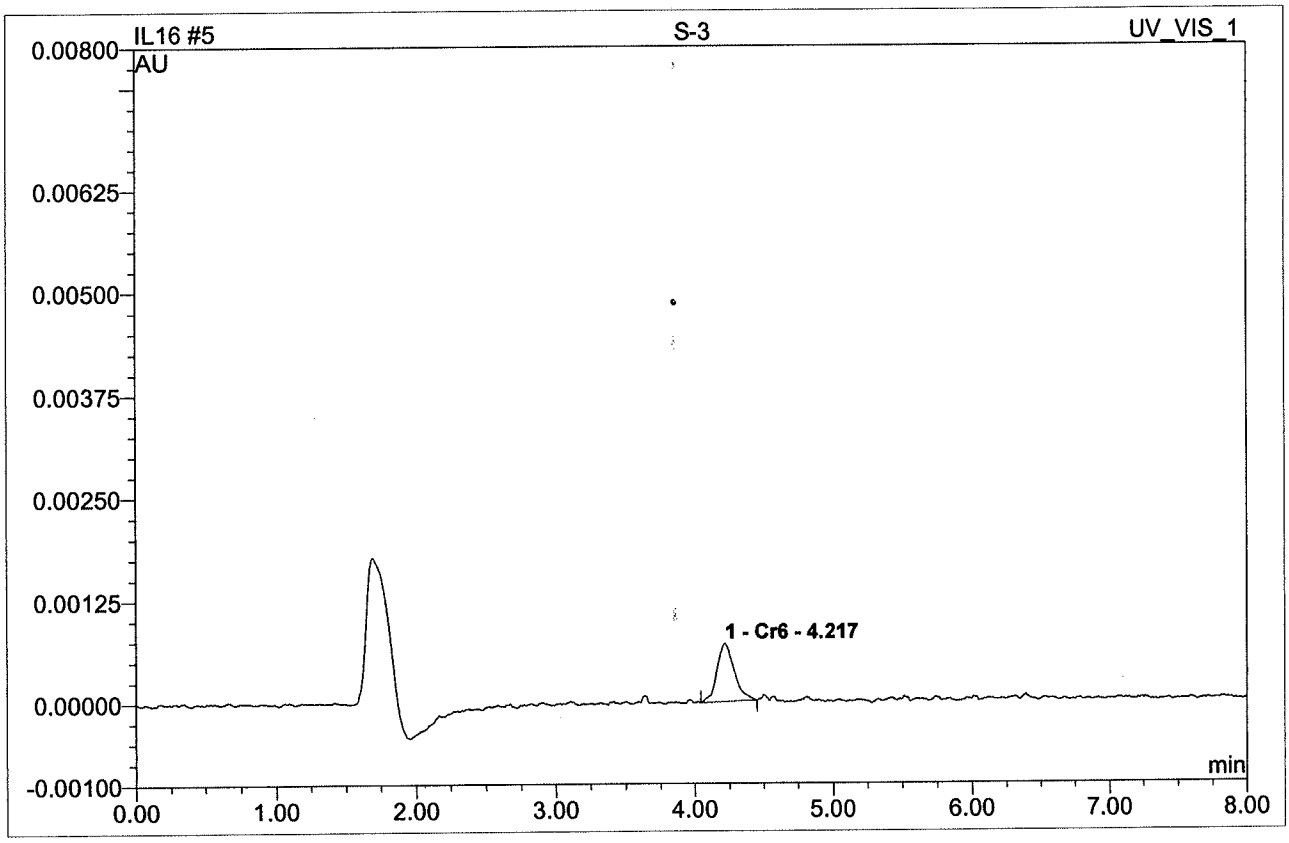
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0003560	0.0000510	100.00	0.503	BMB*
Total:			0.000	0.000	100.00	0.503	

12/16/21

IL16 005 S-3

1.0 PPB

Sample Name:	**S-3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 16:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

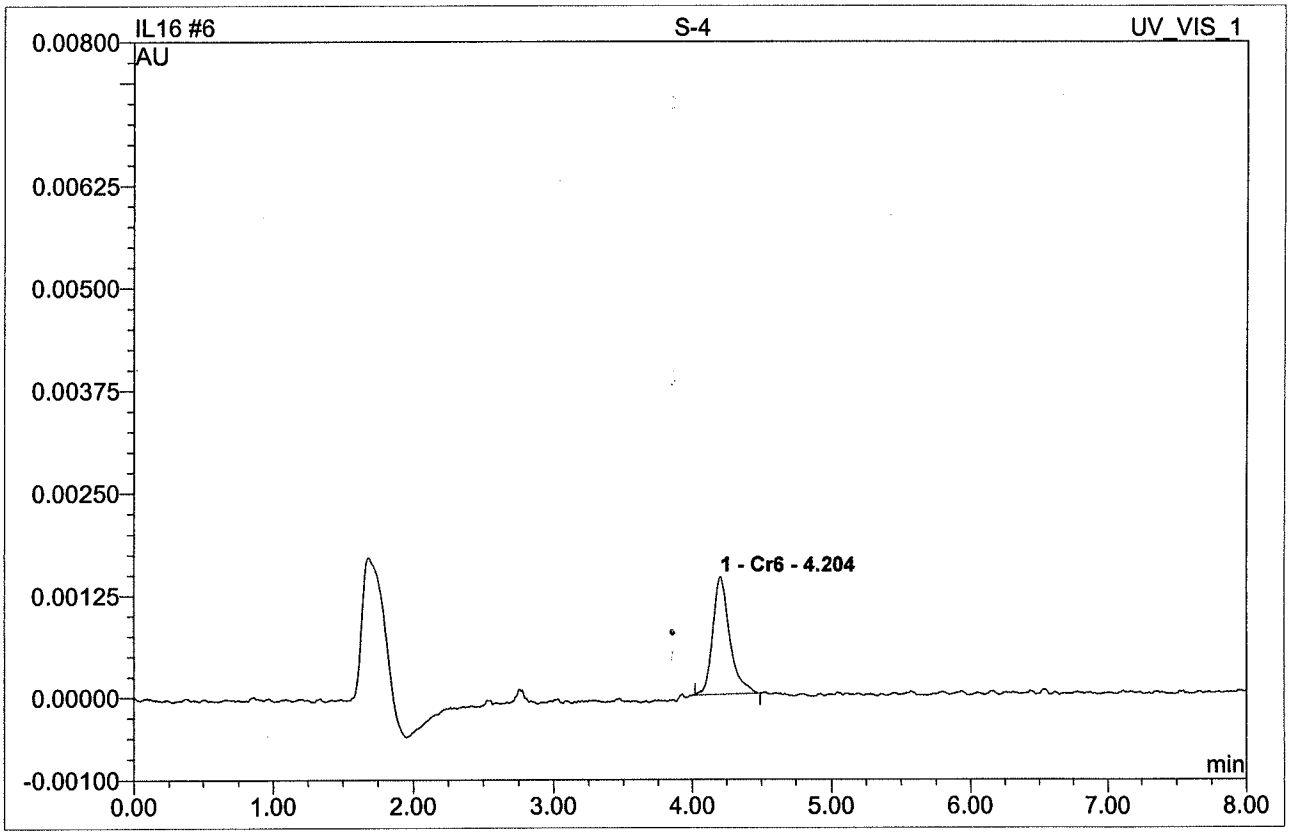


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.22	Cr6	0.0007070	0.0001022	100.00	0.993	BMB
Total:			0.001	0.000	100.00	0.993	

IL16 006 S-4

2.0 PPB

Sample Name:	**S-4**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 17:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

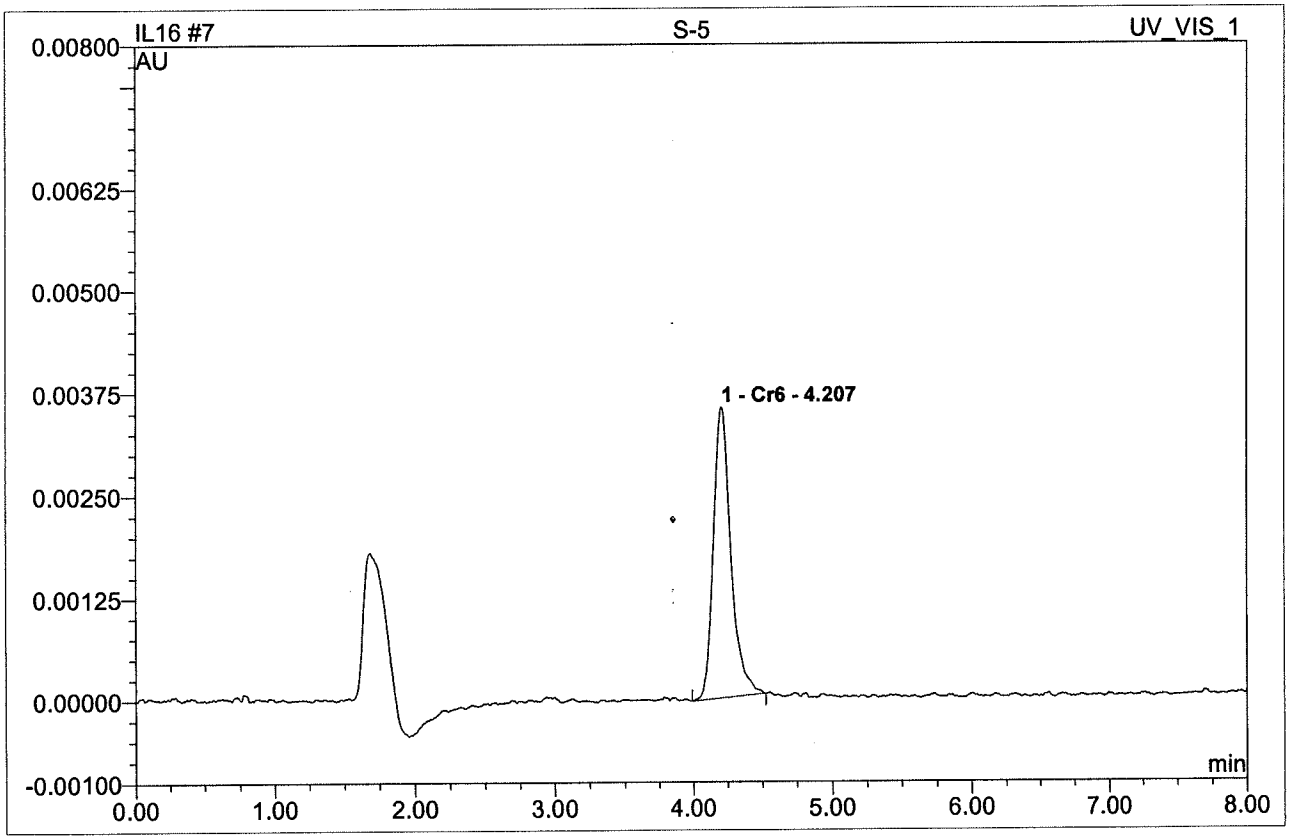


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.20	Cr6	0.0014420	0.0002059	100.00	1.985	BMB
Total:			0.001	0.000	100.00	1.985	

IL16 007 S-5

5.0 PPB

Sample Name:	**S-5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 17:13**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



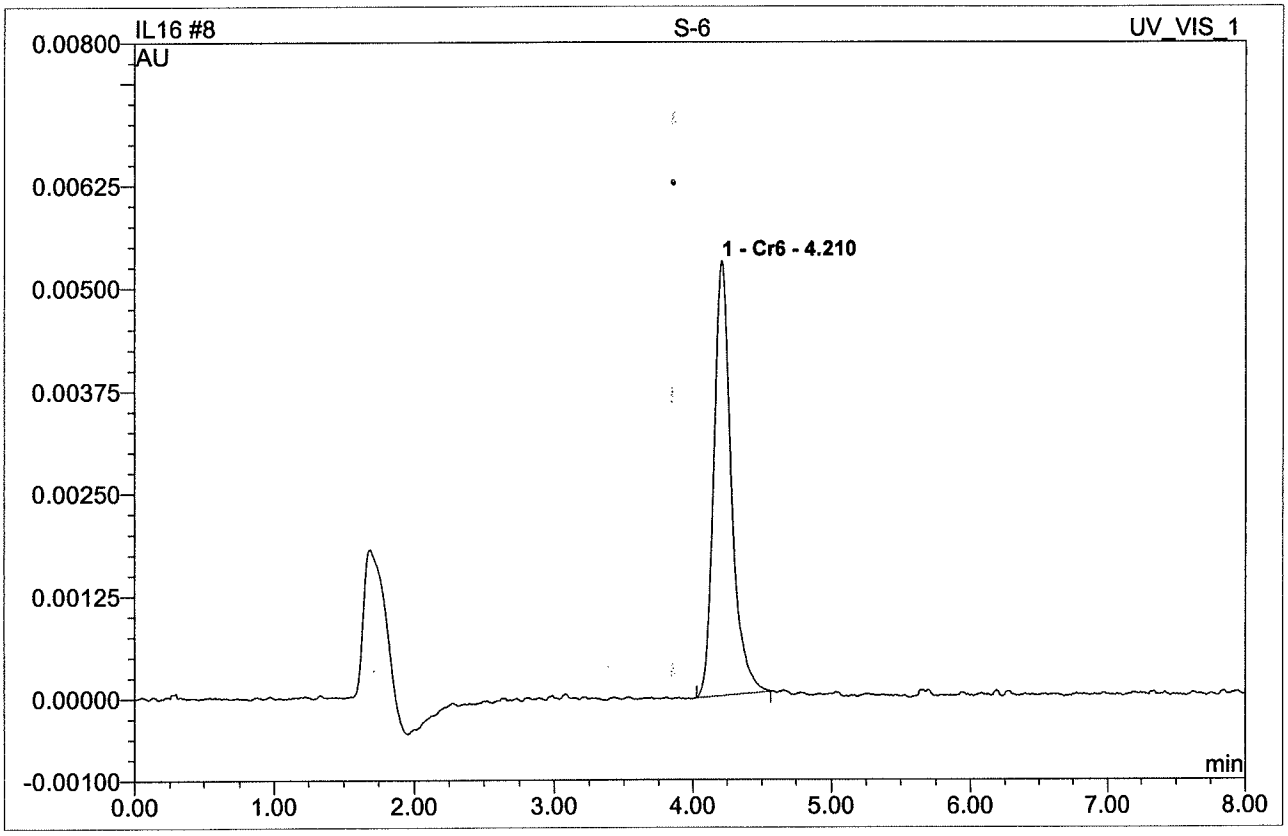
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0035460	0.0005221	100.00	5.011	BMB
Total:			0.004	0.001	100.00	5.011	

12/19/21

IL16 008 S-6

7.5 PPB

Sample Name:	**S-6**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 17:23**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

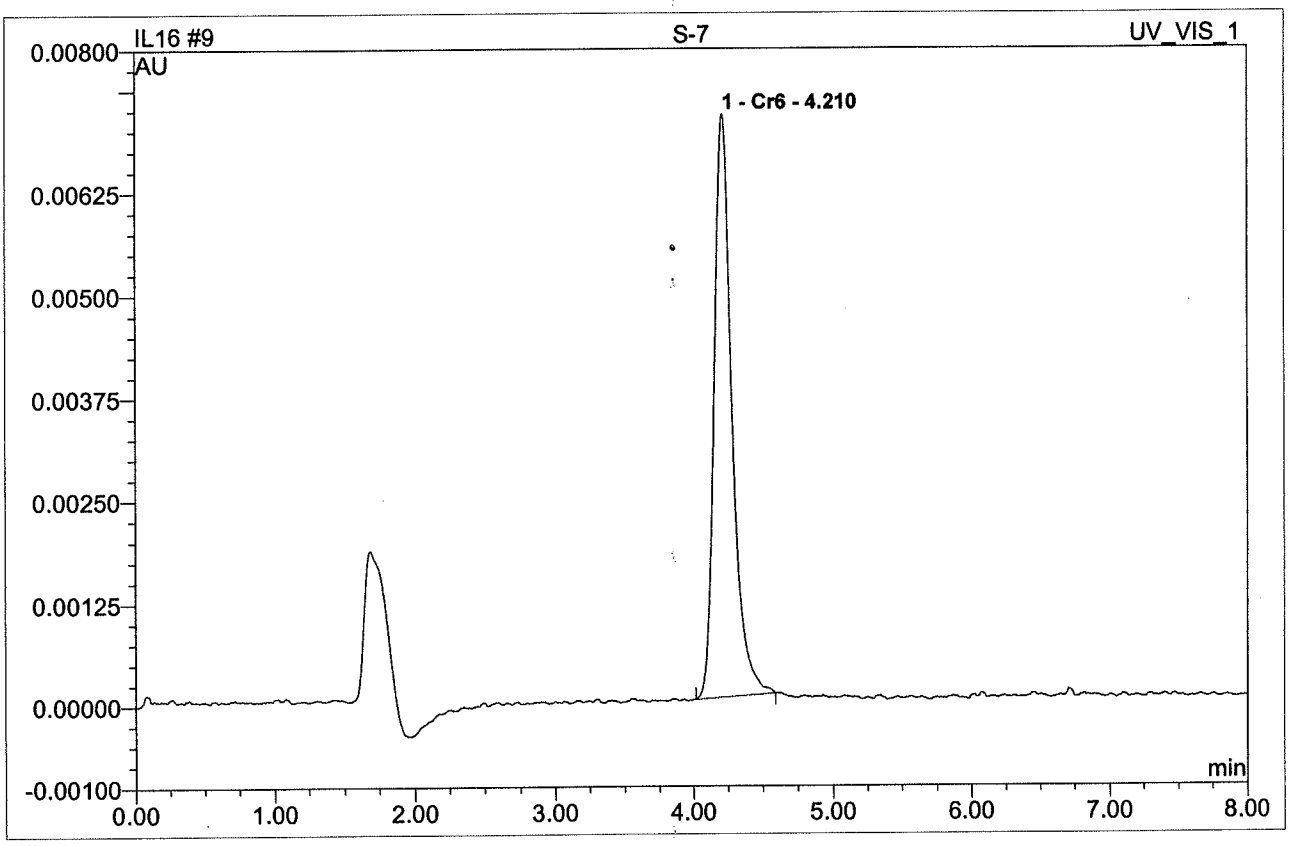


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0052960	0.0007817	100.00	7.495	BMB
Total:			0.005	0.001	100.00	7.495	

IL16 009 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 17:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



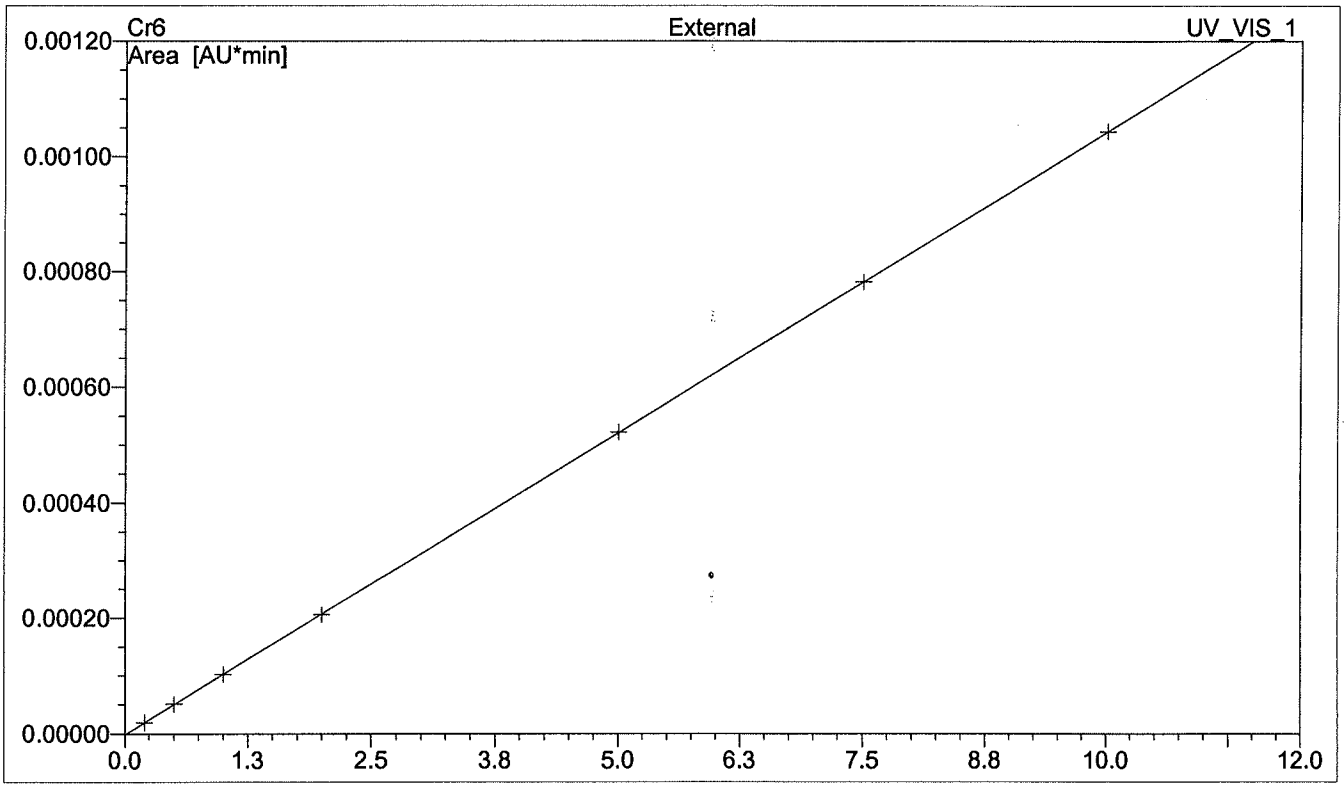
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0071060	0.0010437	100.00	10.002	BMB
Total:			0.007	0.001	100.00	10.002	

12/20/21

9 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/16/2021 17:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square	Offset	Slope	Curve
1	4.21	Cr6	0LOff	7	1.0000	-0.0000015	0.0001045	0.0000
Average:					1.0000	0.0000	0.0001	0.0000

SECOND SOURCE VERIFICATION

IC RESULT FORM CalVersion : CR6.L16/IL16(2021)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IL16001	IB	C	ND	12/16/2116:00	1
IL16002	S-0	C	ND	12/16/2116:10	1
IL16003	S-1	C	0.198	12/16/2116:31	1
IL16004	S-2	C	0.503	12/16/2116:41	1
IL16005	S-3	C	0.993	12/16/2116:52	1
IL16006	S-4	C	1.985	12/16/2117:02	1
IL16007	S-5	C	5.011	12/16/2117:13	1
IL16008	S-6	C	7.495	12/16/2117:23	1
IL16009	S-7	C	10.002	12/16/2117:33	1
IL16010	ICV	C	101%	12/16/2117:44	1
IL16011	ICB	C	ND	12/16/2117:54	1
IL16012	LOW CCV	C	0.202	12/16/2118:05	1

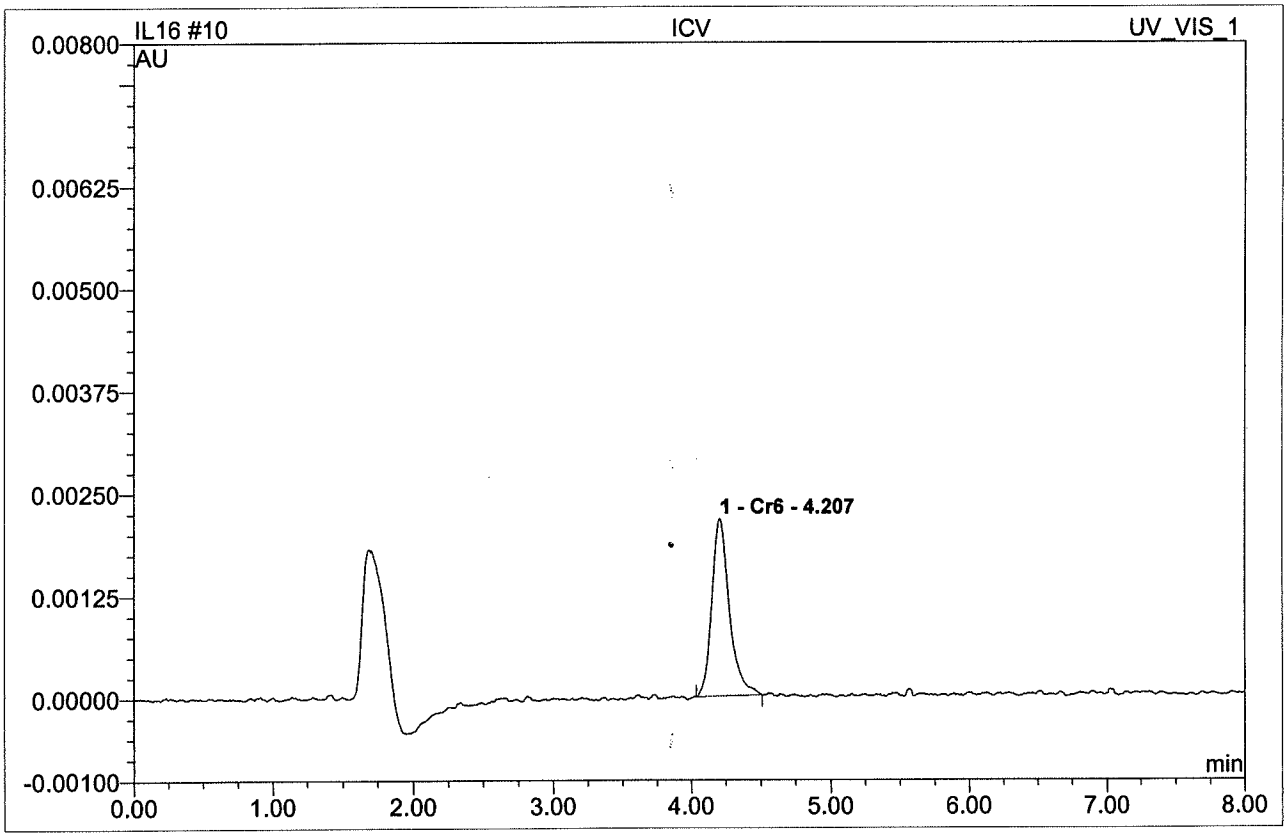
METHOD: IC59L16
SOLVENT: BUFFER (SP2-05-06-01)

LCS 12/29/21

IL16 010 ICV

3.0 PPB

Sample Name:	**ICV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 17:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

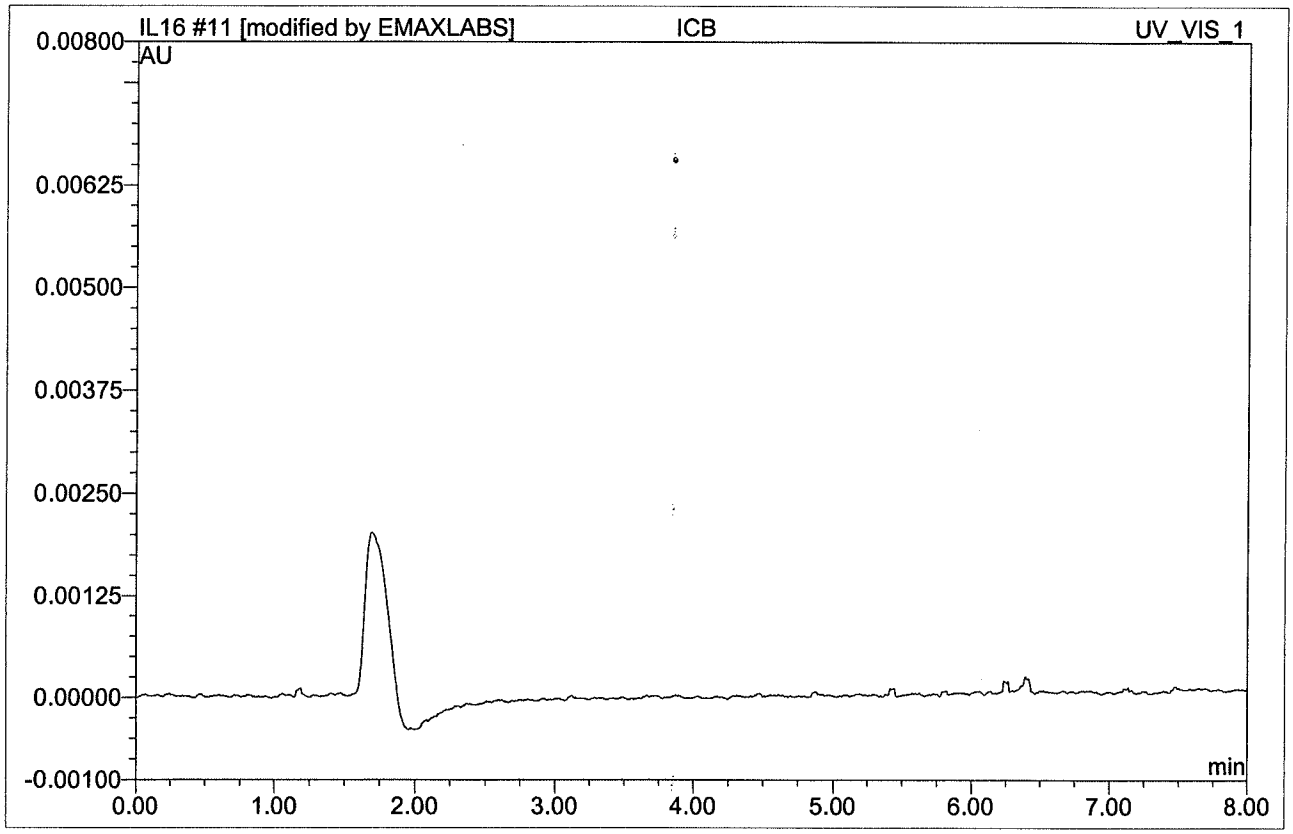


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0021620	0.0003156	100.00	3.034	BMB
Total:			0.002	0.000	100.00	3.034	

$$\text{Conc. (ppb)} = \frac{\text{Area - offset}}{\text{slope}}$$

IL16 011 ICB

Sample Name:	**ICB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 17:54**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

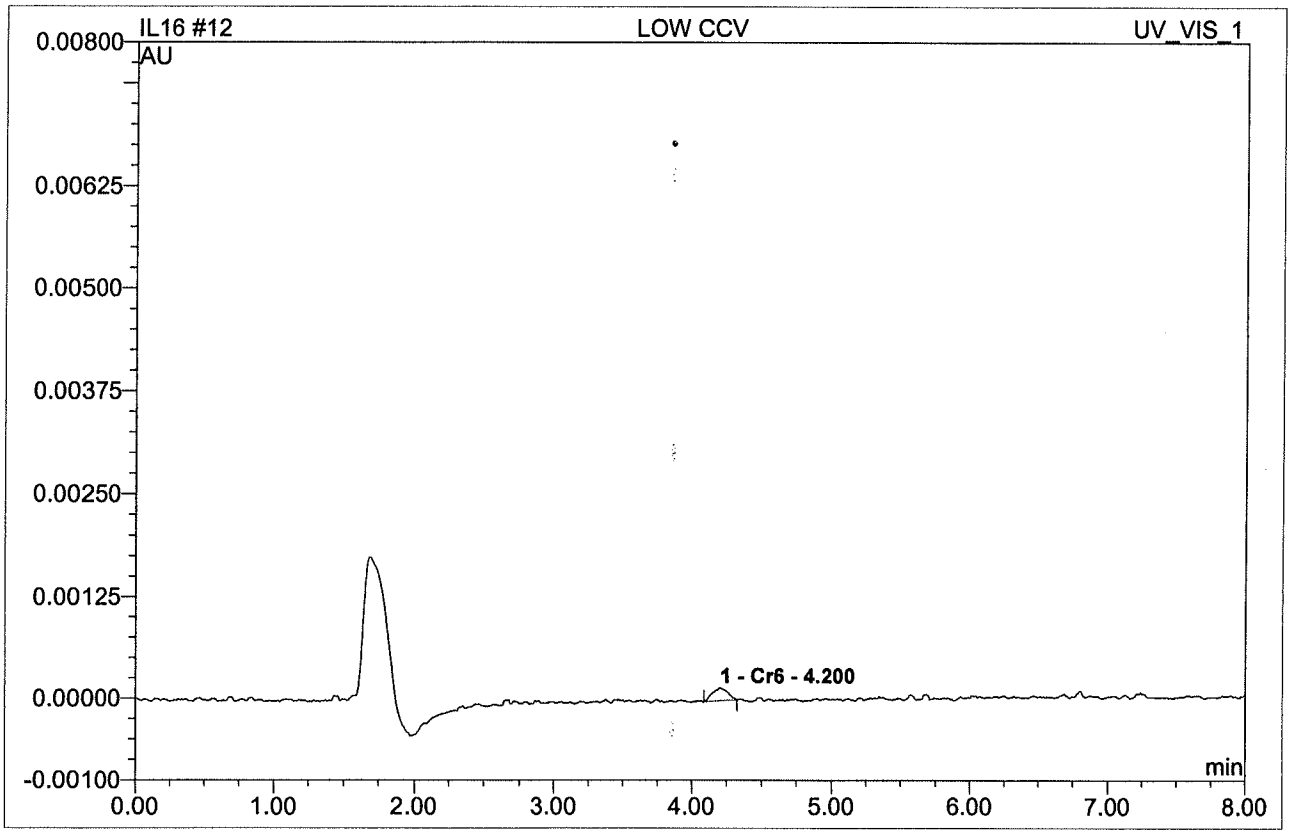


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 012 LOW CCV

0.2 PPB

Sample Name:	**LOW CCV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 18:05**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.20	Cr6	0.0001550	0.0000196	100.00	0.202	BMB
Total:			0.000	0.000	100.00	0.202	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

DAILY CALIBRATIONS

Continuing Calibration Summary Form

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG : 21L159A
Method : E218.6
QuantMethod : IC59L16
InstrumentID: 59
Parameter : HEXAVALENT CHROMIUM

LFID	LSID	DF	Expected	Result	Unit	%Rec	AnalysisDateTime
IL16012	LOW CCV	1	0.2	0.202	ug/L	101	12/16/2118:05
IL16013	CCV1	1	2	1.972	ug/L	99	12/16/2118:18
IL16025	CCV3	1	2	1.957	ug/L	98	12/16/2120:27
IL16037	CCV5	1	2	1.993	ug/L	100	12/16/2122:32
IL16049	CCV7	1	2	1.915	ug/L	96	12/17/2100:37
IL17001	CCV17	1	2	1.994	ug/L	100	12/17/2113:12
IL17013	CCV19	1	2	1.957	ug/L	98	12/17/2116:56
IL17024	CCV21	1	2	1.943	ug/L	97	12/17/2118:53

CCV Acceptance Criteria: 95-105%
LOW CCV Acceptance Criteria: 80-120%

IC RESULT FORM CalVersion : CR6.L16/IL16(2021)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IL16001	IB	C	ND	12/16/2116:00	1
IL16002	S-0	C	ND	12/16/2116:10	1
IL16003	S-1	C	0.198	12/16/2116:31	1
IL16004	S-2	C	0.503	12/16/2116:41	1
IL16005	S-3	C	0.993	12/16/2116:52	1
IL16006	S-4	C	1.985	12/16/2117:02	1
IL16007	S-5	C	5.011	12/16/2117:13	1
IL16008	S-6	C	7.495	12/16/2117:23	1
IL16009	S-7	C	10.002	12/16/2117:33	1
IL16010	ICV	C	101%	12/16/2117:44	1
IL16011	ICB	C	ND	12/16/2117:54	1
IL16012	LOW CCV	C	0.202	12/16/2118:05	1
IL16013	CCV1	C	99%	12/16/2118:18	1
IL16014	CCB1	C	ND	12/16/2118:28	1
IL16015	HCL019WB	C	ND	12/16/2118:39	1
IL16016	HCL019WL	C	1.995	12/16/2118:49	1
IL16017	HCL019WC	C	2.000	12/16/2118:59	1
IL16018	L159-01	C	ND	12/16/2119:10	1
IL16019	L159-01M	C	0.932	12/16/2119:20	1
IL16020	L159-01S	C	0.969	12/16/2119:31	1
IL16021	L159-03	C	7.957	12/16/2119:41	1
IL16022	L159-03M	C	9.982	12/16/2119:56	1
IL16023	L159-04	C	7.954	12/16/2120:06	1
IL16024	L159-04M	C	9.918	12/16/2120:17	1
IL16025	CCV3	C	98%	12/16/2120:27	1
IL16026	CCB3	C	ND	12/16/2120:37	1
IL16027	L159-23	C	ND	12/16/2120:48	1
IL16028	L159-23M	C	ND	12/16/2120:58	1
IL16029	L159-23S	C	ND	12/16/2121:09	1
IL16030	L159-14	C	ND	12/16/2121:19	1
IL16031	L159-14M	C	0.837	12/16/2121:29	1
IL16032	L159-16	C	ND	12/16/2121:40	1
IL16033	L159-16M	C	0.715	12/16/2121:50	1
IL16034	L159-18	C	ND	12/16/2122:01	1
IL16035	L159-18M	C	ND	12/16/2122:11	1
IL16036	L156-01	*	27.165E	12/16/2122:21	1
IL16037	CCV5	C	100%	12/16/2122:32	1
IL16038	CCB5	C	ND	12/16/2122:42	1
IL16039	L159-20	C	ND	12/16/2122:53	1
IL16040	L159-20M	C	0.992	12/16/2123:03	1
IL16041	L159-21	C	7.635	12/16/2123:13	1
IL16042	L159-21M	C	8.688	12/16/2123:24	1
IL16043	L159-22	C	1.699	12/16/2123:34	1
IL16044	L159-22M	C	2.720	12/16/2123:45	1
IL16045	L159-02	C	ND	12/16/2123:55	1
IL16046	L159-02M	C	0.984	12/17/2100:06	1
IL16047	L159-09	C	ND	12/17/2100:16	1
IL16048	L159-09M	C	1.017	12/17/2100:26	1
IL16049	CCV7	C	96%	12/17/2100:37	1
IL16050	CCB7	C	ND	12/17/2100:47	1
IL16051	L159-13	C	ND	12/17/2100:58	1
IL16052	L159-13M	C	0.916	12/17/2101:08	1
IL16053	L159-15	C	ND	12/17/2101:18	1
IL16054	L159-15M	C	0.970	12/17/2101:29	1
IL16055	L159-17	C	ND	12/17/2101:39	1
IL16056	L159-17M	C	0.949	12/17/2101:50	1
IL16057	L159-19	C	ND	12/17/2102:00	1
IL16058	L159-19M	C	0.943	12/17/2102:10	1
IL16059	L159-24	C	ND	12/17/2102:21	1
IL16060	L159-24M	C	0.985	12/17/2102:31	1
IL16061	CCV9	C	98%	12/17/2102:42	1
IL16062	CCB9	C	ND	12/17/2102:52	1
IL16063	L159-23I	C	ND	12/17/2103:02	5
IL16064	L159-23M	C	4.389	12/17/2103:13	5
IL16065	L159-23S	C	4.360	12/17/2103:23	5
IL16066	L159-23J	C	ND	12/17/2103:34	10
IL16067	L159-23M	C	9.387	12/17/2103:44	10
IL16068	L159-23S	C	9.383	12/17/2103:54	10
IL16069	CCV11	C	99%	12/17/2108:19	1
IL16070	CCB11	C	ND	12/17/2108:29	1
IL16071	L159-14I	C	ND	12/17/2108:39	5
IL16072	L159-14M	C	4.754	12/17/2108:50	5
IL16073	L159-16I	C	ND	12/17/2109:00	5
IL16074	L159-16M	C	4.676	12/17/2109:11	5

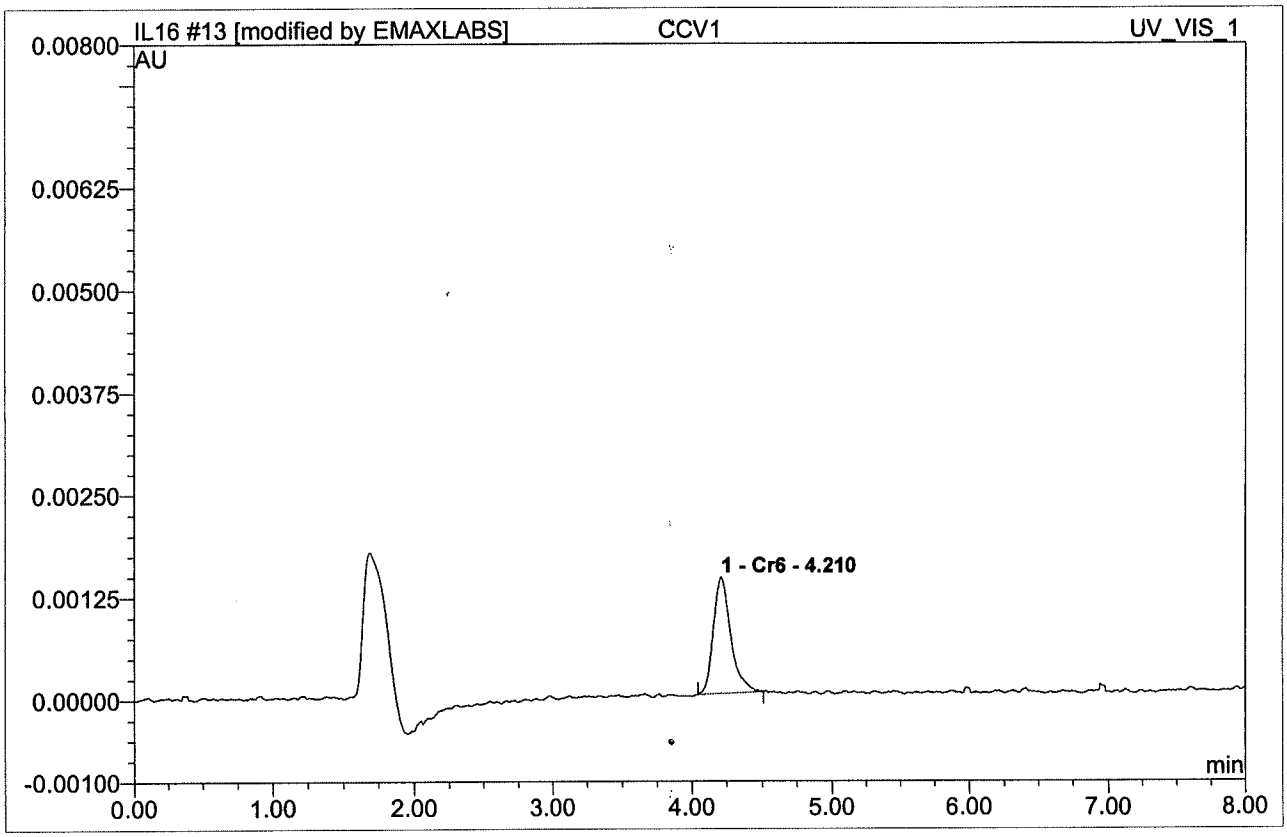
IL16075	L159-18I	C	ND	12/17/2109:21	5
IL16076	L159-18M	C	4.548	12/17/2109:31	5
IL16077	L159-21I	C	7.667	12/17/2109:52	2
IL16078	L159-21M	C	11.627	12/17/2110:02	2
IL16079	L159-22I	C	1.659	12/17/2110:14	2
IL16080	L159-22M	C	3.646	12/17/2110:24	2
IL16081	CCV13	C	97%	12/17/2110:35	1
IL16082	CCB13	C	ND	12/17/2110:45	1
IL16083	L156-01I	C	27.611	12/17/2110:59	5
IL16084	L159-11	C	ND	12/17/2111:10	1
IL16085	L159-11M	C	0.457	12/17/2111:20	1
IL16086	L159-12	C	ND	12/17/2111:31	1
IL16087	L159-12M	C	0.912	12/17/2111:52	1
IL16088	L159-11I	C	ND	12/17/2112:03	5
IL16089	L159-11M	C	4.525	12/17/2112:13	5
IL16090	CCV15	C	99%	12/17/2112:24	1
IL16091	CCB15	C	ND	12/17/2112:34	1

IC RESULT FORM CalVersion : CR6.L16/IL16(2021)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IL17001	CCV17	C	100%	12/17/2113:12	1
IL17002	CCB17	C	ND	12/17/2113:23	1
IL17003	HCL021WB	C	ND	12/17/2113:33	1
IL17004	HCL021WL	C	1.875	12/17/2113:44	1
IL17005	HCL021WC	C	1.848	12/17/2115:29	1
IL17006	L159-10	C	ND	12/17/2115:43	1
IL17007	L159-10M	C	ND	12/17/2115:53	1
IL17008	L159-05	C	ND	12/17/2116:04	1
IL17009	L159-05M	C	0.990	12/17/2116:15	1
IL17010	L159-05S	C	1.026	12/17/2116:25	1
IL17011	L159-10I	C	ND	12/17/2116:35	5
IL17012	L159-10M	C	4.935	12/17/2116:46	5
IL17013	CCV19	C	98%	12/17/2116:56	1
IL17014	CCB19	C	ND	12/17/2117:07	1
IL17015	L159-06	C	ND	12/17/2117:17	1
IL17016	L159-06M	C	0.943	12/17/2117:27	1
IL17017	L159-07	C	4.850	12/17/2117:38	1
IL17018	L159-07M	C	6.841	12/17/2117:49	1
IL17019	L159-08	C	ND	12/17/2117:59	1
IL17020	L159-08M	C	ND	12/17/2118:10	1
IL17021	L159-08I	C	ND	12/17/2118:22	5
IL17022	L159-08M	C	4.648	12/17/2118:32	5
IL17023	QC BUFFER	C	ND	12/17/2118:42	1
IL17024	CCV21	C	97%	12/17/2118:53	1
IL17025	CCB21	C	ND	12/17/2119:03	1

IL16 013 CCV1

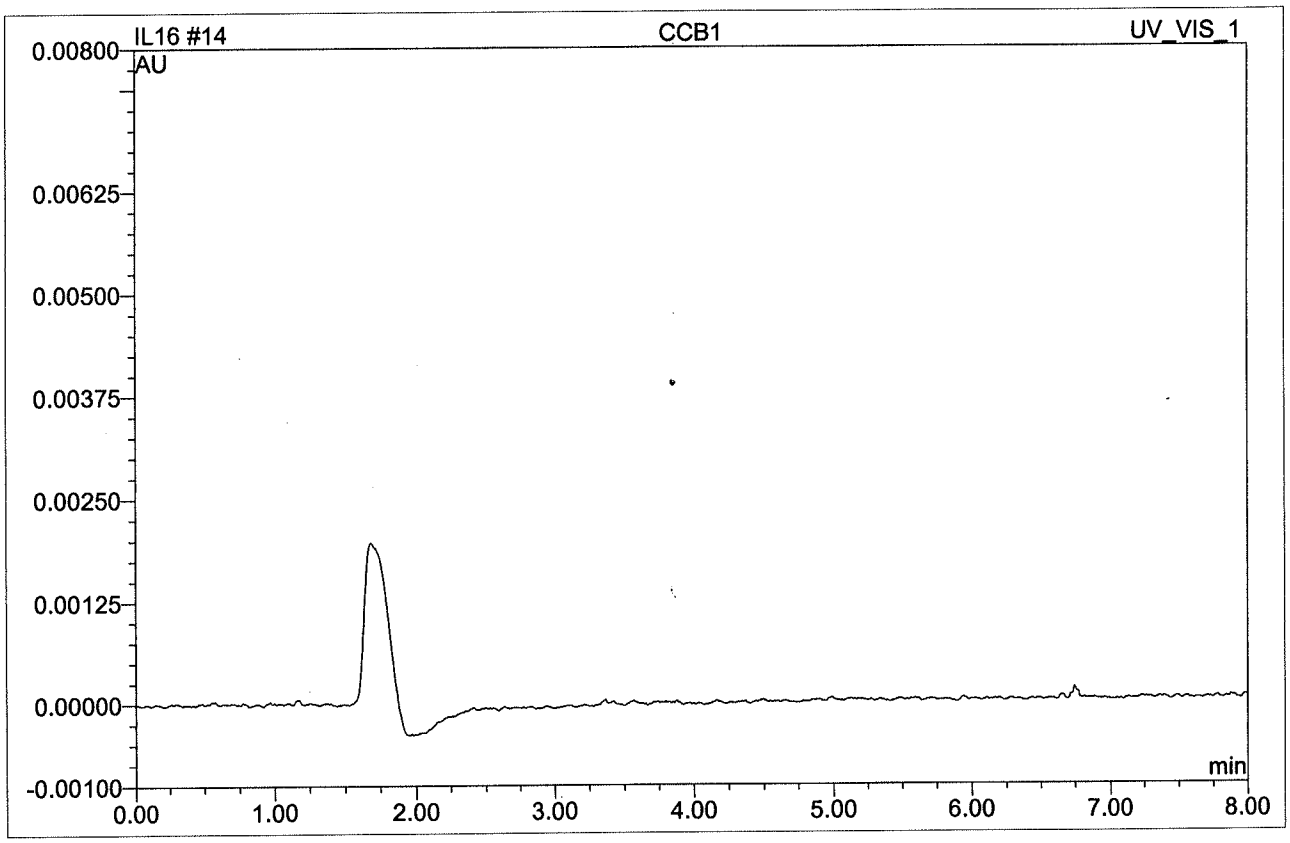
Sample Name:	**CCV1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 18:18**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0014120	0.0002046	100.00	1.972	BMB*
Total:			0.001	0.000	100.00	1.972	

IL16 014 CCB1

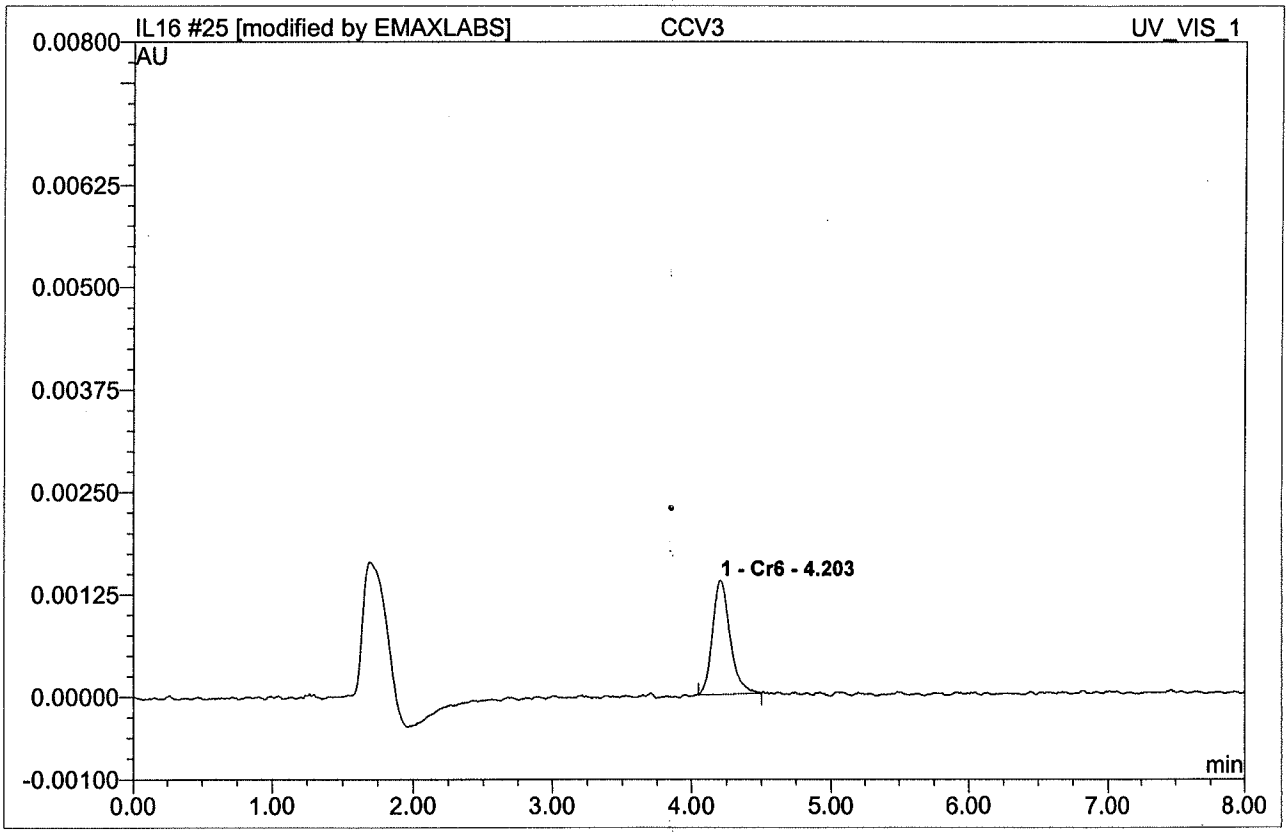
Sample Name:	**CCB1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 18:28**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 025 CCV3

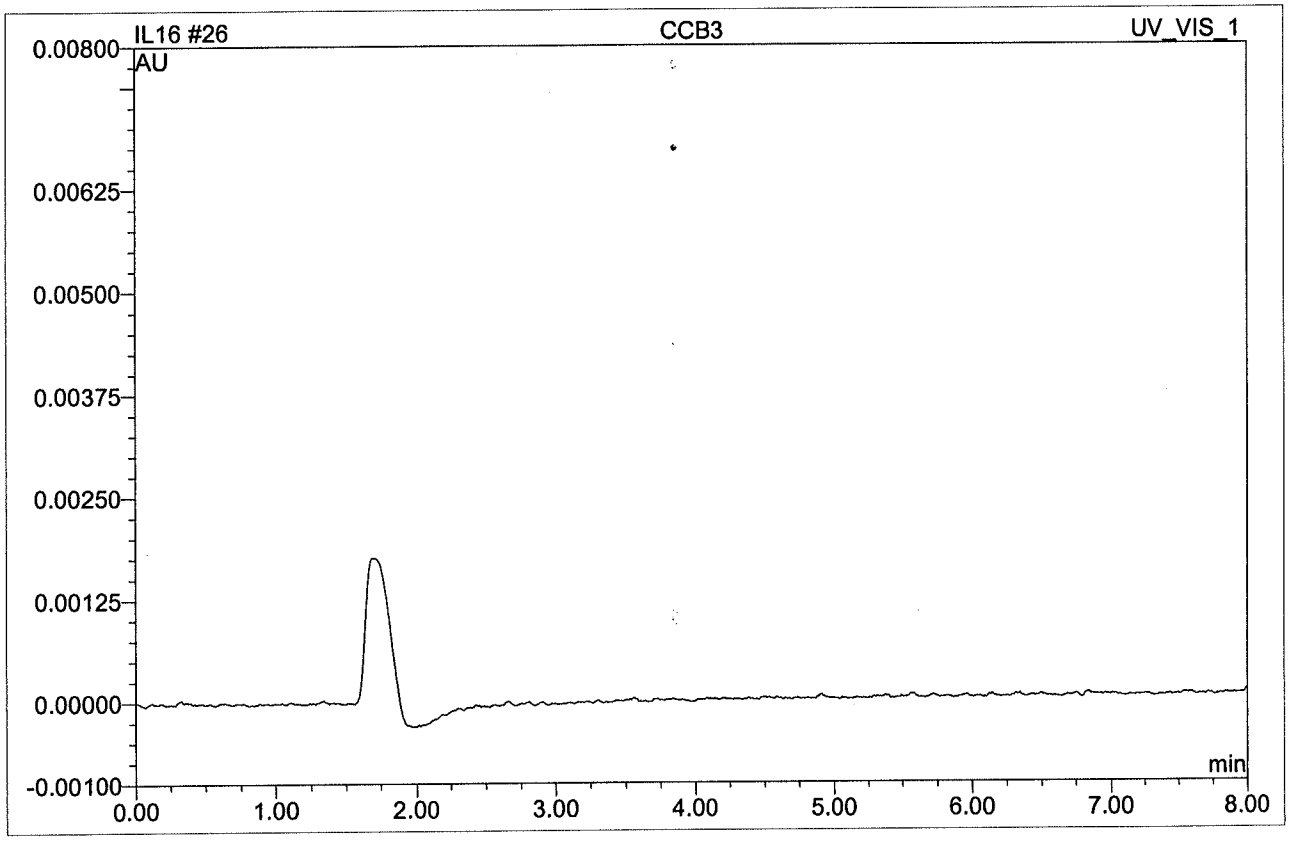
Sample Name:	**CCV3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 20:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.20	Cr6	0.0013870	0.0002030	100.00	1.957	BMB*
Total:			0.001	0.000	100.00	1.957	

IL16 026 CCB3

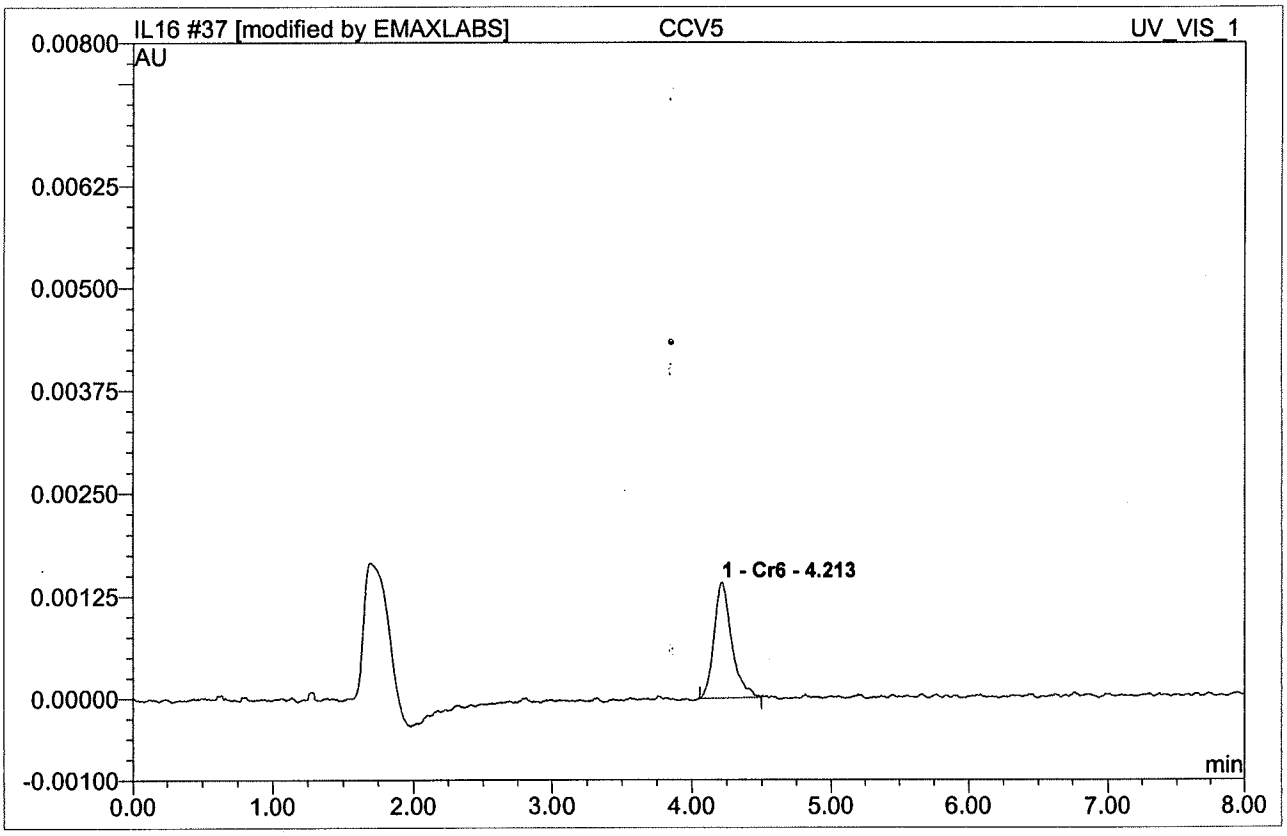
Sample Name:	**CCB3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 20:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 037 CCV5

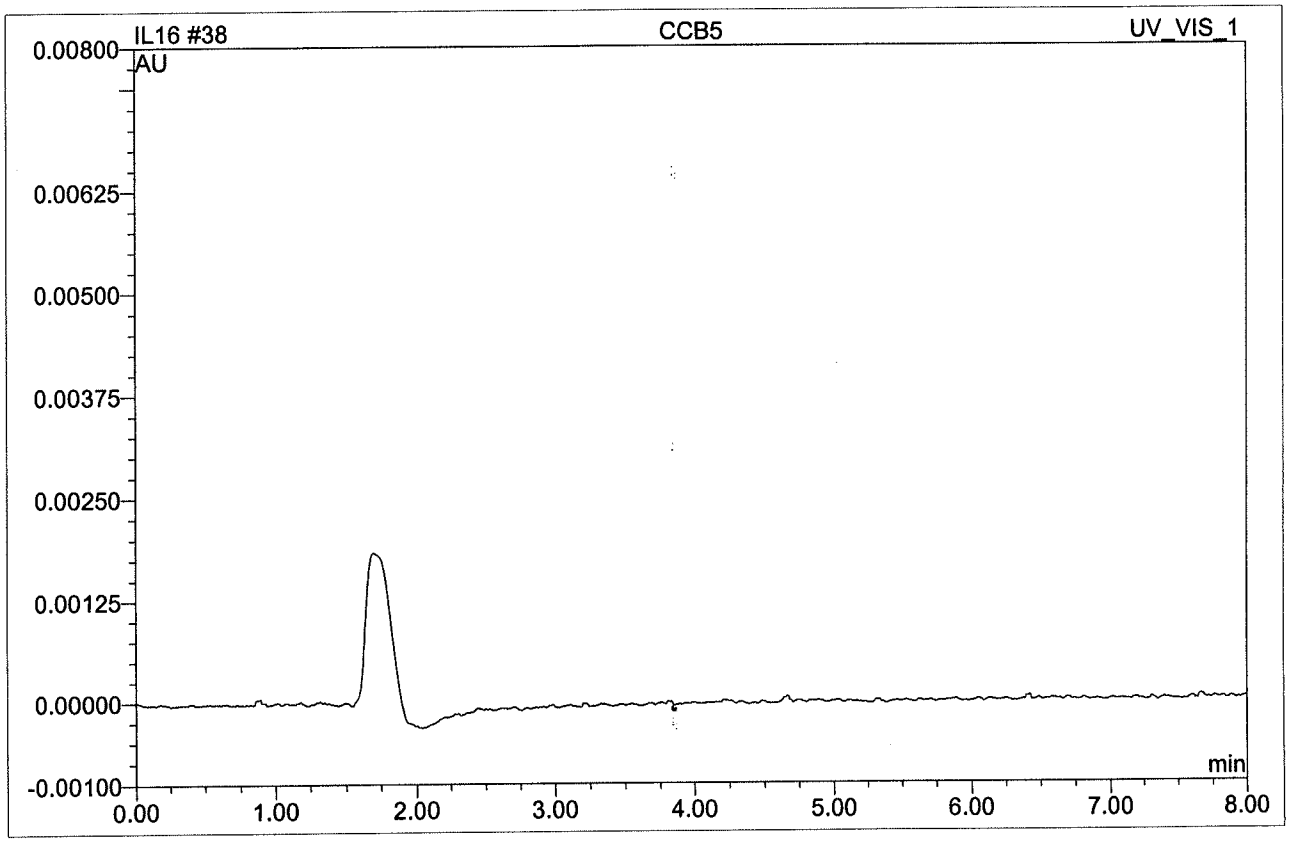
Sample Name:	**CCV5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 22:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0014110	0.0002068	100.00	1.993	BMB*
Total:			0.001	0.000	100.00	1.993	

IL16 038 CCB5

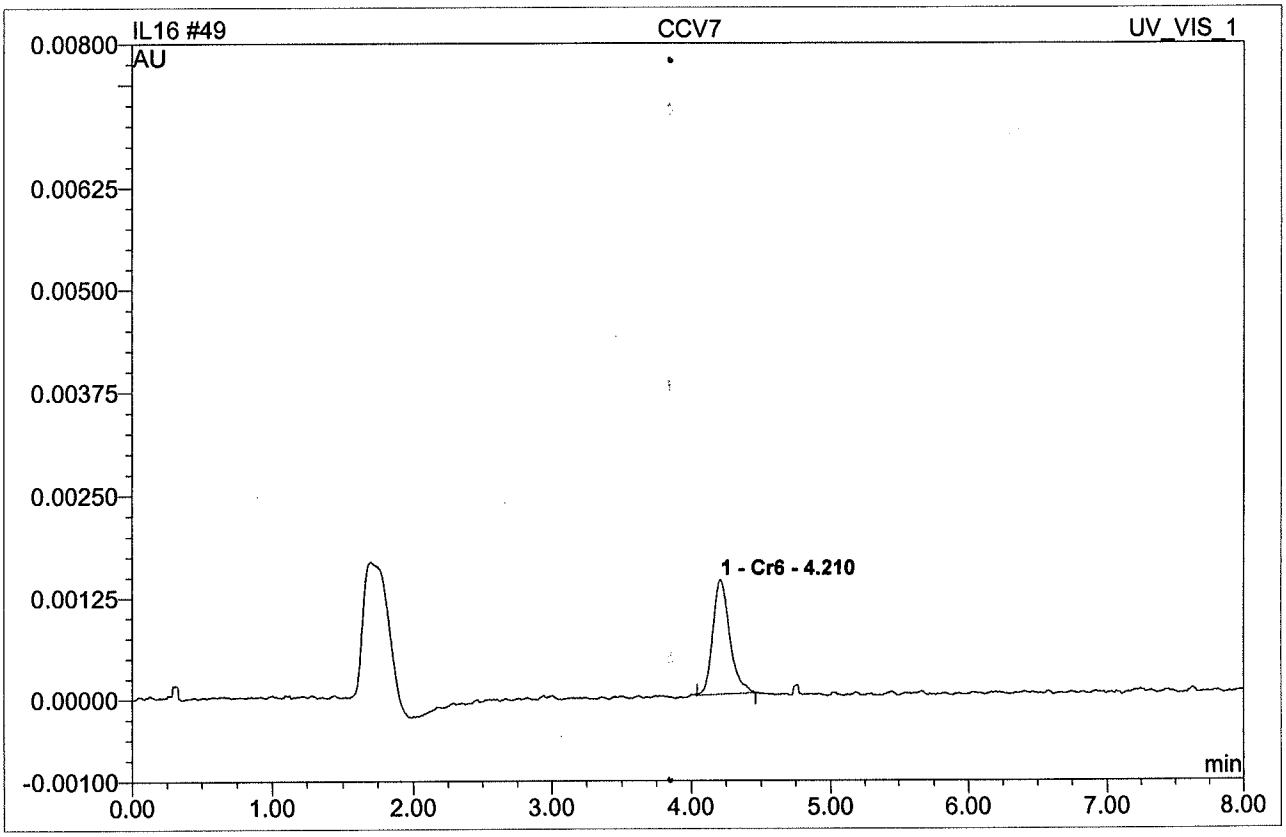
Sample Name:	**CCB5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/16/2021 22:42**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 049 CCV7

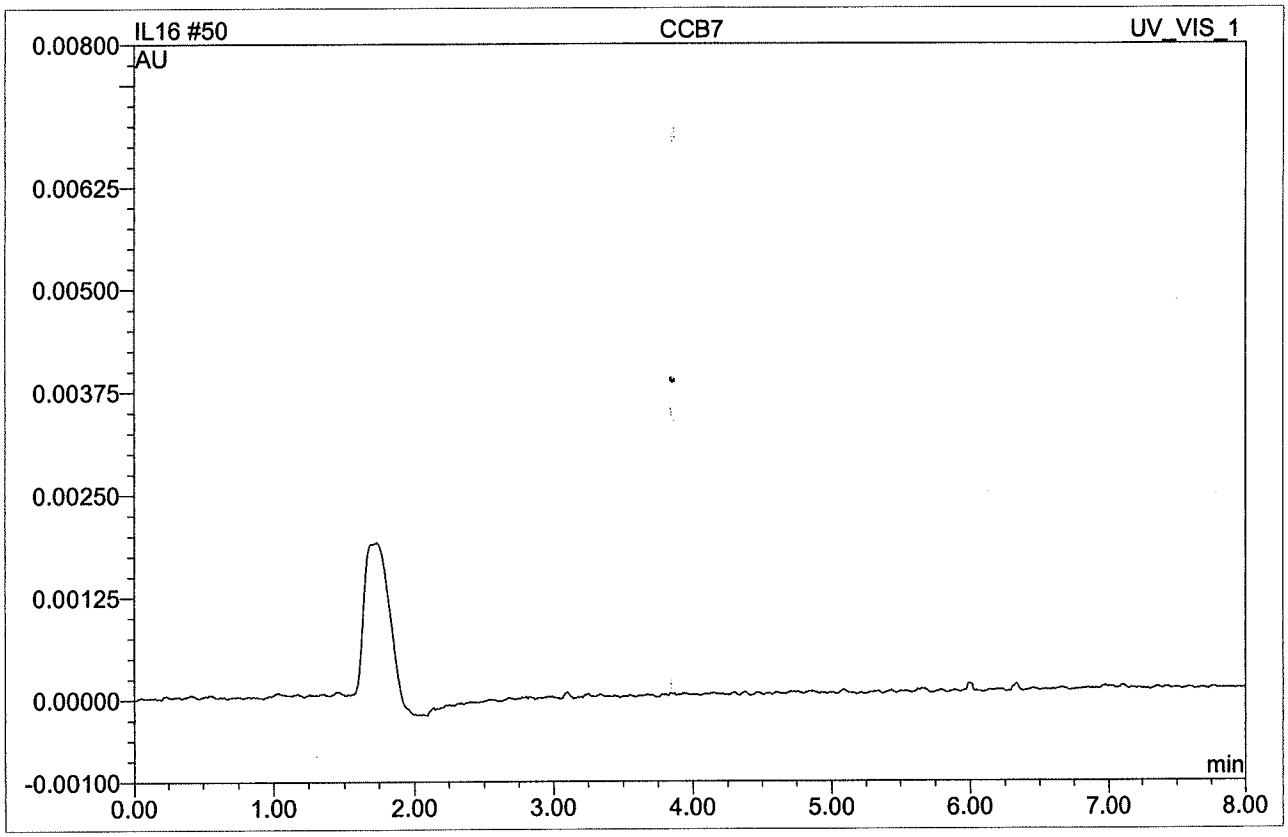
Sample Name:	**CCV7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 0:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0014050	0.0001986	100.00	1.915	BMB
Total:			0.001	0.000	100.00	1.915	

IL16 050 CCB7

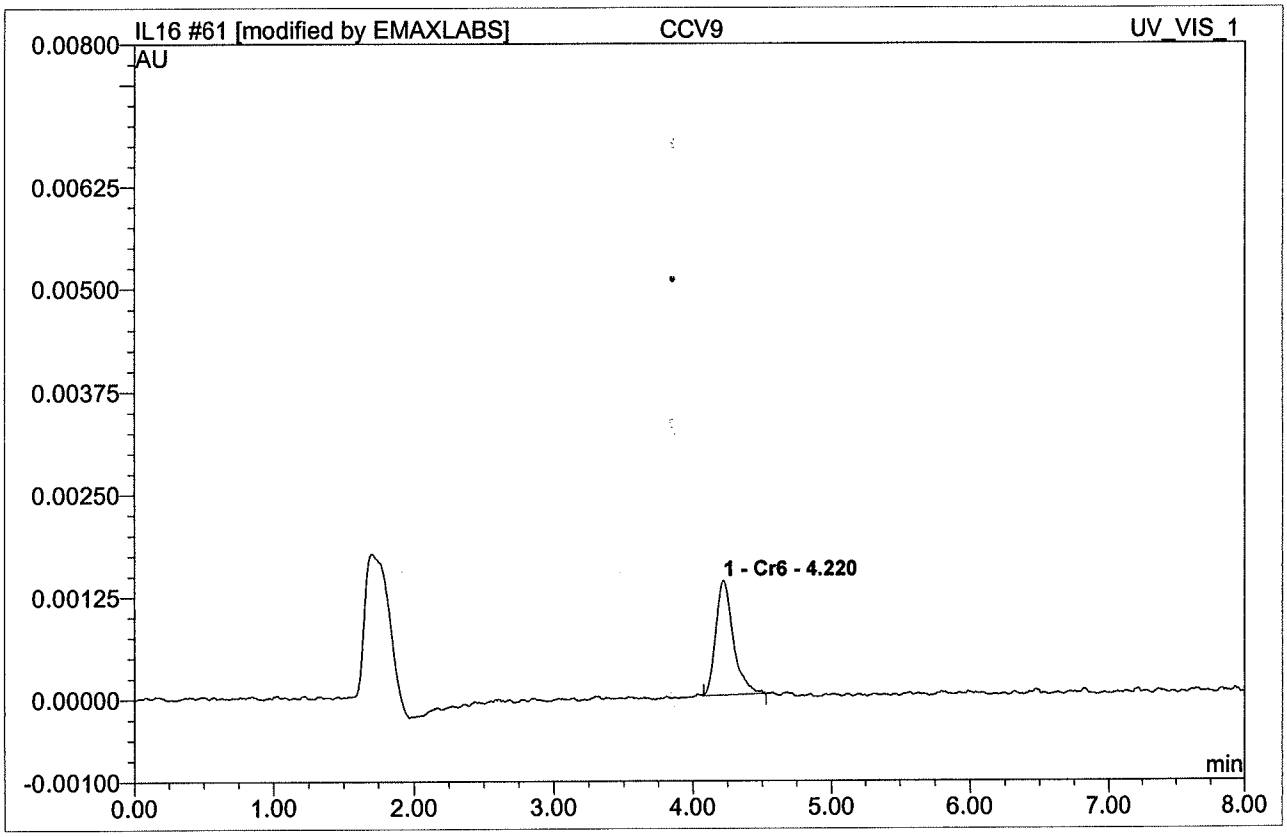
Sample Name:	**CCB7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 0:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 061 CCV9

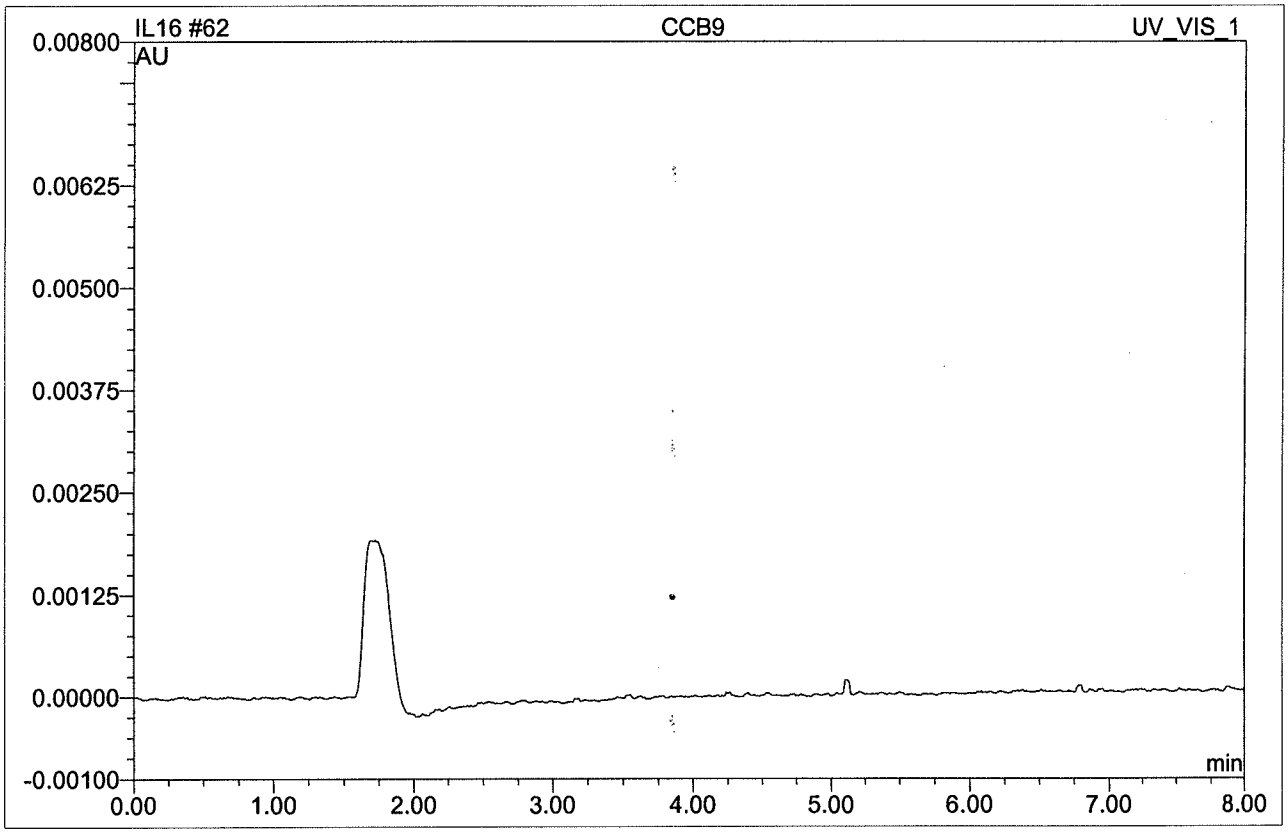
Sample Name:	**CCV9**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 2:42**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.22	Cr6	0.0013960	0.0002034	100.00	1.961	BMB*
Total:			0.001	0.000	100.00	1.961	

IL16 062 CCB9

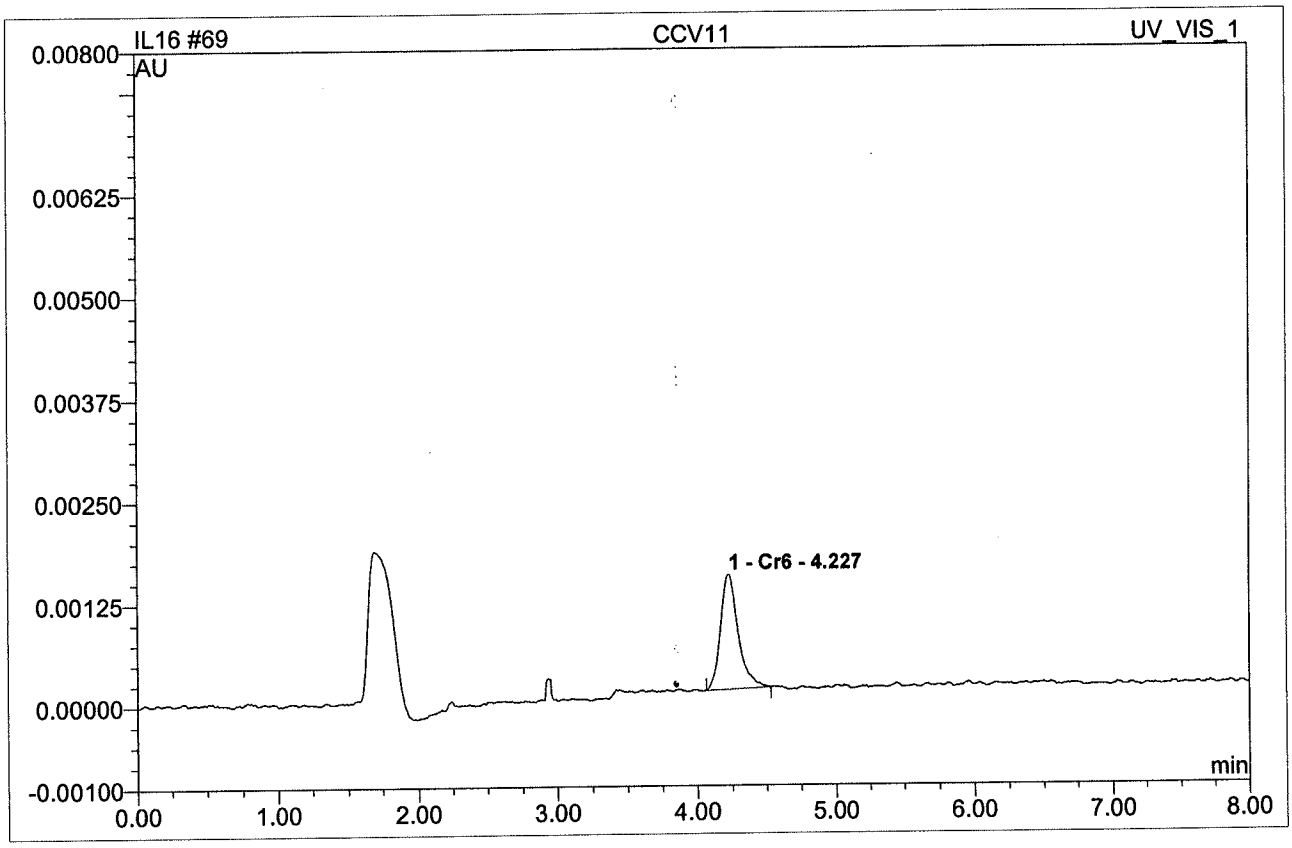
Sample Name:	**CCB9**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 2:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 069 CCV11

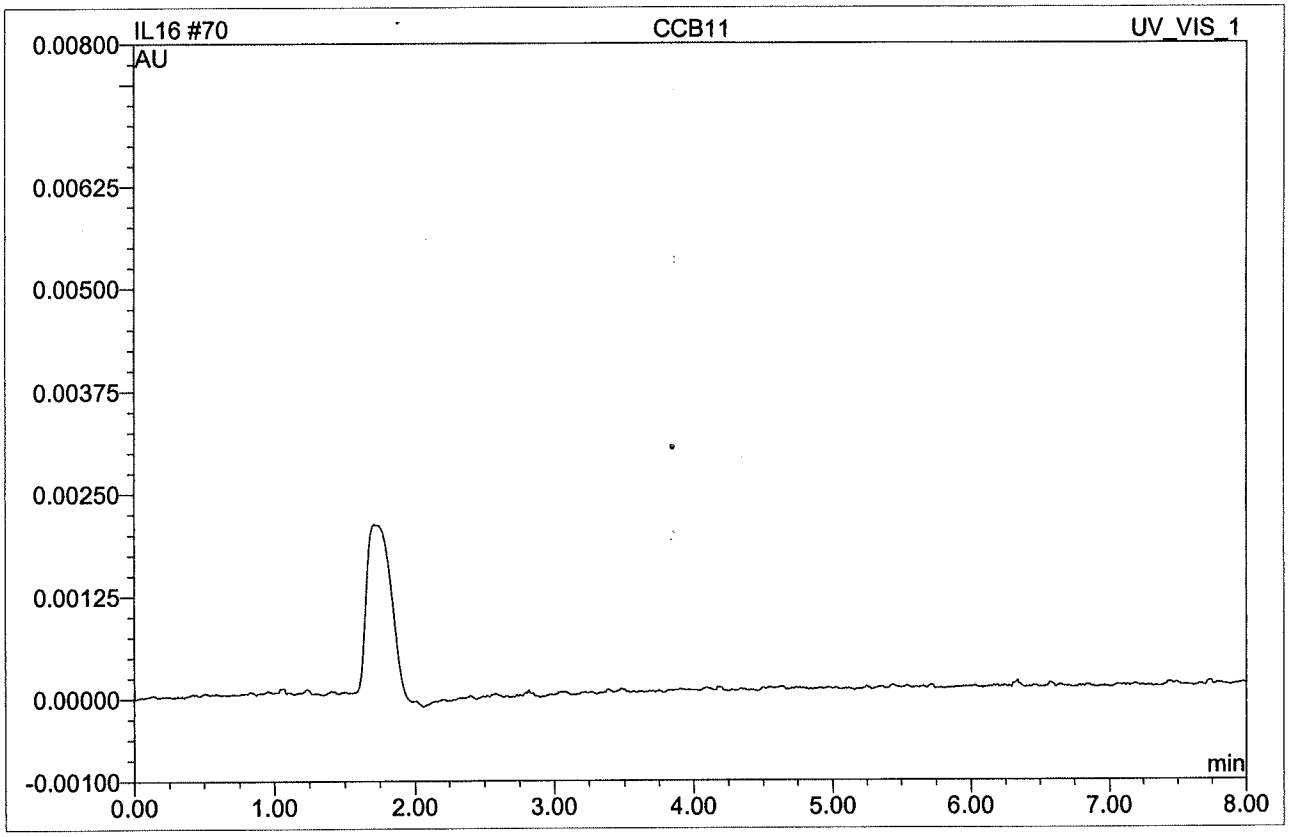
Sample Name:	**CCV11**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 8:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.23	Cr6	0.0014020	0.0002065	100.00	1.990	BMB
Total:			0.001	0.000	100.00	1.990	

IL16 070 CCB11

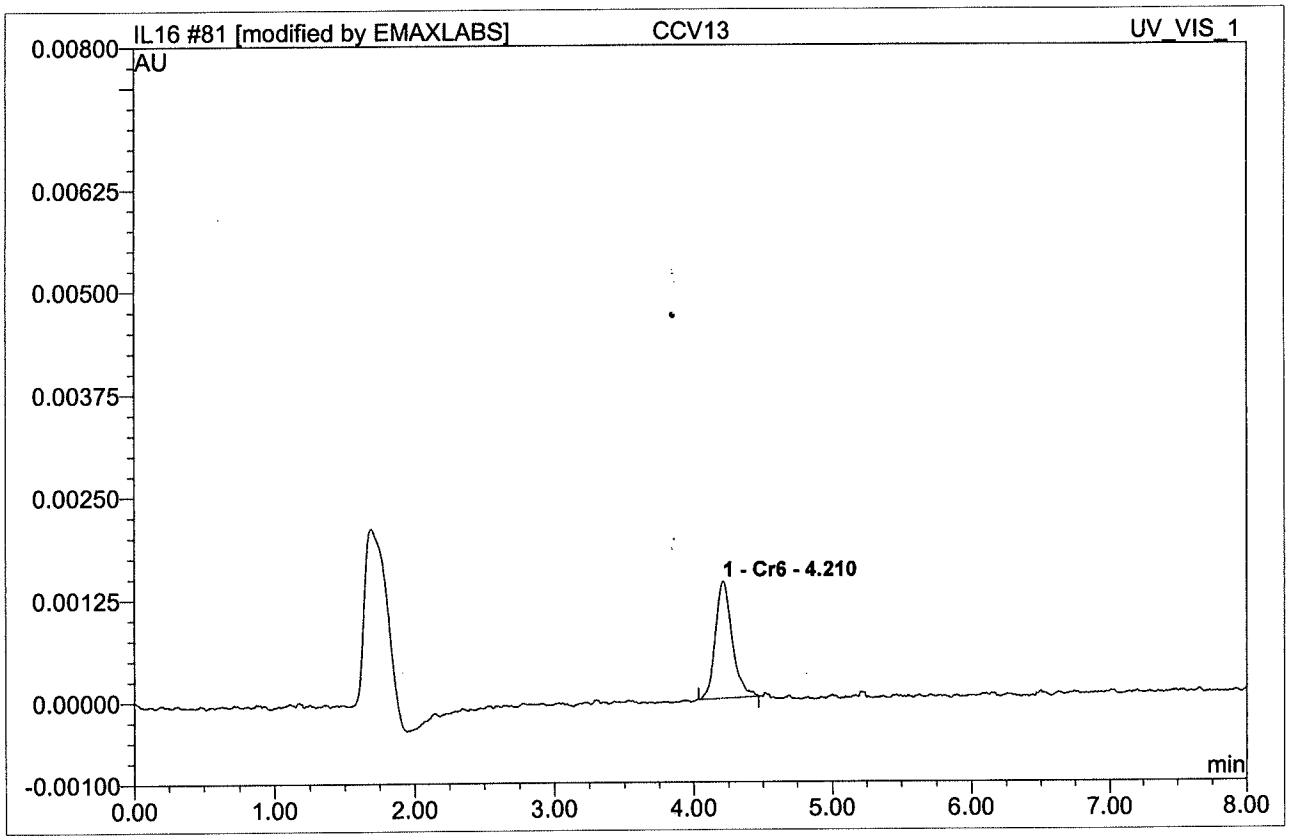
Sample Name:	**CCB11**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 8:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 081 CCV13

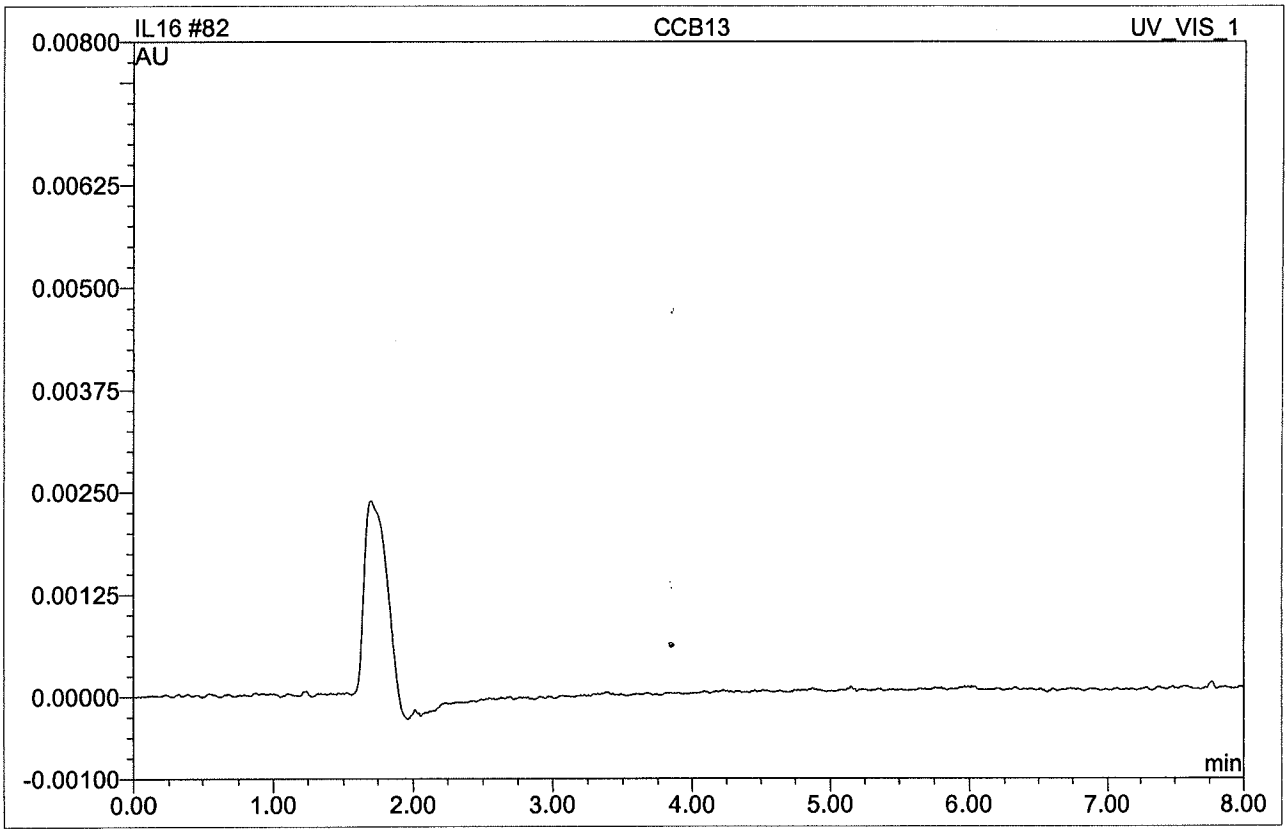
Sample Name:	**CCV13**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 10:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0014220	0.0002021	100.00	1.949	BMB*
Total:			0.001	0.000	100.00	1.949	

IL16 082 CCB13

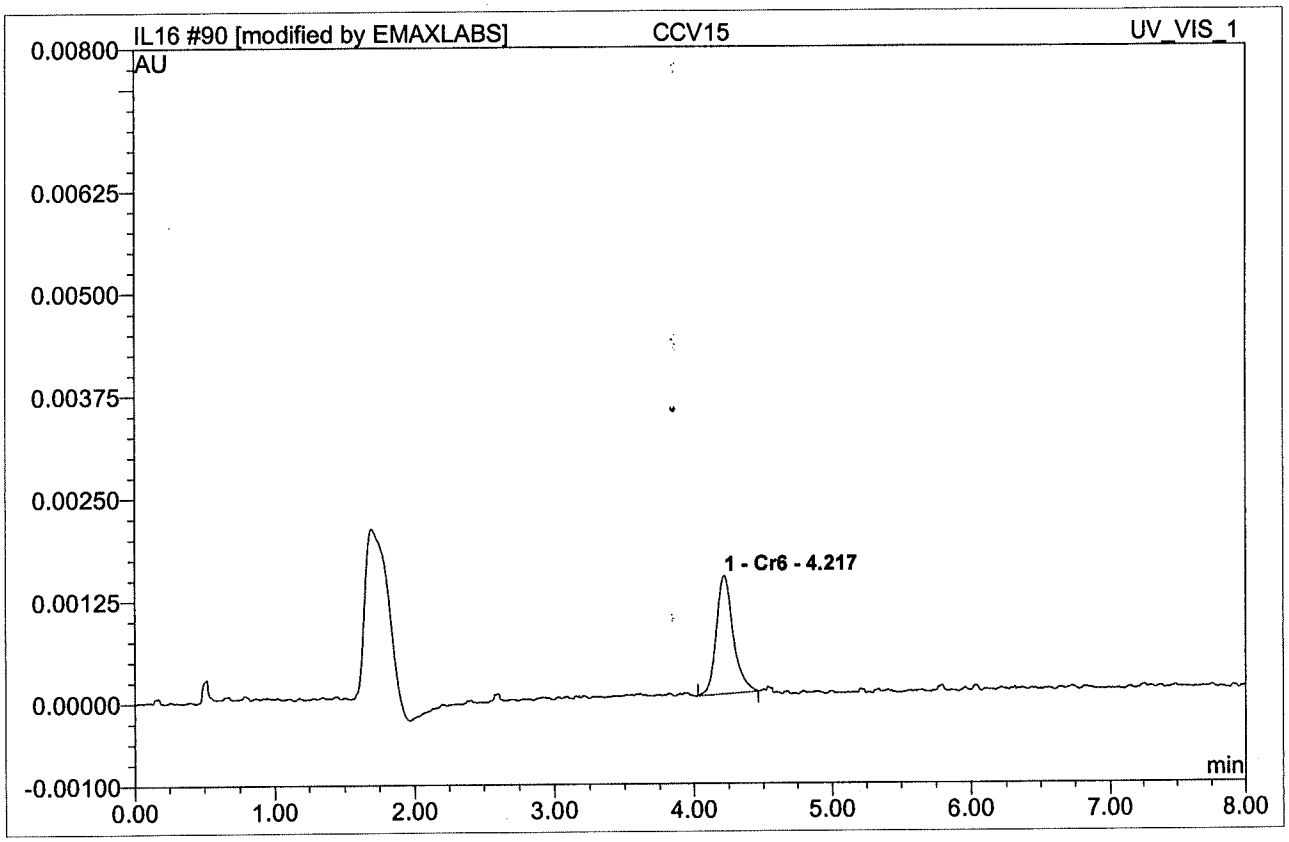
Sample Name:	**CCB13**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 10:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL16 090 CCV15

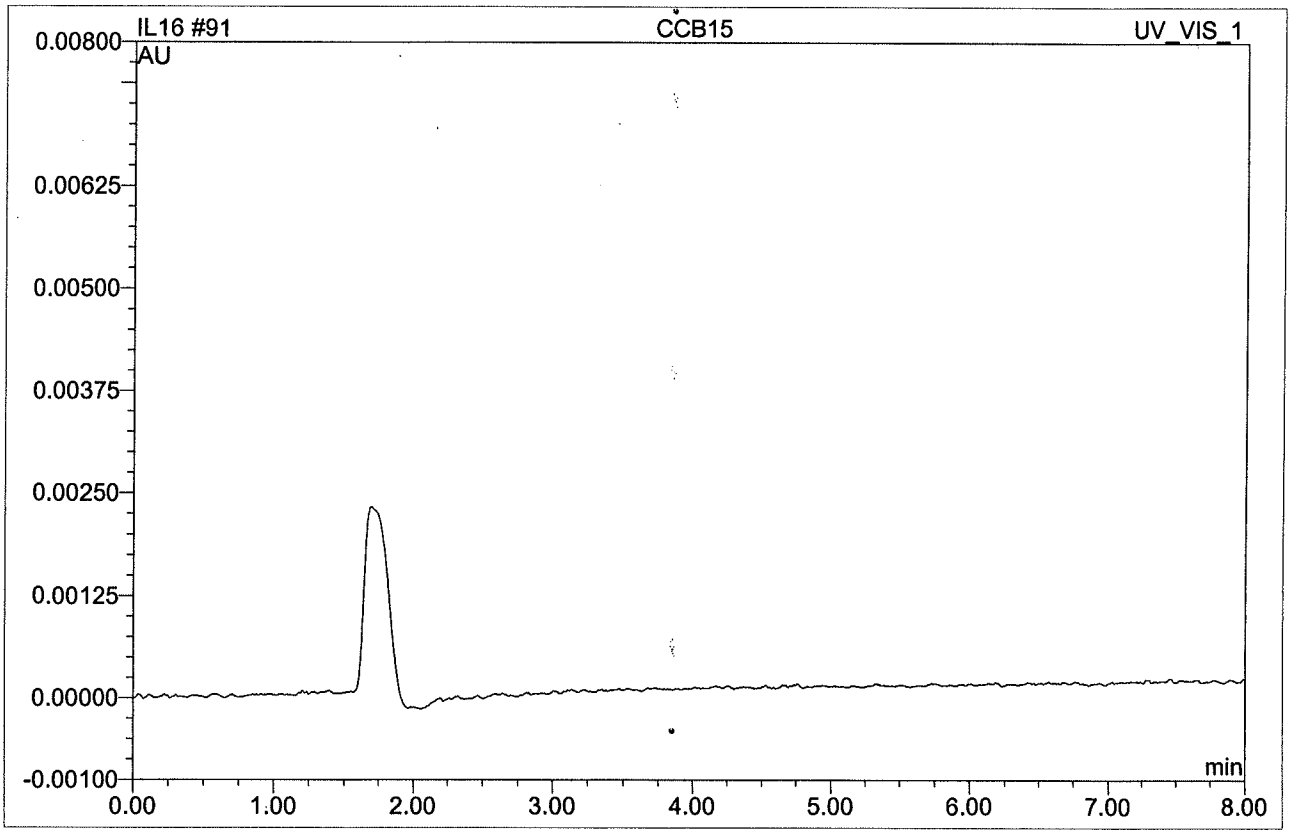
Sample Name:	**CCV15**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 12:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.22	Cr6	0.0014420	0.0002046	100.00	1.972	BMB*
Total:			0.001	0.000	100.00	1.972	

IL16 091 CCB15

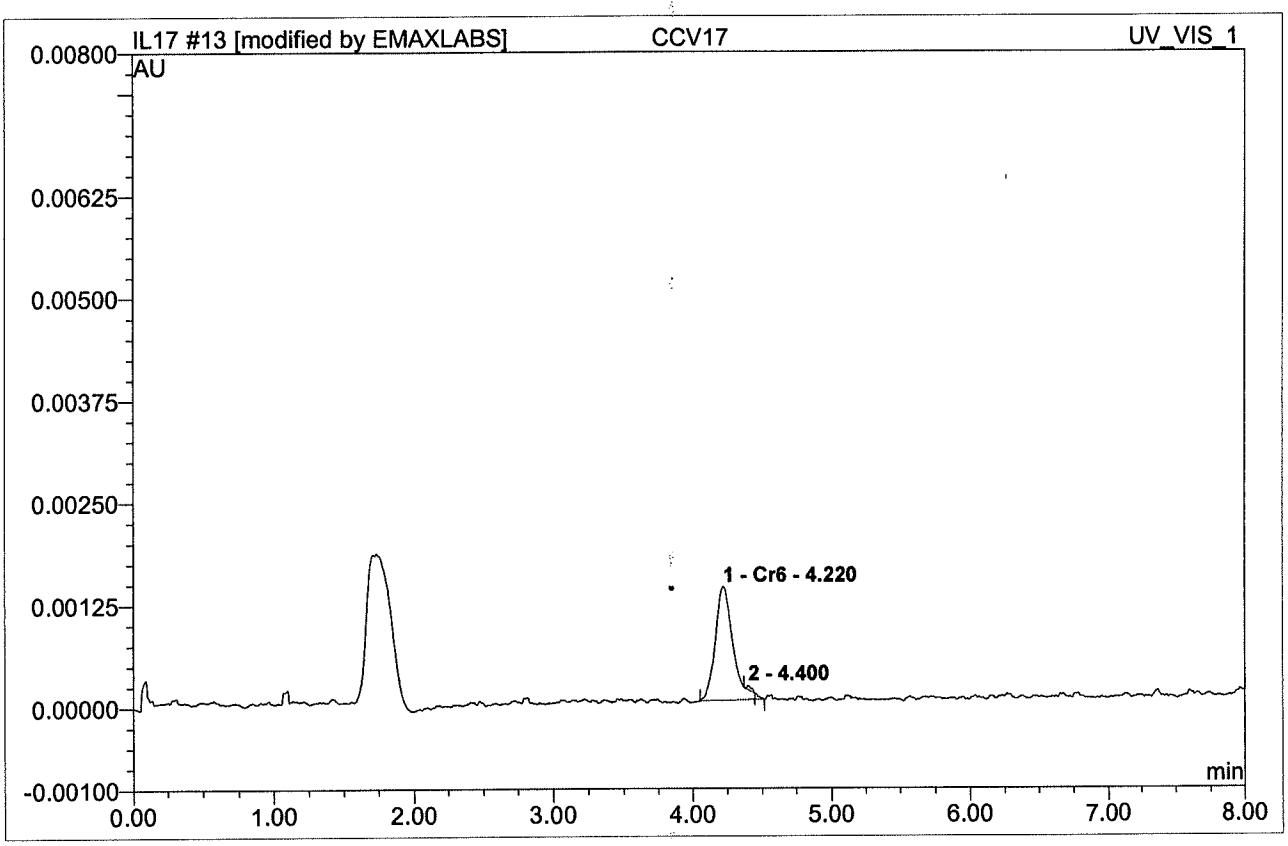
Sample Name:	**CCB15**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 12:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL17 001 CCV17

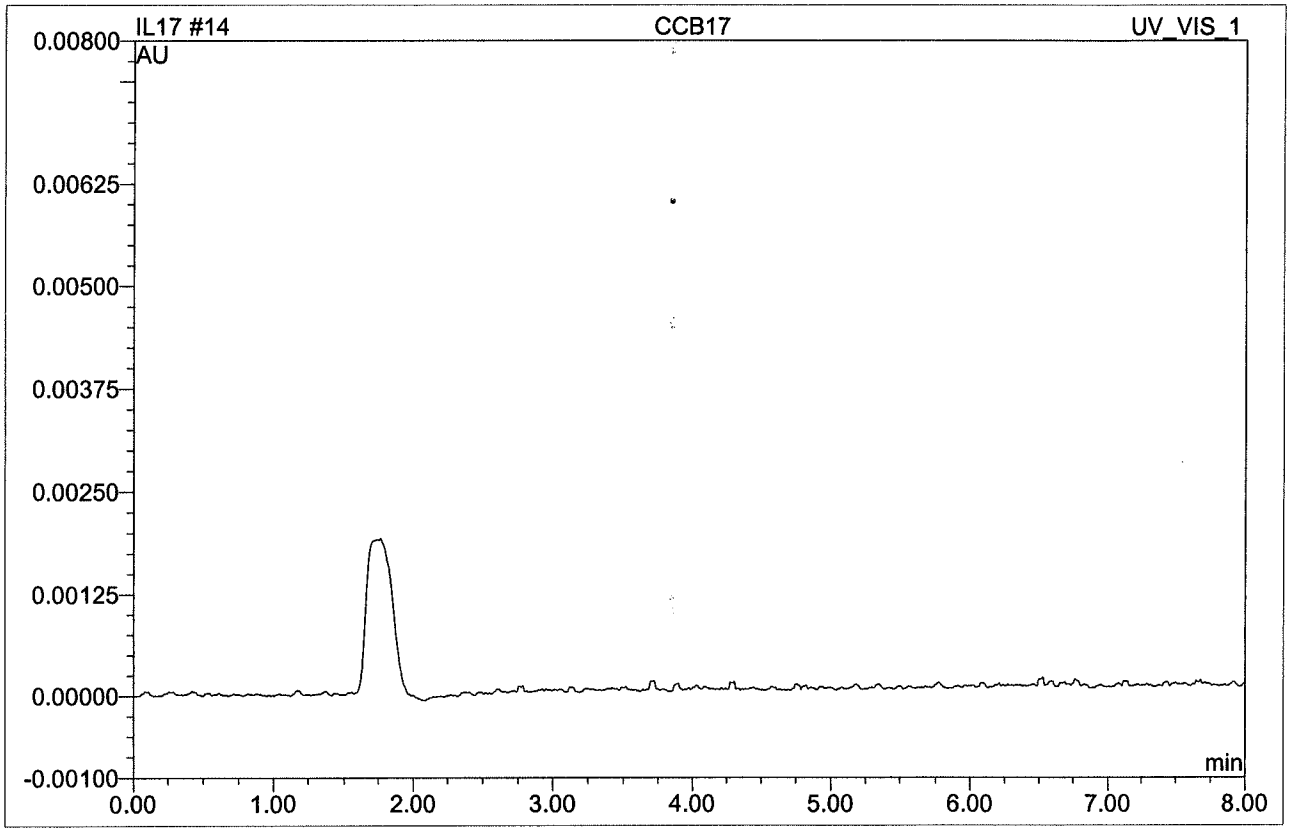
Sample Name:	**CCV17**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 13:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.22	Cr6	0.0013820	0.0002068	99.00	1.994	BMB*
2	4.40	n.a.	0.0000530	0.0000021	1.00	n.a.	Rd*
Total:			0.001	0.000	100.00	1.994	

IL17 002 CCB17

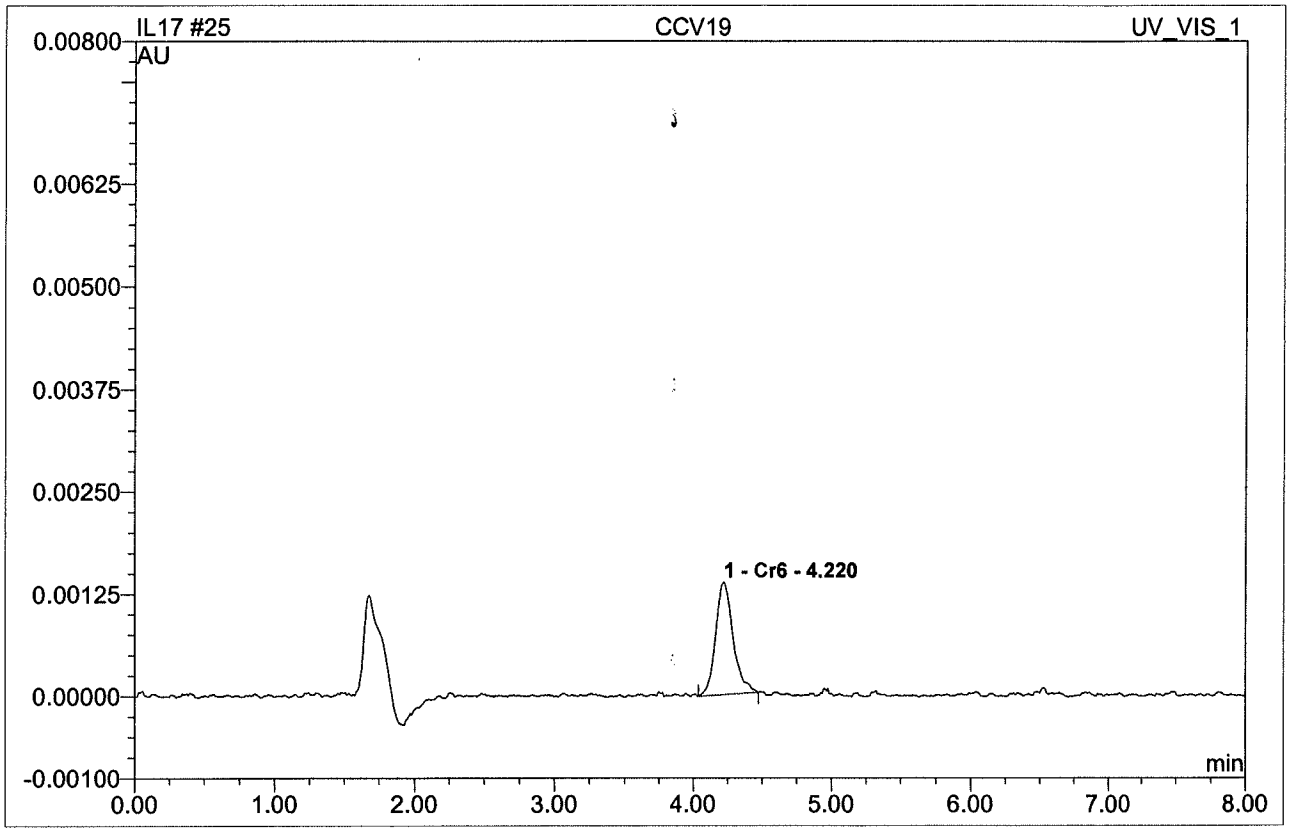
Sample Name:	**CCB17**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 13:23**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL17 013 CCV19

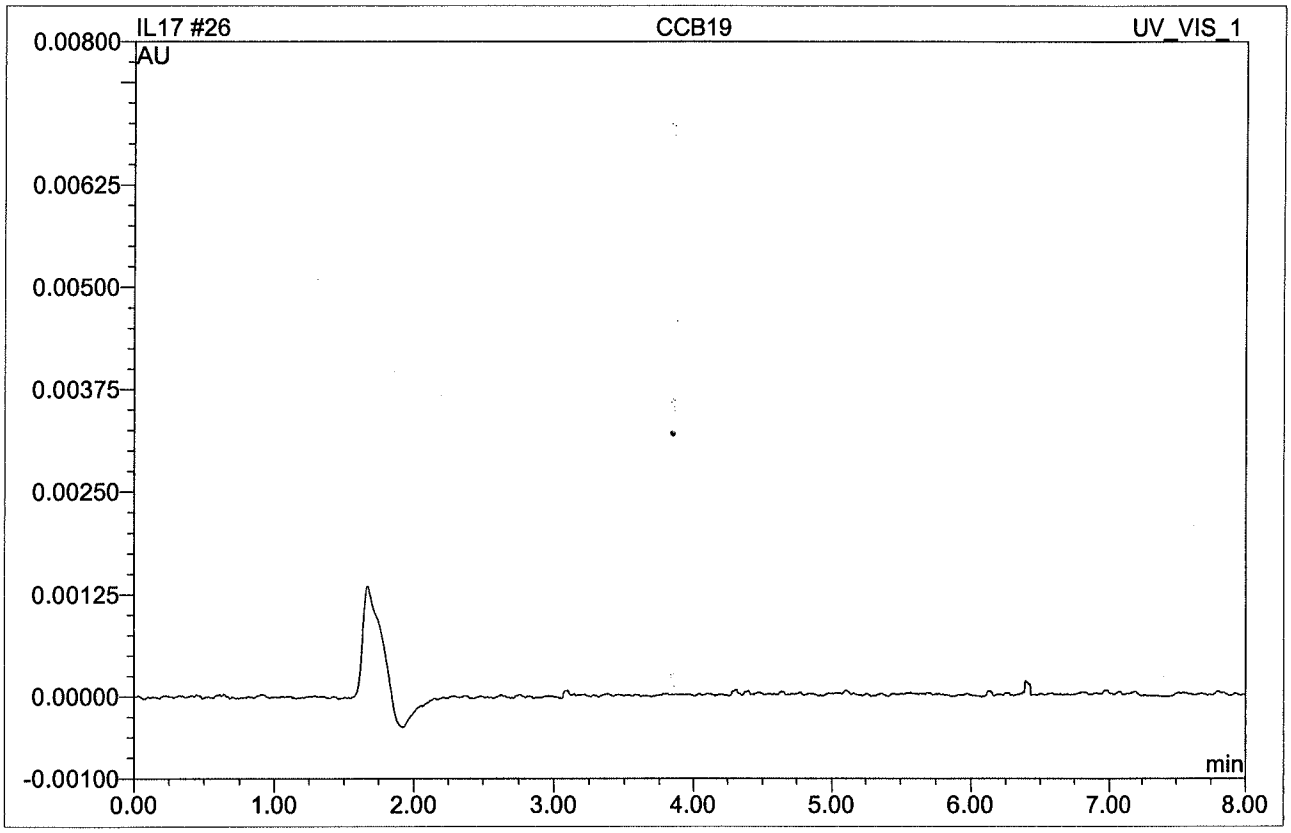
Sample Name:	**CCV19**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 16:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.22	Cr6	0.0013710	0.0002030	100.00	1.957	BMB
Total:			0.001	0.000	100.00	1.957	

IL17 014 CCB19

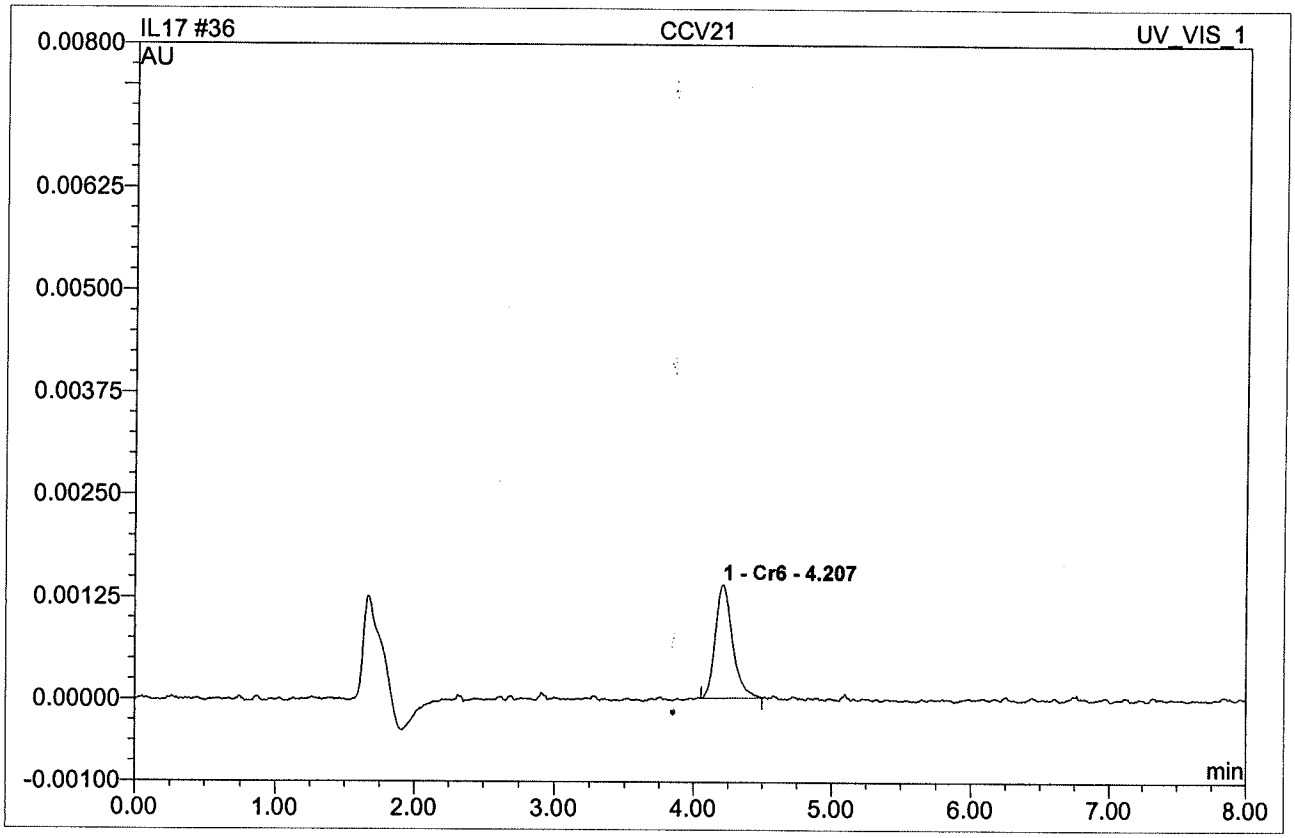
Sample Name:	**CCB19**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 17:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IL17 024 CCV21

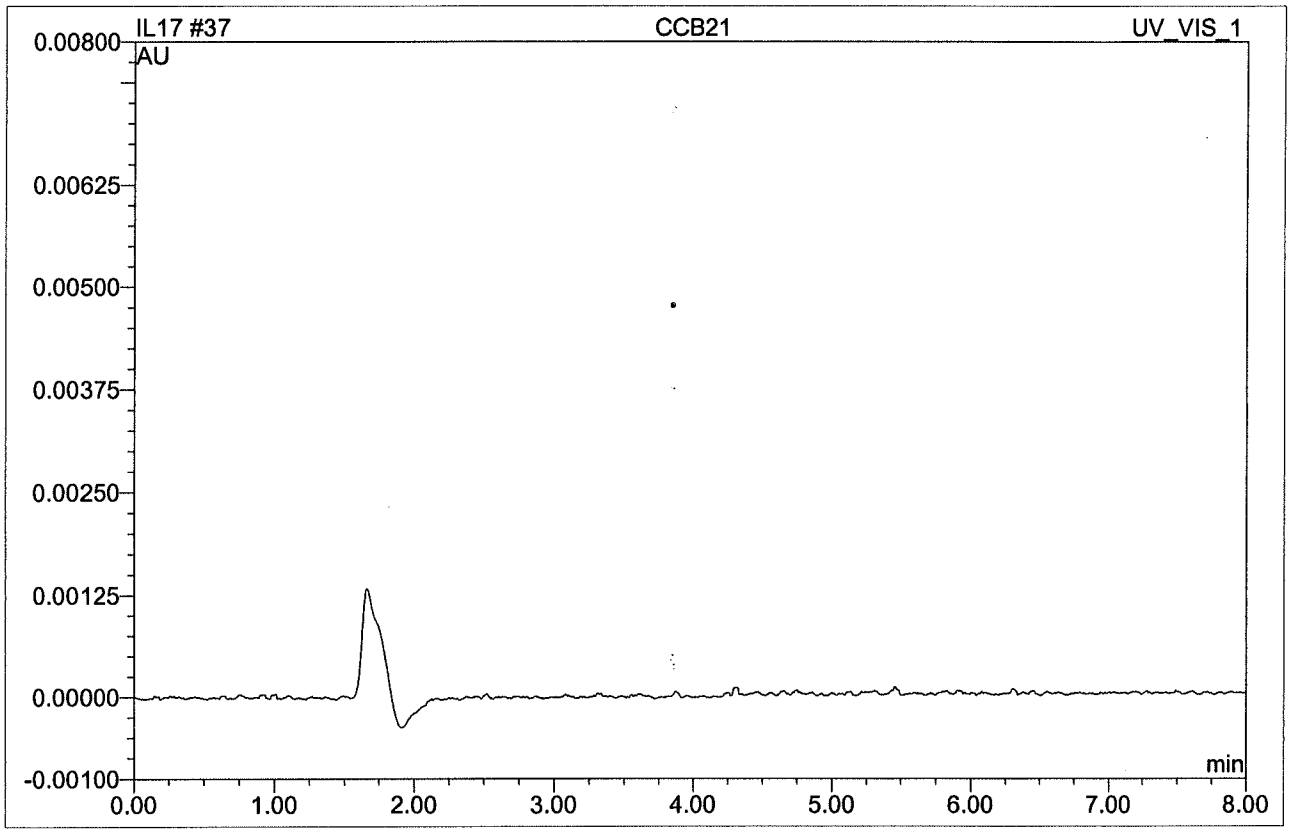
Sample Name:	**CCV21**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 18:53**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.21	Cr6	0.0013830	0.0002015	100.00	1.943	BMB
Total:			0.001	0.000	100.00	1.943	

IL17 025 CCB21

Sample Name:	**CCB21**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59L16**	*Dilution Factor:*	**1**
Recording Time:	**12/17/2021 19:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

ANALYTICAL LOG(S)

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Post Column Solution: **Final Volume:** 1,000 mL

1,5 Diphenylcarbohydrazide : 0.5 g SW6A-01-01-08

MeOH : 100 mL SW1A-011-01-02

H_2SO_4 : 28 mL ↓ -009 -17-07

Eluent: **Final Volume:** 2,000 mL

$(NH_4)_2SO_4$: 66 g SW6A-01-01-10

NH_4OH : 13 mL SW9A-04-066

☐ **pH Adjusted Water ID #:**
(range 9.3-9.5)

☑ **Buffer** (10 mL → 100 mL) SP2-05-06-01

Reagent Water ID #: RW1-21-005

ICAL Linear Range (ppb): S_0 - 0.00
S_1 - 0.20
S_2 - 0.50
S_3 - 1.00
S_4 - 2.00
S_5 - 5.00
S_6 - 7.50
S_7 - 10.0
ICV - 7.00

Low level CCV (0.20 ppb): SW6B-004-10-03

HCL019W: L159, L159C, L156, L159A, L159B

post-spike 2ppb : 0.100 mL of std. to final volume 5 mL of sample.

Column: Dionex IonPac AS7 (4x250mm) Serial: 19010324B

Guard Column: Dionex IonPac NG1 (4x35mm) Serial: 19061218

Wave length: 530 nm

Flow Rate: 1.00 mL/min

Injection: 0.250 mL

Book #: A59-054

Instrument No.: 59

Pipette ID: SW9A-04-017
A42762405
SW9A-04-052

Balance ID: 10601202

Analytical Sequence: IL16

Method File: IC59L16

Analytical Batch: HCL019W

SOP #	Rev. #
☑ EMAX-218.6	7
☑ EMAX-7199	7
☐ EMAX-	

STANDARDS ID	
ICAL	SW6B-004-10-01
ICV	↓ -02
CCV	SW6B-004-10-04

LCS/MS STANDARDS

	Standard ID	Conc	Spike Amt	Final Vol
LCS	SW6B-004-09-08	100 ppb	0.100 mL	5 mL
MS	↓	↓	0.050 mL	↓

ELECTRONIC DATA ARCHIVAL

Location	Date
☐ CHROMELEON	
☐	

5 mL vial kit Lot #: 038008 Snap-Seal Container

0.45 µm filter lot #: 210890103 4 oz: 1328163

0.2 µm filter lot #: 1.5 oz: 13621005

Analyzed By: AS

Date: 12/16/21

Sequence: IL16
Operator: EMAXLABS
Printed: 12/19/2021 3:16:00 PM

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 91

FINAL

Created: 12/16/2021 3:59:11 PM by EMAXLABS
Last Update: 12/19/2021 3:06:53 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
1	IL16	001	IB	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:00:10 PM	1.0000	BUFFER
2	IL16	002	S-0	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:10:34 PM	1.0000	
3	IL16	003	S-1	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:31:27 PM	1.0000	0.2 PPB
4	IL16	004	S-2	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:41:51 PM	1.0000	0.5 PPB
5	IL16	005	S-3	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:52:15 PM	1.0000	1.0 PPB
6	IL16	006	S-4	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:02:39 PM	1.0000	2.0 PPB
7	IL16	007	S-5	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:13:03 PM	1.0000	5.0 PPB
8	IL16	008	S-6	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:23:27 PM	1.0000	7.5 PPB
9	IL16	009	S-7	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:33:51 PM	1.0000	10 PPB
10	IL16	010	ICV	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:44:15 PM	1.0000	3.0 PPB
11	IL16	011	ICB	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:54:39 PM	1.0000	
12	IL16	012	LOW CCV	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 6:05:04 PM	1.0000	0.2 PPB
13	IL16	013	CCV1	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 6:18:15 PM	1.0000	
14	IL16	014	CCB1	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 6:28:39 PM	1.0000	
15	IL16	015	HCL019WB	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 6:39:03 PM	1.0000	
16	IL16	016	HCL019WL	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 6:49:27 PM	1.0000	
17	IL16	017	HCL019WC	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 6:59:51 PM	1.0000	
18	IL16	018	L159-01	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 7:10:16 PM	1.0000	
19	IL16	019	L159-01M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 7:20:40 PM	1.0000	
20	IL16	020	L159-01S	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 7:31:04 PM	1.0000	
21	IL16	021	L159-03	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 7:41:29 PM	1.0000	
22	IL16	022	L159-03M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 7:56:20 PM	1.0000	
23	IL16	023	L159-04	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 8:06:44 PM	1.0000	
24	IL16	024	L159-04M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 8:17:09 PM	1.0000	
25	IL16	025	CCV3	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 8:27:33 PM	1.0000	
26	IL16	026	CCB3	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 8:37:57 PM	1.0000	
27	IL16	027	L159-23	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 8:48:21 PM	1.0000	

Chromeleon © Dionex Corporation, Version 6.70 SP2a Build 1871

Sequence: IL16
Operator: EMAXLABS
Printed: 12/19/2021 3:16:00 PM

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 91

FINAL

Created: 12/16/2021 3:59:11 PM by EMAXLABS
Last Update: 12/19/2021 3:06:53 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
28	IL16	028	L159-23M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 8:58:45 PM	1.0000	
29	IL16	029	L159-23S	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 9:09:09 PM	1.0000	
30	IL16	030	L159-14	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 9:19:33 PM	1.0000	
31	IL16	031	L159-14M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 9:29:57 PM	1.0000	
32	IL16	032	L159-16	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 9:40:22 PM	1.0000	
33	IL16	033	L159-16M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 9:50:46 PM	1.0000	
34	IL16	034	L159-18	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 10:01:10 PM	1.0000	
35	IL16	035	L159-18M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 10:11:34 PM	1.0000	
36	IL16	036	L156-01	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 10:21:58 PM	1.0000	OVER RANGE
37	IL16	037	CCV5	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 10:32:23 PM	1.0000	
38	IL16	038	CCB5	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 10:42:47 PM	1.0000	
39	IL16	039	L159-20	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 10:53:11 PM	1.0000	
40	IL16	040	L159-20M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 11:03:35 PM	1.0000	
41	IL16	041	L159-21	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 11:13:59 PM	1.0000	
42	IL16	042	L159-21M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 11:24:24 PM	1.0000	
43	IL16	043	L159-22	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 11:34:48 PM	1.0000	
44	IL16	044	L159-22M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 11:45:12 PM	1.0000	
45	IL16	045	L159-02	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 11:55:36 PM	1.0000	
46	IL16	046	L159-02M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:06:01 AM	1.0000	
47	IL16	047	L159-09	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:16:25 AM	1.0000	
48	IL16	048	L159-09M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:26:49 AM	1.0000	
49	IL16	049	CCV7	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:37:13 AM	1.0000	
50	IL16	050	CCB7	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:47:37 AM	1.0000	
51	IL16	051	L159-13	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:58:01 AM	1.0000	
52	IL16	052	L159-13M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 1:08:26 AM	1.0000	
53	IL16	053	L159-15	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 1:18:50 AM	1.0000	
54	IL16	054	L159-15M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 1:29:14 AM	1.0000	

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Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 91

FINAL

Created: 12/16/2021 3:59:11 PM by EMAXLABS
Last Update: 12/19/2021 3:06:53 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
55	IL16	055	L159-17	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 1:39:39 AM	1.0000	
56	IL16	056	L159-17M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 1:50:03 AM	1.0000	
57	IL16	057	L159-19	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 2:00:27 AM	1.0000	
58	IL16	058	L159-19M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 2:10:51 AM	1.0000	
59	IL16	059	L159-24	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 2:21:16 AM	1.0000	
60	IL16	060	L159-24M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 2:31:40 AM	1.0000	
61	IL16	061	CCV9	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 2:42:04 AM	1.0000	
62	IL16	062	CCB9	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 2:52:28 AM	1.0000	
63	IL16	063	L159-23I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:02:52 AM	5.0000	1mLto5mL
64	IL16	064	L159-23M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:13:16 AM	5.0000	1mLto5mL
65	IL16	065	L159-23S	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:23:40 AM	5.0000	1mLto5mL
66	IL16	066	L159-23J	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:34:04 AM	10.0000	0.5mLto5mL
67	IL16	067	L159-23M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:44:28 AM	10.0000	0.5mLto5mL
68	IL16	068	L159-23S	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:54:53 AM	10.0000	0.5mLto5mL
69	IL16	069	CCV11	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 8:19:10 AM	1.0000	
70	IL16	070	CCB11	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 8:29:34 AM	1.0000	
71	IL16	071	L159-14I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 8:39:58 AM	5.0000	1mLto5mL
72	IL16	072	L159-14M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 8:50:22 AM	5.0000	1mLto5mL
73	IL16	073	L159-16I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 9:00:46 AM	5.0000	1mLto5mL
74	IL16	074	L159-16M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 9:11:11 AM	5.0000	1mLto5mL
75	IL16	075	L159-18I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 9:21:35 AM	5.0000	1mLto5mL
76	IL16	076	L159-18M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 9:31:59 AM	5.0000	1mLto5mL
77	IL16	077	L159-21I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 9:52:08 AM	2.0000	2.5mLto5mL
78	IL16	078	L159-21M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 10:02:32 AM	2.0000	2.5mLto5mL
79	IL16	079	L159-22I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 10:14:18 AM	2.0000	2.5mLto5mL
80	IL16	080	L159-22M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 10:24:42 AM	2.0000	2.5mLto5mL
81	IL16	081	CCV13	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 10:35:06 AM	1.0000	

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Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 91

FINAL

Created: 12/16/2021 3:59:11 PM by EMAXLABS
Last Update: 12/19/2021 3:06:53 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
82	IL16	082	CCB13	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 10:45:31 AM	1.0000	
83	IL16	083	L156-01I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 10:59:58 AM	5.0000	1mLto5mL
84	IL16	084	L159-11	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 11:10:22 AM	1.0000	
85	IL16	085	L159-11M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 11:20:46 AM	1.0000	
86	IL16	086	L159-12	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 11:31:10 AM	1.0000	
87	IL16	087	L159-12M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 11:52:51 AM	1.0000	
88	IL16	088	L159-11I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:03:16 PM	5.0000	1mLto5mL
89	IL16	089	L159-11M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:13:40 PM	5.0000	1mLto5mL
90	IL16	090	CCV15	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:24:04 PM	1.0000	
91	IL16	091	CCB15	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 12:34:28 PM	1.0000	

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EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
HEXAVALENT CHROMIUM IC

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Post Column Solution: **Final Volume:** 1,000 mL

1,5 Diphenylcarbohydrazide : 0.5 g SW6A-01-01-08

MeOH : 100 mL SW1A-011-01-02

H_2SO_4 : 28 mL ↓ -009-17-07

Eluent: **Final Volume:** 2,000 mL

$(NH_4)_2SO_4$: 66 g SW6A-01-01-10

NH_4OH : 13 mL SW9A-04-066

☐ **pH Adjusted Water ID #:**
(range 9.3-9.5)

☑ **Buffer** (10 mL → 100 mL) SP2-05-06-01

Reagent Water ID #: RW1-21-005

HCL021W: L159B, L159A

post-spike 2ppb: 0.100mL of std to final volume 5mL of sample.

QC Buffer: SP2-05-06-04

Book #:	A59-054
Instrument No.:	59
Pipette ID:	SW9A-04-017
	A42762405
	SW9A-04-052
Balance ID:	10601202
Analytical Sequence:	IL17
Method File:	IC59L16
Analytical Batch:	HCL021W

SOP #	Rev. #
☑ EMAX-218.6	7
☐ EMAX-7199	7
☐ EMAX-	

STANDARDS ID	
ICAL	-
ICV	-
CCV	SW6B-004-10-05

LCS/MS STANDARDS

	Standard ID	Conc	Spike Amt	Final Vol
LCS	SW6B-004-09-08	100ppb	0.100mL	5mL
MS	↓	↓	0.050mL	↓

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ CHROMELEON	
☐	

5 mL vial kit Lot #: 038008 Snap-Seal Container

0.45 µm filter lot #: 210890103 4 oz: 1328163

0.2 µm filter lot #: 1.5 oz: 13621005

Analyzed By: AS

Date: 12/17/21

Sequence: IL17
Operator: EMAXLABS

Printed: 12/19/2021 3:56:13 PM

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 37

FINAL

Created: 12/17/2021 1:12:10 PM by EMAXLABS
Last Update: 12/19/2021 3:39:41 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
1	IL17		IB	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:00:10 PM	1.0000	BUFFER
2	IL17		S-0	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:10:34 PM	1.0000	
3	IL17		S-1	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:31:27 PM	1.0000	0.2 PPB
4	IL17		S-2	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:41:51 PM	1.0000	0.5 PPB
5	IL17		S-3	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 4:52:15 PM	1.0000	1.0 PPB
6	IL17		S-4	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:02:39 PM	1.0000	2.0 PPB
7	IL17		S-5	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:13:03 PM	1.0000	5.0 PPB
8	IL17		S-6	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:23:27 PM	1.0000	7.5 PPB
9	IL17		S-7	Standard	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:33:51 PM	1.0000	10 PPB
10	IL17		ICV	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:44:15 PM	1.0000	3.0 PPB
11	IL17		ICB	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 5:54:39 PM	1.0000	
12	IL17		LOW CCV	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/16/2021 6:05:04 PM	1.0000	0.2 PPB
13	IL17	001	CCV17	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 1:12:49 PM	1.0000	
14	IL17	002	CCB17	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 1:23:13 PM	1.0000	
15	IL17	003	HCL021WB	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 1:33:37 PM	1.0000	
16	IL17	004	HCL021WL	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 1:44:01 PM	1.0000	
17	IL17	005	HCL021WC	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:29:55 PM	1.0000	
18	IL17	006	L159-10	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:43:19 PM	1.0000	
19	IL17	007	L159-10M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 3:53:43 PM	1.0000	
20	IL17	008	L159-05	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 4:04:07 PM	1.0000	
21	IL17	009	L159-05M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 4:15:08 PM	1.0000	
22	IL17	010	L159-05S	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 4:25:33 PM	1.0000	
23	IL17	011	L159-10I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 4:35:57 PM	5.0000	1mLto5mL
24	IL17	012	L159-10M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 4:46:21 PM	5.0000	1mLto5mL
25	IL17	013	CCV19	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 4:56:45 PM	1.0000	
26	IL17	014	CCB19	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 5:07:09 PM	1.0000	
27	IL17	015	L159-06	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 5:17:33 PM	1.0000	

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Sequence: IL17
Operator: EMAXLABS

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2021
Timebase: DX600
#Samples: 37

FINAL

Created: 12/17/2021 1:12:10 PM by EMAXLABS
Last Update: 12/19/2021 3:39:41 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
28	IL17	016	L159-06M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 5:27:58 PM	1.0000	
29	IL17	017	L159-07	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 5:38:22 PM	1.0000	
30	IL17	018	L159-07M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 5:49:22 PM	1.0000	
31	IL17	019	L159-08	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 5:59:46 PM	1.0000	
32	IL17	020	L159-08M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 6:10:10 PM	1.0000	
33	IL17	021	L159-08I	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 6:22:08 PM	5.0000	1mLto5mL
34	IL17	022	L159-08M	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 6:32:33 PM	5.0000	1mLto5mL
35	IL17	023	QC BUFFER	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 6:42:57 PM	1.0000	SP2-05-06-04
36	IL17	024	CCV21	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 6:53:21 PM	1.0000	
37	IL17	025	CCB21	Unknown	250.0	Cr6 Program	IC59L16	Finished	12/17/2021 7:03:45 PM	1.0000	

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RETENTION TIME WINDOW

RETENTION TIME WINDOW

METHOD 218.6/7199

Lab Name:	EMAX	**METHOD:**	EMAX-218.6/7199
Instrument ID:	DX500IC59	**IC COLUMN:**	AS7/AG7 / AS7/NG1
		COLUMN SIZE:	4x250mm

Compound	Ical Mean RT	from	to	Retention Time Window
CHROMIUM VI	**4.21**	4.10	4.32	**0.108**

IC59L16

SAMPLE PRESERVATION LOG(S)

EMAX LABORATORIES, INC.

pH ADJUSTMENT/SAMPLE PRESERVATION LOG FOR HEXAVALENT CHROMIUM

SOP ☑ EMAX-218.6 Rev. 7 ☐ EMAX-7199 Rev. 7

Matrix: W Start Date: 12/13/21 Time: 19:30 End Date: 12/15/21 Time: 19:40 Book #: PHC-026

Sample Prep ID	Lab Sample ID	Initial pH	Final pH	Notes
01	L156-01	8.50	9.28	0.040mL→40mL; Cr
02	L159-01	9.50	9.50	no adjustment needed; Cr
03	-02	9.50	9.50	
04	-03	9.49	9.49	
05	-04	9.50	9.50	
06	-05	9.50	9.50	
07	-06	9.49	9.49	
08	-07	9.50	9.50	
09	-08	9.48	9.48	
10	-09	9.50	9.50	
11	-10	9.46	9.46	
12	-11	9.38	9.38	
13	-12	9.39	9.39	
14	-13	9.50	9.50	
15	-14	9.47	9.47	
16	-15	9.50	9.50	
17	-16	9.48	9.48	
18	-17	9.50	9.50	
19	-18	9.49	9.49	
20	-19	9.49	9.49	
21	-20	9.50	9.50	
22	-21	9.46	9.46	
23	-22	9.50	9.50	
24	-23	9.49	9.49	
25	-23M	9.50	9.50	
26	-23S	9.50	9.50	
27	-24	9.48	9.48	

Standards	ID	pH
Buffer 7	SW1-02-07-30	7.00
Buffer 10	↓ -08-01	10.01
Check pH Buffer (8)		
Check pH Buffer 7.99	SW1-02-08-16	7.95
pH meter	F7	

Reagent	Standard ID #
NaOH	SWR1-03-04-02
$(NH_4)_2SO_4/NH_4OH$	
HNO_3	

Legend:

Color	Texture	Clarity	Artifacts
Bu = Blue Bl = Black	Cs = Coarse	Cr = Clear	Rk = Rocks
Bn = Brown Gn = Green	Md = Medium	Cy = Cloudy	Sl = Shale
Og = Orange Rd = Red	Fn = Fine	Td = Turbid	Vg = Vegetation
Yw = Yellow			

☑ Samples were received with preservation

Comments:

Prepared By: AS

Standard Added By: AS

Checked By: AS

AS 12/15/21

STANDARD LOG(S)

EMAX LABORATORIES, INC.

STANDARDS LOG FOR HEXAVALENT CHROMIUM

Method HEXAVALENT CHROMIUM **Book #:** SW6B-004

Standard ID	Name	Source	Conc. (mg/L)	Aliquot (ml)	Solvent ID	Final Vol (ml)	Final Conc. (mg/L)	Preparation Date	Expiration Date	Prepared By	Comments	Micropipette ID
SW6B-004-10-01	Cr6	SW6B-004-09-07	100ppb	0.20mL	SP2-05-06-01	100mL	0.20ppb	12/16/21	12/17/21	AS	ICAL(Buffer)	A
SW6B-004-10-	↓	↓	↓	0.50	↓	↓	0.50	↓	↓	↓	↓	B
SW6B-004-10-				1.00			1.00					B
SW6B-004-10-				2.00			2.00					B
SW6B-004-10-				5.00			5.00					C
SW6B-004-10-				7.50			7.50					C
SW6B-004-10-				10.0			10.0					C
SW6B-004-10-02	Cr6	SW6B-004-09-08	100ppb	3.00mL	SP2-05-06-01	100mL	3.00ppb	12/16/21	12/17/21	AS	ICV(buffer)	C
SW6B-004-10-03	Cr6	SW6B-004-09-07	100ppb	0.20mL	SP2-05-06-01	100mL	0.20ppb	12/16/21	12/17/21	AS	Low CCV(buffer)	A
SW6B-004-10-04	Cr6	SW6B-004-09-07	100ppb	2.00mL	SP2-05-06-01	100mL	2.00ppb	12/16/21	12/17/21	AS	CCV(Buffer)	B
SW6B-004-10-05	Cr6	SW6B-004-09-07	100ppb	2.00mL	SP2-05-06-01	100mL	2.00ppb	12/17/21	12/18/21	AS	CCV(Buffer)	B
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												

Micropipette ID Legend: **A.** SW9A-04-052 **B.** A42762405 **C.** SW9A-04-017 **D.** SI1A-04-4 **E.** SW3-01-33 **F.** 39380025

Balance ID: _____

STANDARD LOGS

EMAX LABORATORIES, INC.

STANDARDS LOG FOR HEXAVALENT CHROMIUM

Method HEXAVALENT CHROMIUM **Book #:** SW6B-004

Standard ID	Name	Source	Conc. (mg/L)	Aliquot (ml)	Solvent ID	Final Vol (ml)	Final Conc. (mg/L)	Preparation Date	Expiration Date	Prepared By	Comments	Micropipette ID
SW6B-004-10-01	Cr6	SW6B-004-09-07	100ppb	0.20mL	SP2-05-06-01	100mL	0.20ppb	12/16/21	12/17/21	AS	ICAL(Buffer)	A
SW6B-004-10-				0.50			0.50					B
SW6B-004-10-				1.00			1.00					B
SW6B-004-10-				2.00			2.00					B
SW6B-004-10-				5.00			5.00					C
SW6B-004-10-				7.50			7.50					C
SW6B-004-10-				10.0			10.0					C
SW6B-004-10-02	Cr6	SW6B-004-09-08	100ppb	3.00mL	SP2-05-06-01	100mL	3.00ppb	12/16/21	12/17/21	AS	ICV(buffer)	C
SW6B-004-10-03	Cr6	SW6B-004-09-07	100ppb	0.20mL	SP2-05-06-01	100mL	0.20ppb	12/16/21	12/17/21	AS	Low CCV(buffer)	A
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												
SW6B-004-10-												

Micropipette ID Legend: **A.** SW9A-04-052 **B.** A42762405 **C.** SW9A-04-017 **D.** SI1A-04-4 **E.** SW3-01-33 **F.** 39380025

Balance ID: _____

EMAX LABORATORIES, INC.

STANDARDS LOG FOR HEXAVALENT CHROMIUM

Method HEXAVALENT CHROMIUM

Book #: SW6B-004

Standard ID	Name	Source	Conc. (mg/L)	Aliquot (ml)	Solvent ID	Final Vol (ml)	Final Conc. (mg/L)	Preparation Date	Expiration Date	Prepared By	Comments	Micropipette ID
SW6B-004-09-01	Cr6	SW6B-004-05-04	100ppb	2.0mL	SP2-05-05-04	100mL	2.0ppb	11/18/21	11/19/21	YC	CCV	B
SW6B-004-09-02	Cr6	SW6B-004-08-08	100 ppb	0.20 mL	SP2-05-04-02	100 mL	0.20ppb	11/19/21	11/20/21	AS	ICAL (buffer)	A
SW6B-004-09-				0.50			0.50					B
SW6B-004-09-				1.00			1.00					B
SW6B-004-09-				2.00			2.00					B
SW6B-004-09-				5.00			5.00					C
SW6B-004-09-				7.50			7.50					C
SW6B-004-09-				10.0			10.0					C
SW6B-004-09-03	Cr6	SW6B-004-08-09	100ppb	3.00mL	SP2-05-04-02	100mL	3.00ppb	11/19/21	11/20/21	AS	ICV (buffer)	C
SW6B-004-09-04	Cr6	SW6B-004-08-08	100ppb	2.00mL	SP2-05-04-02	100mL	2.00ppb	11/19/21	11/20/21	AS	CCV (buffer)	B
SW6B-004-09-05	Cr6	SW6B-004-08-08	100ppb	2.00mL	SP2-05-04-02	100mL	2.00ppb	11/22/21	11/23/21	AS	CCV (buffer)	B
SW6B-004-09-06	Cr6	SW6B-004-08-08	100ppb	2.00mL	SP2-05-04-02	100mL	2.00ppb	11/24/21	11/25/21	AS	CCV (buffer)	B
SW6B-004-09-07	Cr6	SW6B-004-06-26	10 ppm	1.00mL	SP2-05-05-04	100mL	100ppb	12/2/21	1/1/22	AS	1° working std.	B
SW6B-004-09-08	Cr6	SW6B-004-06-27	10ppm	1.00mL	SP2-05-05-04	100mL	100ppb	12/2/21	1/1/22	AS	2° working std.	B
SW6B-004-09-09	Cr6	SW6B-004-09-07	100ppb	2.00mL	SP2-05-06-01	100mL	2.00ppb	12/2/21	12/3/21	AS	CCV (buffer)	B
SW6B-004-09-10	Cr6	SW6B-004-04-07	100ppb	2.00mL	SP2-05-05-04	100mL	2.00ppb	12/3/21	12/4/21	YC	CCV	B
SW6B-004-09-11	Cr6	SW6B-004-04-07	100ppb	2.00mL	SP2-05-05-04	100mL	2.00ppb	12/6/21	12/7/21	YC	CCV	B
SW6B-004-09-12	Cr6	SW6B-004-09-07	100ppb	2.00mL	SP2-05-05-04	100mL	2.00ppb	12/7/21	12/8/21	YC	CCV	B
~~SW6B-004-09-13~~	~~Cr6~~	~~SW6B-004-02-07~~	~~100ppb~~	~~2.00mL~~	~~SP2-05-06-01~~	~~100mL~~	~~2.00ppb~~	~~12/9/21~~	~~12/10/21~~	~~YC~~	~~CCV (buffer)~~	~~B~~ YC 12/8/21
SW6B-004-09-13	Cr6	SW6B-004-02-07	100ppb	2.00mL	SP2-05-05-04	100mL	2.00ppb	12/8/21	12/9/21	YC	CCV	B
SW6B-004-09-14	Cr6	SW6B-004-02-07	100ppb	2.00mL	SP2-05-06-01	100mL	2.00ppb	12/9/21	12/10/21	YC	CCV (buffer)	B
SW6B-004-09-15	Cr6	SW6B-004-09-07	100 ppb	2.00mL	SP2-05-06-01	100mL	2.00ppb	12/14/21	12/15/21	AS	CCV (buffer)	B
SW6B-004-09-												
SW6B-004-09-												
SW6B-004-09-												A S 12/16/21

Micropipette ID Legend: **A.** SW9A-04-052 **B.** A42762405 **C.** SW9A-04-017 **D.** SI1A-04-4 **E.** SW3-01-33 **F.** 39380025

Balance ID:

EMAX LABORATORIES, INC.

STANDARDS LOG FOR HEXAVALENT CHROMIUM

Method HEXAVALENT CHROMIUM **Book #:** SW6B-004

Standard ID	Name	Source	Conc. (mg/L)	Aliquot (ml)	Solvent ID	Final Vol (ml)	Final Conc. (mg/L)	Preparation Date	Expiration Date	Prepared By	Comments	Micropipette ID
SW6B-004-06-26	Cr6	SW6A-01-02-01	1000ppm	1.00mL	SP2-05-03-03	100mL	10ppm	9/27/21	3/27/22	YC	1° Intermediate Std.	B
SW6B-004-06-27	Cr6	SW6A-01-01-05	1000ppm	1.00mL	SP2-05-03-03	100mL	10ppm	9/27/21	11/24/22	YC	2° Intermediate Std.	B
SW6B-004-06-28	Cr6	SW6B-004-06-26	10ppm	1.00mL	SP2-05-03-03	100mL	100ppb	9/27/21	10/26/21	YC	1° working std.	B
SW6B-004-06-29	Cr6	SW6B-004-06-27	10ppm	1.00mL	SP2-05-03-03	100mL	100ppb	9/27/21	10/26/21	YC	2° working Std.	B
SW6B-004-06-30	Cr6	SW6B-004-06-28	100ppb	0.200mL	SP2-05-02-04	100mL	0.20ppb	9/27/21	9/28/21	YC	ICAL (Buffer)	A
SW6B-004-06-				0.50			0.50					B
SW6B-004-06-				1.00			1.00					B
SW6B-004-06-				2.00			2.00					B
SW6B-004-06-				5.00			5.00					C
SW6B-004-06-				7.50			7.50					C
SW6B-004-06-				10.0			10.0					C
SW6B-004-06-31	Cr6	SW6B-004-06-29	100ppb	3.00mL	SP2-05-02-04	100mL	3.00ppb	9/27/21	9/28/21	YC	ICV	C
SW6B-004-06-32	Cr6	SW6B-004-06-28	100ppb	2.00mL	SP2-05-02-04	100mL	2.00ppb	9/27/21	9/28/21	YC	CCV (Buffer)	B
SW6B-004-06-33	Cr6	SW6B-004-06-28	100ppb	2.00mL	SP2-05-03-03	100mL	2.00ppb	9/27/21	9/28/21	YC	CCV	B
SW6B-004-06-34	Cr6	SW6B-004-01-12	100ppb	2.00mL	SP2-05-03-03	100mL	2.00ppb	9/28/21	9/29/21	YC	CCV	B
SW6B-004-06-35	Cr6	SW6B-004-04-12	100ppb	2.00mL	SP2-05-02-04	100mL	2.00ppb	9/29/21	9/30/21	YC	CCV (Buffer)	B
SW6B-004-06-36	Cr6	SW6B-004-04-12	100ppb	2.00mL	SP2-05-03-03	100mL	2.00ppb	9/29/21	9/30/21	YC	CCV	B
SW6B-004-06-37	Cr6	SW6B-004-04-12	100ppb	2.00mL	SP2-05-04-01	100mL	2.00ppb	9/30/21	10/1/21	YC	CCV (Buffer)	B
SW6B-004-06-38	Cr6	SW6B-004-04-12	100ppb	2.00mL	SP2-05-04-01	100mL	2.00ppb	10/1/21	10/2/21	JC	CCV (Buffer)	B
~~SW6B-004-06-39~~	~~Cr6~~	~~SW6B-004-04-12~~	~~100ppb~~	~~2.00mL~~	~~SP2-05-03-03~~	~~100mL~~	~~2.00ppb~~	~~10/1/21~~	~~10/9/21~~	YC	CCV	B
SW6B-004-06-												
SW6B-004-06-												
SW6B-004-06-												
SW6B-004-06-												
SW6B-004-06-												

AS 10/8/21

Micropipette ID Legend: **A.** SW9A-04-052 **B.** A42762405 **C.** SW9A-04-017 **D.** SI1A-04-4 **E.** SW3-01-33 **F.** 39380025

Balance ID: _____

EMAX LABORATORIES, INC.

STANDARDS LOG FOR HEXAVALENT CHROMIUM

Book No: SW6A-01

Standard ID	Name	Source	Lot #	Location	Rcvd. on	Rcvd. by	Exp. Date	Comments
SW6A-01-01-01	Hexavalent chromium (1000 ppm) (potassium dichromate)	ERA / Metrohm	380718	FUELS	8/30/19	AS	8/1/20	REAIC1210
SW6A-01-01-02	Hexavalent chromium (1000 ppm)	AccuStandard	21906507I	FUELS	1/9/20	AS	6/12/21	WC-HEX-10X-1 (1x 100mL)
SW6A-01-01-03	Ammonium sulfate	EMD	19G105201	FUELS	1/9/20	AS	1/9/30	AX1385-3 (2x 2.5kg)
SW6A-01-01-04	Sodium carbonate	EMD	18G235213	FUELS	2/4/20	AS	2/4/30	SX0395-1 (2x 500g)
SW6A-01-01-05	Hexavalent Chromium (1000ppm) (Potassium Dichromate)	ERA Metrohm	380120m	FUELS	7/14/20	JC	1/24/22	REAIC1210 moved out 205 12:30 moved into fuilta 13:24
SW6A-01-01-06	Magnesium Chloride, anhydrous, 99%	Alfa Aesar	Y07F034	Weighing room	7/31/20	AS	7/31/30	12315 (1x 1kg)
SW6A-01-01-07	Sodium carbonate, ~~anhydrous~~ anhydrous (As 8/7/20)	EMD	19B275202	FUELS	8/7/20	AS	8/7/30	SX0395-1 (2x 500g)
SW6A-01-01-08	1,5-Diphenylcarbazide	Sigma-Aldrich	MKCL7889	Weighing room	11/17/20	JC	11/17/30	259225-100g (1x100g)
SW6A-01-01-09	Sodium Carbonate	EMD	20I215204	FUELS	2/23/21	AS	2/23/31	SX0395-1 * (2x 500g)
SW6A-01-01-10	Ammonium Sulfate	EMD	20I911O166	FUELS	2/23/21	AS	2/23/31	AX1385-3 moved out 205 7/28/21 12:30 moved into fuilta 7/28/21 13:24 (2x 2.5kg)

* moved out 205 7/28/21 12:30 ; moved into fuilta 7/28/21 13:24

EMAX LABORATORIES, INC.

STANDARDS LOG FOR HEXAVALENT CHROMIUM

Book No: SW6A-01

Standard ID	Name	Source	Lot #	Location	Rcvd. on	Rcvd. by	Exp. Date	Comments
SW6A-01-02-01	Hexavalent Chromium (1000 ug/mL)	AccuStandard	220095057	FUELS	3/3/21	AS	10/15/22	WC-HEX-10X-1 moved out 205 7/28/21 12:30 moved into Fujita 7/28/21 13:24
SW6A-01-02-02								
SW6A-01-02-03								
SW6A-01-02-04								
SW6A-01-02-05								
SW6A-01-02-06								
SW6A-01-02-07								
SW6A-01-02-08								
SW6A-01-02-09								
SW6A-01-02-10								YC 8/12/21

125 Market Street
New Haven, CT 06513
USA

AccuStandard®

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

Wet Chemistry Reference Standard

Catalog No: WC-HEX-10X-1
Description: Hexavalent Chromium (Cr6+) Standard
Element: Hexavalent chromium (Cr_6+)
SRM: Ind. Std.
Lot: 220095057
Matrix: Water
Hazards: *Refer to SDS for complete safety information*



Signal Word: Danger

Date Certified: Sep 15, 2020
Expiration: Oct 15, 2022
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Certified Reference Material

ANAB ACCREDITED AR-1463 ANAB ACCREDITED AT-1339 ILAC-MRA

Component		SRM #	Certified Concentration (µg/mL)
Cr_6+	Hexavalent chromium	Ind. Std.	1000

SW6A-01-02-01 read AS
3/3/21

moved to 205
7/28/21 12:30

moved into Fujita
7/28/21 13:24

The gravimetric uncertainty for this product is ±0.24%. The CRM uncertainty is ±0.60%.
The final solution was checked against an independent standard to verify its concentration.
All glassware used in preparation is Class A.
All weights are traceable through NIST, Test No. 684/289871-17
Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware. Keep bottle tightly capped.

Certified By: Meigan O'Leary
Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO 17034, ISO/IEC 17025 and certified to ISO 9001:2015

QR-ORG/INO-001
Rev. 7/20

AccuStandard

ERA
A Waters Company

SW6A-01-01-05
Rcvd: 7/14/20 JC
Exp: 1/24/22

Metrohm USA Inc.

Toll-free: 866-METROHM
www.metrohmusa.com

Certificate of Analysis

moved out 205
7/28/21 12:30
moved into Fujita
7/28/21 13:24

PRODUCT:	1000 mg/L Hexavalent Chromium
CATALOG NUMBER:	REAIC1210
LOT NUMBER:	380120m
ISSUE DATE:	January 27, 2020
REVISION DATE:	Original
STARTING MATERIAL:	Potassium Dichromate ($K_2Cr_2O_7$)
CERTIFIED CONCENTRATION[1]:	1000 mg/L
UNCERTAINTY[2]:	4.4%
MATRIX:	18 megohm deionized water
DENSITY:	1.0001 ± 0.0005 g/mL at 19.9°C and 753 mm Hg
TRACEABILITY[3]:	98.6%
NIST/SRM:	136f Hexavalent Chromium
VERIFICATION METHOD:	Spectrophotometry
STORAGE:	Store at 20-25°C

1. The **Certified Concentration** is the actual made-to concentration confirmed by ERA analytical verification.

2. The stated **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation of the product and includes uncertainty related to the starting material used and the volumetric and gravimetric measurements made. The method of calculating uncertainty is taken from the ISO Guide to the Expression of Uncertainty in Measurement (current version). The uncertainty applies to the product as supplied and does not take into account any required or optional dilutions and/or preparations the laboratory may perform while using this product.

3. Traceability Recovery = ((% Recovery certified standard)/(% Recovery NIST SRM))*100.

   The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

This standard **expires 1/24/2022**. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

This product is intended to be used as either a calibration standard or a quality control check of the entire analytical process for the analytes/matrix included in the standard.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or email to info@eraqc.com

Certifying Officer: Brian Miller – Product Line Manager

ISO/IEC GUIDE 34:2009
ACCREDITED
REFERENCE MATERIAL PRODUCER
CERTIFICATE NO. 1539.03

ISO/IEC 17025:2005
ACCREDITED
CHEMICAL TESTING LABORATORY
CERTIFICATE NO. 1539.02

SW9A-04-066

VWR® BDH CHEMICALS

Certificate of Analysis

Material Number:	**87003-245** 0500mL HDPE | **87003-246** 4000mL HDPE
Material Description:	Ammonium hydroxide
Grade:	BDH Aristar® Plus
Lot Number:	7119040
Use By:	2022-Apr-18
Date of Certification:	2019-Apr-18
CAS Number:	1336-21-6
Molecular Weight:	17.03
Molecular Formula:	NH_3

SW9A-04-066
Rec'd 5/3/19
AS

Characteristics	Specifications	Measured Values
Assay (NH_3)	20 - 22% w/w	21% w/w
Color	max. 10 APHA	< 10 APHA
Aluminum (Al)	max. 1 ppb	< 0.1 ppb
Antimony (Sb)	max. 0.5 ppb	< 0.1 ppb
Arsenic (As)	max. 1 ppb	< 0.1 ppb
Barium (Ba)	max. 0.1 ppb	< 0.1 ppb
Beryllium (Be)	max. 0.1 ppb	< 0.1 ppb
Bismuth (Bi)	max. 0.1 ppb	< 0.1 ppb
Cadmium (Cd)	max. 0.5 ppb	< 0.1 ppb
Calcium (Ca)	max. 1 ppb	< 0.5 ppb
Cerium (Ce)	max. 0.1 ppb	< 0.1 ppb
Cesium (Cs)	max. 0.1 ppb	< 0.1 ppb
Chromium (Cr)	max. 0.5 ppb	< 0.1 ppb
Cobalt (Co)	max. 0.5 ppb	< 0.1 ppb
Copper (Cu)	max. 0.5 ppb	< 0.5 ppb
Dysprosium (Dy)	max. 0.1 ppb	< 0.1 ppb
Erbium (Er)	max. 0.1 ppb	< 0.1 ppb
Europium (Eu)	max. 0.1 ppb	< 0.1 ppb
Gadolinium (Gd)	max. 0.1 ppb	< 0.1 ppb
Gallium (Ga)	max. 0.1 ppb	< 0.1 ppb
Germanium (Ge)	max. 0.1 ppb	< 0.1 ppb
Gold (Au)	max. 0.5 ppb	< 0.1 ppb
Hafnium (Hf)	Information Only	< 1 ppb
Holmium (Ho)	max. 0.1 ppb	< 0.1 ppb
Indium (In)	max. 0.1 ppb	< 0.1 ppb
Iron (Fe)	max. 1 ppb	< 0.5 ppb
Lanthanum (La)	max. 0.1 ppb	< 0.1 ppb
Lead (Pb)	max. 0.1 ppb	< 0.1 ppb
Lithium (Li)	max. 0.1 ppb	< 0.1 ppb
Lutetium (Lu)	max. 0.1 ppb	< 0.1 ppb
Magnesium (Mg)	max. 1 ppb	< 0.1 ppb
Manganese (Mn)	max. 0.5 ppb	< 0.1 ppb
Mercury (Hg)	max. 0.2 ppb	< 0.2 ppb
Molybdenum (Mo)	max. 0.5 ppb	< 0.1 ppb
Neodymium (Nd)	max. 0.1 ppb	< 0.1 ppb
Nickel (Ni)	max. 0.5 ppb	< 0.1 ppb
Niobium (Nb)	max. 0.1 ppb	< 0.1 ppb

moved OUT 205
7/28/21 12:30
moved into Fujita
7/28/21 13:24

VWR International LLC, Radnor Corporate Center, Building One, Suite 200, 100 Matsonford Road Radnor, PA 19087
VWR International bvba/sprl, Haasrode Research Park Zone 2020, Geldenaaksebaan 464, 3001 Leuven, Belgium
http://www.vwr.com

17936

Certificate Of Analysis

Date of Release: 11/1/2019

Name: **Ammonium Sulfate**
Crystal, ACS

Item No: **AX1385 All Sizes**
Lot / Batch No: **2019110166**
Country of Origin: **India**

Item	Specifications	Analysis
Assay ((NH4)2SO4)	99.0% min.	99.9%
Chloride (Cl)	5 ppm max.	<5 ppm
Color	White	Passes Test
Form	Crystals	Passes Test
Heavy metals (by ICP-OES)	5 ppm max.	<5 ppm
Insoluble Matter	0.005% max.	0.001%
Iron (Fe)	5 ppm max.	<5 ppm
Nitrate (NO3)	0.001% max.	<0.001%
pH of a 5% solution at 25°C	5.0-6.0	5.6
Phosphate (PO4)	5 ppm max.	<5 ppm
Residue After Ignition	0.005% max.	0.002%

SW6A-01-01-10

rec'd: 2/23/21 exp 2/23/31
AS

moved out 205
7/28/21 12:30
moved into Fujita
7/28/21 13:24

Joe Schoellkopff

Quality Control Manager

This document has been produced electronically and is valid without a signature.

EMD Millipore is a division of Merck KGaA, Darmstadt, Germany

EMD Millipore Corporation
400 Summit Drive
Burlington, MA 01803
U.S.A.

Form number: 00005624CA, Rev. 2.0

December 02, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048023

RE: PG&E Topock - RCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on November 17, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET Laboratories - Las Vegas.

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.

Samples N048023-006 (AmbientBlank-1-Q421) and -008 (AmbientBlank-2-Q421) were put on hold as per attached correspondence.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N047986-001C-MS and N047986-001C-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N047986-001C-MS and N047986-001C-MSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048023
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048023-001A	C-R22A-D-Q421	Surface Water	11/17/2021 10:00:00 AM	11/17/2021	12/2/2021
N048023-001B	C-R22A-D-Q421	Surface Water	11/17/2021 10:00:00 AM	11/17/2021	12/2/2021
N048023-001C	C-R22A-D-Q421	Surface Water	11/17/2021 10:00:00 AM	11/17/2021	12/2/2021
N048023-002A	C-R22A-S-Q421	Surface Water	11/17/2021 10:10:00 AM	11/17/2021	12/2/2021
N048023-002B	C-R22A-S-Q421	Surface Water	11/17/2021 10:10:00 AM	11/17/2021	12/2/2021
N048023-002C	C-R22A-S-Q421	Surface Water	11/17/2021 10:10:00 AM	11/17/2021	12/2/2021
N048023-003A	C-R27-D-Q421	Surface Water	11/17/2021 10:40:00 AM	11/17/2021	12/2/2021
N048023-003B	C-R27-D-Q421	Surface Water	11/17/2021 10:40:00 AM	11/17/2021	12/2/2021
N048023-003C	C-R27-D-Q421	Surface Water	11/17/2021 10:40:00 AM	11/17/2021	12/2/2021
N048023-004A	C-R27-S-Q421	Surface Water	11/17/2021 10:50:00 AM	11/17/2021	12/2/2021
N048023-004B	C-R27-S-Q421	Surface Water	11/17/2021 10:50:00 AM	11/17/2021	12/2/2021
N048023-004C	C-R27-S-Q421	Surface Water	11/17/2021 10:50:00 AM	11/17/2021	12/2/2021
N048023-005A	C-TAZ-D-Q421	Surface Water	11/17/2021 8:50:00 AM	11/17/2021	12/2/2021
N048023-005B	C-TAZ-D-Q421	Surface Water	11/17/2021 8:50:00 AM	11/17/2021	12/2/2021
N048023-005C	C-TAZ-D-Q421	Surface Water	11/17/2021 8:50:00 AM	11/17/2021	12/2/2021
N048023-006A	AmbientBlank-1-Q421	Surface Water	11/17/2021 9:05:00 AM	11/17/2021	12/2/2021
N048023-007A	C-TAZ-S-Q421	Surface Water	11/17/2021 9:00:00 AM	11/17/2021	12/2/2021
N048023-007B	C-TAZ-S-Q421	Surface Water	11/17/2021 9:00:00 AM	11/17/2021	12/2/2021
N048023-007C	C-TAZ-S-Q421	Surface Water	11/17/2021 9:00:00 AM	11/17/2021	12/2/2021
N048023-008A	AmbientBlank-2-Q421	Surface Water	11/17/2021 11:10:00 AM	11/17/2021	12/2/2021
N048023-009A	R-28-Q421	Surface Water	11/17/2021 11:05:00 AM	11/17/2021	12/2/2021
N048023-009B	R-28-Q421	Surface Water	11/17/2021 11:05:00 AM	11/17/2021	12/2/2021
N048023-009C	R-28-Q421	Surface Water	11/17/2021 11:05:00 AM	11/17/2021	12/2/2021
N048023-010A	R63-Q421	Surface Water	11/17/2021 9:40:00 AM	11/17/2021	12/2/2021
N048023-010B	R63-Q421	Surface Water	11/17/2021 9:40:00 AM	11/17/2021	12/2/2021
N048023-010C	R63-Q421	Surface Water	11/17/2021 9:40:00 AM	11/17/2021	12/2/2021
N048023-011A	C-BNS-Q421	Surface Water	11/17/2021 10:25:00 AM	11/17/2021	12/2/2021
N048023-011B	C-BNS-Q421	Surface Water	11/17/2021 10:25:00 AM	11/17/2021	12/2/2021
N048023-011C	C-BNS-Q421	Surface Water	11/17/2021 10:25:00 AM	11/17/2021	12/2/2021

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048023
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048023-012A	C-I-3-D-Q421	Surface Water	11/17/2021 9:20:00 AM	11/17/2021	12/2/2021
N048023-012B	C-I-3-D-Q421	Surface Water	11/17/2021 9:20:00 AM	11/17/2021	12/2/2021
N048023-012C	C-I-3-D-Q421	Surface Water	11/17/2021 9:20:00 AM	11/17/2021	12/2/2021
N048023-013A	C-I-3-S-Q421	Surface Water	11/17/2021 9:30:00 AM	11/17/2021	12/2/2021
N048023-013B	C-I-3-S-Q421	Surface Water	11/17/2021 9:30:00 AM	11/17/2021	12/2/2021
N048023-013C	C-I-3-S-Q421	Surface Water	11/17/2021 9:30:00 AM	11/17/2021	12/2/2021
N048023-014A	SW1-Q421	Surface Water	11/17/2021 12:30:00 PM	11/17/2021	12/2/2021
N048023-014B	SW1-Q421	Surface Water	11/17/2021 12:30:00 PM	11/17/2021	12/2/2021
N048023-014C	SW1-Q421	Surface Water	11/17/2021 12:30:00 PM	11/17/2021	12/2/2021
N048023-015A	SW2-Q421	Surface Water	11/17/2021 12:55:00 PM	11/17/2021	12/2/2021
N048023-015B	SW2-Q421	Surface Water	11/17/2021 12:55:00 PM	11/17/2021	12/2/2021
N048023-015C	SW2-Q421	Surface Water	11/17/2021 12:55:00 PM	11/17/2021	12/2/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 10:00:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211118A** QC Batch: **R158371**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/18/2021 09:50 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211119A** QC Batch: **90338**				PrepDate: **11/18/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 11:30 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:**	C-R22A-S-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 10:10:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211118A** QC Batch: **R158371** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/18/2021 10:00 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP8_211119A** QC Batch: **90338** PrepDate: **11/18/2021** Analyst: **CEI**							
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 11:36 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:**	C-R27-D-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 10:40:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211118A** QC Batch: **R158371** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/18/2021 10:10 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP8_211119A** QC Batch: **90338** PrepDate: **11/18/2021** Analyst: **CEI**							
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 11:42 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:**	C-R27-S-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 10:50:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211118A** QC Batch: **R158371** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/18/2021 10:19 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP8_211119A** QC Batch: **90338** PrepDate: **11/18/2021** Analyst: **CEI**							
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 11:48 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:**	C-TAZ-D-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 8:50:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211118A** QC Batch: **R158371**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/18/2021 11:26 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211119A** QC Batch: **90338**				PrepDate:	**11/18/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 11:54 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:**	C-TAZ-S-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 9:00:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211118A** QC Batch: **R158371**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/18/2021 11:44 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211119A** QC Batch: **90338**				PrepDate:	**11/18/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 12:00 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:**	R-28-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 11:05:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211118A** QC Batch: **R158371**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/18/2021 12:03 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211119A** QC Batch: **90338**				PrepDate:	**11/18/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 12:06 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:**	R63-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 9:40:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211118A**	QC Batch: **R158371**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/18/2021 12:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211119A**	QC Batch: **90338**			PrepDate:	**11/18/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 12:59 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:**	C-BNS-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 10:25:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211118A** QC Batch: **R158371** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/18/2021 01:00 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP8_211119A** QC Batch: **90338** PrepDate: **11/18/2021** Analyst: **CEI**							
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 12:18 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:**	C-I-3-D-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 9:20:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211118A** QC Batch: **R158371**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/18/2021 01:19 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP8_211119A** QC Batch: **90338**				PrepDate: **11/18/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 12:35 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:**	C-I-3-S-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 9:30:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211118A** QC Batch: **R158371** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/18/2021 01:38 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP8_211119A** QC Batch: **90338** PrepDate: **11/18/2021** Analyst: **CEI**							
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 12:41 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:**	SW1-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 12:30:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211118A** QC Batch: **R158371**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/18/2021 01:57 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP8_211119A** QC Batch: **90338**				PrepDate: **11/18/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 12:47 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:**	SW2-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 12:55:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211118A** QC Batch: **R158371**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/18/2021 02:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211119A** QC Batch: **90338**				PrepDate:	**11/18/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 12:53 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: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R158371**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158371**
Client ID: **PBW**	Batch ID: **R158371**	TestNo: **EPA 218.6**		Analysis Date: **11/18/2021**	SeqNo: **4439930**

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-R158371**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158371**
Client ID: **LCSW**	Batch ID: **R158371**	TestNo: **EPA 218.6**		Analysis Date: **11/18/2021**	SeqNo: **4439931**

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: **N048023-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158371**
Client ID: **ZZZZZZ**	Batch ID: **R158371**	TestNo: **EPA 218.6**		Analysis Date: **11/18/2021**	SeqNo: **4439936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	90	110				

Sample ID: **N048023-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158371**
Client ID: **ZZZZZZ**	Batch ID: **R158371**	TestNo: **EPA 218.6**		Analysis Date: **11/18/2021**	SeqNo: **4439937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Sample ID: **N048023-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158371**
Client ID: **ZZZZZZ**	Batch ID: **R158371**	TestNo: **EPA 218.6**		Analysis Date: **11/18/2021**	SeqNo: **4439938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.093	0.20	1.000	0	109	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: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048023-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158371**
Client ID: **ZZZZZZ**	Batch ID: **R158371**	TestNo: **EPA 218.6**		Analysis Date: **11/18/2021**	SeqNo: **4439939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Sample ID: **N048023-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158371**
Client ID: **ZZZZZZ**	Batch ID: **R158371**	TestNo: **EPA 218.6**		Analysis Date: **11/18/2021**	SeqNo: **4439943**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.072	0.20	1.000	0	107	90	110				

Sample ID: **N048023-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158371**
Client ID: **ZZZZZZ**	Batch ID: **R158371**	TestNo: **EPA 218.6**		Analysis Date: **11/18/2021**	SeqNo: **4439947**

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

Sample ID: **N048023-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158371**
Client ID: **ZZZZZZ**	Batch ID: **R158371**	TestNo: **EPA 218.6**		Analysis Date: **11/18/2021**	SeqNo: **4439952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID: **N048023-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158371**
Client ID: **ZZZZZZ**	Batch ID: **R158371**	TestNo: **EPA 218.6**		Analysis Date: **11/18/2021**	SeqNo: **4439954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.076	0.20	1.000	0	108	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: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048023-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158371**
Client ID: **ZZZZZZ** Batch ID: **R158371** TestNo: **EPA 218.6** Analysis Date: **11/18/2021** SeqNo: **4439956**

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

Sample ID: **N048023-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158371**
Client ID: **ZZZZZZ** Batch ID: **R158371** TestNo: **EPA 218.6** Analysis Date: **11/18/2021** SeqNo: **4439958**

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

Sample ID: **N048023-010ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158371**
Client ID: **ZZZZZZ** Batch ID: **R158371** TestNo: **EPA 218.6** Analysis Date: **11/18/2021** SeqNo: **4439961**

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

Sample ID: **N048023-005AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158371**
Client ID: **ZZZZZZ** Batch ID: **R158371** TestNo: **EPA 218.6** Analysis Date: **11/18/2021** SeqNo: **4439962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110	1.072	2.72	20	

Sample ID: **N048023-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158371**
Client ID: **ZZZZZZ** Batch ID: **R158371** TestNo: **EPA 218.6** Analysis Date: **11/18/2021** SeqNo: **4439963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.073	0.20	1.000	0	107	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: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048023-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158371**
Client ID: **ZZZZZZ**	Batch ID: **R158371**	TestNo: **EPA 218.6**		Analysis Date: **11/18/2021**	SeqNo: **4439964**

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

Sample ID: **N048023-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158371**
Client ID: **ZZZZZZ**	Batch ID: **R158371**	TestNo: **EPA 218.6**		Analysis Date: **11/18/2021**	SeqNo: **4439965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	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: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **MB-90338**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **11/18/2021**	RunNo: **158402**
Client ID: **PBW**	Batch ID: **90338**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/19/2021**	SeqNo: **4440815**

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

Sample ID: **LCS-90338**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **11/18/2021**	RunNo: **158402**
Client ID: **LCSW**	Batch ID: **90338**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/19/2021**	SeqNo: **4440816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.267	1.0	10.00	0	103	85	115				

Sample ID: **N047986-001C-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **11/18/2021**	RunNo: **158402**
Client ID: **ZZZZZZ**	Batch ID: **90338**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/19/2021**	SeqNo: **4440847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1240.621	25	10.00	1307	-665	75	125				S

Sample ID: **N047986-001C-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **11/18/2021**	RunNo: **158402**
Client ID: **ZZZZZZ**	Batch ID: **90338**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/19/2021**	SeqNo: **4440848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1218.012	25	10.00	1307	-891	75	125	1241	1.84	20	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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **N047986-001C-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **158402**
Client ID: **ZZZZZZ** Batch ID: **90338** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/19/2021** SeqNo: **4440846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1240.748	25	10.00	1307	-663	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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 10:00:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-FA1_211119A**	QC Batch: **R158378**			PrepDate:			Analyst: **QBM**
Nitrate/Nitrite as N	0.35	0.037	0.050		mg/L	1	11/19/2021

Qualifiers:

B	Analyte detected in 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:**	C-R22A-S-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 10:10:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-FA1_211119A**	QC Batch: **R158378**			PrepDate:			Analyst: **QBM**
Nitrate/Nitrite as N	0.30	0.037	0.050		mg/L	1	11/19/2021

Qualifiers:

B	Analyte detected in 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:**	C-R27-D-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 10:40:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-FA1_211119A**	QC Batch: **R158378**			PrepDate:			Analyst: **QBM**
Nitrate/Nitrite as N	0.30	0.037	0.050		mg/L	1	11/19/2021

Qualifiers:

B	Analyte detected in 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:**	C-R27-S-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 10:50:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-FA1_211119A**	QC Batch: **R158378**			PrepDate:			Analyst: **QBM**
Nitrate/Nitrite as N	0.31	0.037	0.050		mg/L	1	11/19/2021

Qualifiers:

B	Analyte detected in 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:**	C-TAZ-D-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 8:50:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-FA1_211120A**	QC Batch: **R158384**			PrepDate:			Analyst: **QBM**
Nitrate/Nitrite as N	0.30	0.037	0.050		mg/L	1	11/20/2021

Qualifiers:

B	Analyte detected in 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:**	C-TAZ-S-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 9:00:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-FA1_211120A**	QC Batch: **R158384**			PrepDate:			Analyst: **QBM**
Nitrate/Nitrite as N	0.31	0.037	0.050		mg/L	1	11/20/2021

Qualifiers:

B	Analyte detected in 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:**	R-28-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 11:05:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-FA1_211120A**	QC Batch: **R158384**			PrepDate:			Analyst: **QBM**
Nitrate/Nitrite as N	0.30	0.037	0.050		mg/L	1	11/20/2021

Qualifiers:

B	Analyte detected in 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:**	R63-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 9:40:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-FA1_211120A**	QC Batch: **R158384**			PrepDate:			Analyst: **QBM**
Nitrate/Nitrite as N	0.30	0.037	0.050		mg/L	1	11/20/2021

Qualifiers:

B	Analyte detected in 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:**	C-BNS-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 10:25:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-FA1_211120A**	QC Batch: **R158384**		PrepDate:				Analyst: **QBM**
Nitrate/Nitrite as N	0.29	0.037	0.050		mg/L	1	11/20/2021

Qualifiers:

B	Analyte detected in 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:**	C-I-3-D-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 9:20:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-FA1_211120A**	QC Batch: **R158384**			PrepDate:			Analyst: **QBM**
Nitrate/Nitrite as N	0.30	0.037	0.050		mg/L	1	11/20/2021

Qualifiers:

B	Analyte detected in 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:**	C-I-3-S-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 9:30:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-FA1_211120A**	QC Batch: **R158384**			PrepDate:			Analyst: **QBM**
Nitrate/Nitrite as N	0.30	0.037	0.050		mg/L	1	11/20/2021

Qualifiers:

B	Analyte detected in 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:**	SW1-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 12:30:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-FA1_211120A**	QC Batch: **R158384**			PrepDate:			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.037	0.050		mg/L	1	11/20/2021

Qualifiers:

B	Analyte detected in 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:**	SW2-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 12:55:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-FA1_211120A**	QC Batch: **R158384**			PrepDate:			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.037	0.050		mg/L	1	11/20/2021

Qualifiers:

B	Analyte detected in 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: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W_PGE

Sample ID: **MB-R158378**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **158378**
Client ID: **PBW**	Batch ID: **R158378**	TestNo: **SM4500-NO3**		Analysis Date: **11/19/2021**	SeqNo: **4440149**

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-R158378**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **158378**
Client ID: **LCSW**	Batch ID: **R158378**	TestNo: **SM4500-NO3**		Analysis Date: **11/19/2021**	SeqNo: **4440150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.465	0.050	0.5000	0	93.0	85	115				

Sample ID: **N048023-003BDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **158378**
Client ID: **ZZZZZZ**	Batch ID: **R158378**	TestNo: **SM4500-NO3**		Analysis Date: **11/19/2021**	SeqNo: **4440154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.294	0.050						0.3002	1.95	20	

Sample ID: **N048023-004BMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **158378**
Client ID: **ZZZZZZ**	Batch ID: **R158378**	TestNo: **SM4500-NO3**		Analysis Date: **11/19/2021**	SeqNo: **4440156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.762	0.050	0.5000	0.3065	91.0	75	125				

Sample ID: **N048023-004BMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **158378**
Client ID: **ZZZZZZ**	Batch ID: **R158378**	TestNo: **SM4500-NO3**		Analysis Date: **11/19/2021**	SeqNo: **4440157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.783	0.050	0.5000	0.3065	95.2	75	125	0.7617	2.72	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: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W_PGE

Sample ID: **MB-R158384**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **158384**
Client ID: **PBW**	Batch ID: **R158384**	TestNo: **SM4500-NO3**		Analysis Date: **11/20/2021**	SeqNo: **4440277**

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-R158384**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **158384**
Client ID: **LCSW**	Batch ID: **R158384**	TestNo: **SM4500-NO3**		Analysis Date: **11/20/2021**	SeqNo: **4440278**

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	97.0	85	115				

Sample ID: **N048023-012BDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **158384**
Client ID: **ZZZZZZ**	Batch ID: **R158384**	TestNo: **SM4500-NO3**		Analysis Date: **11/20/2021**	SeqNo: **4440282**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.293	0.050						0.2973	1.35	20	

Sample ID: **N048023-013BMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **158384**
Client ID: **ZZZZZZ**	Batch ID: **R158384**	TestNo: **SM4500-NO3**		Analysis Date: **11/20/2021**	SeqNo: **4440284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.806	0.050	0.5000	0.2995	101	75	125				

Sample ID: **N048023-013BMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **158384**
Client ID: **ZZZZZZ**	Batch ID: **R158384**	TestNo: **SM4500-NO3**		Analysis Date: **11/20/2021**	SeqNo: **4440285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.830	0.050	0.5000	0.2995	106	75	125	0.8060	2.90	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
Lab Order: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048023-001

Client Sample ID: C-R22A-D-Q421
Collection Date: 11/17/2021 10:00:00 AM
Matrix: SURFACE WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211119A**	QC Batch: **90338**			PrepDate:	**11/18/2021**		Analyst: **CEI**
Arsenic	2.6	0.050	0.10		µg/L	1	11/19/2021 11:30 AM
Manganese	0.58	0.026	0.50		µg/L	1	11/19/2021 11:30 AM
Molybdenum	4.5	0.12	0.50		µg/L	1	11/19/2021 11:30 AM
Selenium	1.5	0.044	0.50		µg/L	1	11/19/2021 11:30 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
Lab Order: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048023-002

Client Sample ID: C-R22A-S-Q421
Collection Date: 11/17/2021 10:10:00 AM
Matrix: SURFACE WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211119A**	QC Batch: **90338**				PrepDate:	**11/18/2021**	Analyst: **CEI**
Arsenic	2.7	0.050	0.10		µg/L	1	11/19/2021 11:36 AM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 11:36 AM
Molybdenum	4.3	0.12	0.50		µg/L	1	11/19/2021 11:36 AM
Selenium	1.5	0.044	0.50		µg/L	1	11/19/2021 11:36 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
Lab Order: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048023-003

Client Sample ID: C-R27-D-Q421
Collection Date: 11/17/2021 10:40:00 AM
Matrix: SURFACE WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211119A**	QC Batch: **90338**			PrepDate:	**11/18/2021**		Analyst: **CEI**
Arsenic	3.0	0.050	0.10		µg/L	1	11/19/2021 11:42 AM
Manganese	0.59	0.026	0.50		µg/L	1	11/19/2021 11:42 AM
Molybdenum	4.4	0.12	0.50		µg/L	1	11/19/2021 11:42 AM
Selenium	1.8	0.044	0.50		µg/L	1	11/19/2021 11:42 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:**	C-R27-S-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 10:50:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-004		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211119A** QC Batch: **90338** PrepDate: **11/18/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.9	0.050	0.10		µg/L	1	11/19/2021 11:48 AM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 11:48 AM
Molybdenum	4.4	0.12	0.50		µg/L	1	11/19/2021 11:48 AM
Selenium	1.9	0.044	0.50		µg/L	1	11/19/2021 11:48 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:**	C-TAZ-D-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 8:50:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211119A**	QC Batch: **90338**			PrepDate:	**11/18/2021**		Analyst: **CEI**
Arsenic	2.9	0.050	0.10		µg/L	1	11/19/2021 11:54 AM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 11:54 AM
Molybdenum	4.5	0.12	0.50		µg/L	1	11/19/2021 11:54 AM
Selenium	1.8	0.044	0.50		µg/L	1	11/19/2021 11:54 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
Lab Order: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048023-007

Client Sample ID: C-TAZ-S-Q421
Collection Date: 11/17/2021 9:00:00 AM
Matrix: SURFACE WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211119A**	QC Batch: **90338**				PrepDate:	**11/18/2021**	Analyst: **CEI**
Arsenic	3.3	0.050	0.10		µg/L	1	11/19/2021 12:00 PM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 12:00 PM
Molybdenum	4.6	0.12	0.50		µg/L	1	11/19/2021 12:00 PM
Selenium	1.8	0.044	0.50		µg/L	1	11/19/2021 12:00 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:**	R-28-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 11:05:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211119A**	QC Batch: **90338**			PrepDate:	**11/18/2021**		Analyst: **CEI**
Arsenic	3.3	0.050	0.10		µg/L	1	11/19/2021 12:06 PM
Manganese	0.95	0.026	0.50		µg/L	1	11/19/2021 12:06 PM
Molybdenum	4.7	0.12	0.50		µg/L	1	11/19/2021 12:06 PM
Selenium	2.0	0.044	0.50		µg/L	1	11/19/2021 12:06 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
Lab Order: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048023-010

Client Sample ID: R63-Q421
Collection Date: 11/17/2021 9:40:00 AM
Matrix: SURFACE WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211119A**	QC Batch: **90338**			PrepDate:		**11/18/2021**	Analyst: **CEI**
Arsenic	2.8	0.050	0.10		µg/L	1	11/19/2021 12:59 PM
Manganese	1.8	0.026	0.50		µg/L	1	11/19/2021 12:59 PM
Molybdenum	4.4	0.12	0.50		µg/L	1	11/19/2021 12:59 PM
Selenium	1.7	0.044	0.50		µg/L	1	11/19/2021 12:59 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
Lab Order: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048023-011

Client Sample ID: C-BNS-Q421
Collection Date: 11/17/2021 10:25:00 AM
Matrix: SURFACE WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211119A**	QC Batch: **90338**			PrepDate:	**11/18/2021**		Analyst: **CEI**
Arsenic	3.0	0.050	0.10		µg/L	1	11/19/2021 12:18 PM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 12:18 PM
Molybdenum	4.4	0.12	0.50		µg/L	1	11/19/2021 12:18 PM
Selenium	1.9	0.044	0.50		µg/L	1	11/19/2021 12:18 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
Lab Order: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048023-012

Client Sample ID: C-I-3-D-Q421
Collection Date: 11/17/2021 9:20:00 AM
Matrix: SURFACE WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211119A**	QC Batch: **90338**			PrepDate:		**11/18/2021**	Analyst: **CEI**
Arsenic	2.5	0.050	0.10		µg/L	1	11/19/2021 12:35 PM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 12:35 PM
Molybdenum	4.5	0.12	0.50		µg/L	1	11/19/2021 12:35 PM
Selenium	1.5	0.044	0.50		µg/L	1	11/19/2021 12:35 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
Lab Order: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048023-013

Client Sample ID: C-I-3-S-Q421
Collection Date: 11/17/2021 9:30:00 AM
Matrix: SURFACE WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211119A**	QC Batch: **90338**			PrepDate:	**11/18/2021**		Analyst: **CEI**
Arsenic	2.8	0.050	0.10		µg/L	1	11/19/2021 12:41 PM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 12:41 PM
Molybdenum	4.5	0.12	0.50		µg/L	1	11/19/2021 12:41 PM
Selenium	1.6	0.044	0.50		µg/L	1	11/19/2021 12:41 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
Lab Order: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048023-014

Client Sample ID: SW1-Q421
Collection Date: 11/17/2021 12:30:00 PM
Matrix: SURFACE WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211119A**	QC Batch: **90338**			PrepDate:	**11/18/2021**		Analyst: **CEI**
Arsenic	2.2	0.050	0.10		µg/L	1	11/19/2021 12:47 PM
Manganese	6.9	0.026	0.50		µg/L	1	11/19/2021 12:47 PM
Molybdenum	5.6	0.12	0.50		µg/L	1	11/19/2021 12:47 PM
Selenium	1.1	0.044	0.50		µg/L	1	11/19/2021 12:47 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:**	SW2-Q421
Lab Order:	N048023	**Collection Date:**	11/17/2021 12:55:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048023-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211119A**	QC Batch: **90338**				PrepDate:	**11/18/2021**	Analyst: **CEI**
Arsenic	2.3	0.050	0.10		µg/L	1	11/19/2021 12:53 PM
Manganese	7.6	0.026	0.50		µg/L	1	11/19/2021 12:53 PM
Molybdenum	5.1	0.12	0.50		µg/L	1	11/19/2021 12:53 PM
Selenium	0.99	0.044	0.50		µg/L	1	11/19/2021 12:53 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: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **MB-90338**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **11/18/2021**	RunNo: **158402**
Client ID: **PBW**	Batch ID: **90338**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/19/2021**	SeqNo: **4440860**

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

Sample ID: **LCS-90338**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **11/18/2021**	RunNo: **158402**
Client ID: **LCSW**	Batch ID: **90338**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/19/2021**	SeqNo: **4440861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.682	0.10	10.00	0	107	85	115				
Manganese	100.951	0.50	100.0	0	101	85	115				
Molybdenum	10.044	0.50	10.00	0	100	85	115				
Selenium	9.747	0.50	10.00	0	97.5	85	115				

Sample ID: **N047986-001C-MS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **11/18/2021**	RunNo: **158402**
Client ID: **ZZZZZZ**	Batch ID: **90338**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/19/2021**	SeqNo: **4440867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.177	0.10	10.00	1.661	125	75	125				S
Manganese	89.456	0.50	100.0	0	89.5	75	125				
Molybdenum	39.205	0.50	10.00	31.57	76.4	75	125				
Selenium	21.497	0.50	10.00	13.40	81.0	75	125				

Sample ID: **N047986-001C-MSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **11/18/2021**	RunNo: **158402**
Client ID: **ZZZZZZ**	Batch ID: **90338**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/19/2021**	SeqNo: **4440869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.520	0.10	10.00	1.661	129	75	125	14.18	2.39	20	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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N047986-001C-MSD** SampType: **MSD** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **11/18/2021** RunNo: **158402**
Client ID: **ZZZZZZ** Batch ID: **90338** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/19/2021** SeqNo: **4440869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	88.900	0.50	100.0	0	88.9	75	125	89.46	0.624	20	
Molybdenum	38.550	0.50	10.00	31.57	69.8	75	125	39.20	1.69	20	S
Selenium	22.524	0.50	10.00	13.40	91.2	75	125	21.50	4.67	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: N048023
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N047986-001C-PS** SampType: **PS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: RunNo: **158402**
Client ID: **ZZZZZZ** Batch ID: **90338** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/19/2021** SeqNo: **4440865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.085	0.10	10.00	1.661	114	80	120				
Manganese	90.358	0.50	100.0	0	90.4	80	120				
Molybdenum	39.053	0.50	10.00	31.57	74.9	80	120				S
Selenium	21.706	0.50	10.00	13.40	83.0	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		

N048023

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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 2

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; Ca/Trans; LEVEL III ✓; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: [redacted]	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Nara Tag		Phone: 949-727-1400, ext 200 Fax:	
Title: Project Manager	Phone: 916-786-3302 Fax:		
Signature: Date: 11/17/21	Sampled By: Nara Tag		

Sample Receipt Condition

	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact	✓	
4. Seal Present		✓
5. IR number		
6. Method of Cooling: ICE		

Sample Temp: 3.4°C / 3.6°C

Courier: ASSET

Tracking No.:

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

Project Name: PG&E Topock - RCM

Project Number: 30110373.4Q21GW

Signature: Date: 11/17/21

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4, NH4, OH 250 mL poly	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 125 mL poly	Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, Molybdenum, Selenium 500mL poly	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, 500mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1														
2	N048023-01	C-R22A-D-Q421	11/17/21	10:00		X	X	X	X	E	3	P	BNS	
3	-02	C-R22A-S-Q421	11/17/21	10:10		X	X	X	X	E	3	P	BNS	
4	-03	C-R27-D-Q421	11/17/21	10:40		X	X	X	X	E	3	P	BNS	
5	-04	C-R27-S-Q421	11/17/21	10:50		X	X	X	X	E	3	P	BNS	
	-05	C-TAZ-D-Q421	11/17/21	8:50		X	X	X	X	E	3	P	BNS	
7	-06	AmbientBlank-1-Q421	11/17/21	9:05		X	X	X	X	E	3	P	BNS	Hold
8	-07	C-TAZ-S-Q421	11/17/21	9:00		X	X	X	X	E	3	P	BNS	
9	-08	AmbientBlank-2-Q421	11/17/21	11:10		X	X	X	X	E	3	P	BNS	Hold
10	-09	R-28-Q421	11/17/21	11:05		X	X	X	X	E	3	P	BNS	
11	-10	R63-Q421	11/17/21	9:40		X	X	X	X	E	3	P	BNS	
12	-11	C-BNS-Q421	11/17/21	10:25		X	X	X	X	E	3	P	BNS	
13	-12	C-I-3-D-Q421	11/17/21	9:20		X	X	X	X	E	3	P	BNS	
14	-13	C-I-3-S-Q421	11/17/21	9:30		X	X	X	X	E	3	P	BNS	

Relinquished by (Signature and Printed Name): Nara Tag Date/Time: 11/17/21 1520

Relinquished by (Signature and Printed Name): ROMEO ALCANTARA Date/Time: 11/17/21 1520

Relinquished by (Signature and Printed Name): ROMEO ALCANTARA Date/Time: 11/17/21 1820

Relinquished by (Signature and Printed Name): ROMEO ALCANTARA Date/Time: 11/17/21 1820

Relinquished by (Signature and Printed Name): Date/Time:

Relinquished 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
- [X] E = Routine 5-7 Workdays

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

Special Instruction:

Terms

1. All samples will be disposed in 45 days 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 5% 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:	B	(NH4)2SO4/NH4OH	

Container Type:

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

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
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www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

| | | |

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:	11/17/2021	Workorder:	N048023
Rep sample Temp (Deg C):	2.4/3.6	IR Gun ID:	3

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 By: YR YRJ 11/18/2021

Reviewed By: MBC 11/19/2021

Subject: RE: PG&E Topock - RCM, 30110373.4Q21GW (ASSET Labs No. N048023)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 11/18/2021, 12:39 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "giselle@assetlaboratories.com" <giselle@assetlaboratories.com>, "rustico.aquino@assetlaboratoriesph.com" <rustico.aquino@assetlaboratoriesph.com>

Hi Yoandra,
The COC was inadvertently marked for all analytes for the Ambient Blanks. They should be for Cr6 only and placed on hold.

Thanks,
Laura

From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Thursday, November 18, 2021 12:30 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>; Tina Rice <Tina.Rice@critigen.com>
Cc: maryann.balilu@assetlaboratoriesph.com; giselle@assetlaboratories.com; rustico.aquino@assetlaboratoriesph.com
Subject: PG&E Topock - RCM, 30110373.4Q21GW (ASSET Labs No. N048023)

Hi Laura,

Please be informed that we received only the Hex Cr bottle for samples 6 and 8 on the attached COC (Ambient Blanks), but all tests are requested.

Pleas advise.

--
Thanks,

Yoandra Rodriguez
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 | F: 702.307.2691
California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436

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ASSET Laboratories

WORK ORDER Summary

18-Nov-21

WorkOrder: N048023

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/17/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048023-001A	C-R22A-D-Q421	11/17/2021 10:00:00 AM	12/3/2021	Surface Water	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048023-001B			12/3/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048023-001C			12/3/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048023-002A	C-R22A-S-Q421	11/17/2021 10:10:00 AM	12/3/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048023-002B			12/3/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048023-002C			12/3/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048023-003A	C-R27-D-Q421	11/17/2021 10:40:00 AM	12/3/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048023-003B			12/3/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048023-003C			12/3/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048023-004A	C-R27-S-Q421	11/17/2021 10:50:00 AM	12/3/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048023-004B			12/3/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048023-004C			12/3/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048023-005A	C-TAZ-D-Q421	11/17/2021 8:50:00 AM	12/3/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

18-Nov-21

WorkOrder: N048023

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/17/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048023-005B	C-TAZ-D-Q421	11/17/2021 8:50:00 AM	12/3/2021	Surface Water	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048023-005C			12/3/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048023-006A	AmbientBlank-1-Q421	11/17/2021 9:05:00 AM	12/3/2021		EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N048023-007A	C-TAZ-S-Q421	11/17/2021 9:00:00 AM	12/3/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048023-007B			12/3/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048023-007C			12/3/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048023-008A	AmbientBlank-2-Q421	11/17/2021 11:10:00 AM	12/3/2021		EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N048023-009A	R-28-Q421	11/17/2021 11:05:00 AM	12/3/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048023-009B			12/3/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048023-009C			12/3/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048023-010A	R63-Q421	11/17/2021 9:40:00 AM	12/3/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048023-010B			12/3/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048023-010C			12/3/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

18-Nov-21

WorkOrder: N048023

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/17/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048023-011A	C-BNS-Q421	11/17/2021 10:25:00 AM	12/3/2021	Surface Water	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048023-011B			12/3/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048023-011C			12/3/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048023-012A	C-I-3-D-Q421	11/17/2021 9:20:00 AM	12/3/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048023-012B			12/3/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048023-012C			12/3/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048023-013A	C-I-3-S-Q421	11/17/2021 9:30:00 AM	12/3/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048023-013B			12/3/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048023-013C			12/3/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048023-014A	SW1-Q421	11/17/2021 12:30:00 PM	12/3/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048023-014B			12/3/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048023-014C			12/3/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048023-015A	SW2-Q421	11/17/2021 12:55:00 PM	12/3/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

18-Nov-21

WorkOrder: N048023

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/17/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048023-015B	SW2-Q421	11/17/2021 12:55:00 PM	12/3/2021	Surface Water	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048023-015C			12/3/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/3/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048023-016A	FOLDER	12/3/2021	12/3/2021		Folder	Folder	☐	☐	☐	LAB
			12/3/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/3/2021		Folder	Folder	☐	☐	☐	LAB

December 02, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048038

RE: PG&E Topock - RCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on November 18, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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.

Sample N048038-016 (AmbientBlank-3-Q421) was on hold as per COC.

Subcontracted Analyses:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Arsenic in QC samples N048038-001C-MS and N048038-001C-MSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048038
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048038-001A	C-CON-D-Q421	Surface Water	11/18/2021 9:10:00 AM	11/18/2021	12/2/2021
N048038-001B	C-CON-D-Q421	Surface Water	11/18/2021 9:10:00 AM	11/18/2021	12/2/2021
N048038-001C	C-CON-D-Q421	Surface Water	11/18/2021 9:10:00 AM	11/18/2021	12/2/2021
N048038-002A	C-CON-S-Q421	Surface Water	11/18/2021 9:20:00 AM	11/18/2021	12/2/2021
N048038-002B	C-CON-S-Q421	Surface Water	11/18/2021 9:20:00 AM	11/18/2021	12/2/2021
N048038-002C	C-CON-S-Q421	Surface Water	11/18/2021 9:20:00 AM	11/18/2021	12/2/2021
N048038-003A	C-NR4-S-Q421	Surface Water	11/18/2021 10:50:00 AM	11/18/2021	12/2/2021
N048038-003B	C-NR4-S-Q421	Surface Water	11/18/2021 10:50:00 AM	11/18/2021	12/2/2021
N048038-003C	C-NR4-S-Q421	Surface Water	11/18/2021 10:50:00 AM	11/18/2021	12/2/2021
N048038-004A	C-NR1-D-Q421	Surface Water	11/18/2021 9:40:00 AM	11/18/2021	12/2/2021
N048038-004B	C-NR1-D-Q421	Surface Water	11/18/2021 9:40:00 AM	11/18/2021	12/2/2021
N048038-004C	C-NR1-D-Q421	Surface Water	11/18/2021 9:40:00 AM	11/18/2021	12/2/2021
N048038-005A	C-NR1-S-Q421	Surface Water	11/18/2021 9:50:00 AM	11/18/2021	12/2/2021
N048038-005B	C-NR1-S-Q421	Surface Water	11/18/2021 9:50:00 AM	11/18/2021	12/2/2021
N048038-005C	C-NR1-S-Q421	Surface Water	11/18/2021 9:50:00 AM	11/18/2021	12/2/2021
N048038-006A	C-NR3-D-Q421	Surface Water	11/18/2021 10:05:00 AM	11/18/2021	12/2/2021
N048038-006B	C-NR3-D-Q421	Surface Water	11/18/2021 10:05:00 AM	11/18/2021	12/2/2021
N048038-006C	C-NR3-D-Q421	Surface Water	11/18/2021 10:05:00 AM	11/18/2021	12/2/2021
N048038-007A	C-MAR-D-Q421	Surface Water	11/18/2021 8:05:00 AM	11/18/2021	12/2/2021
N048038-007B	C-MAR-D-Q421	Surface Water	11/18/2021 8:05:00 AM	11/18/2021	12/2/2021
N048038-007C	C-MAR-D-Q421	Surface Water	11/18/2021 8:05:00 AM	11/18/2021	12/2/2021
N048038-008A	C-MAR-S-Q421	Surface Water	11/18/2021 8:15:00 AM	11/18/2021	12/2/2021
N048038-008B	C-MAR-S-Q421	Surface Water	11/18/2021 8:15:00 AM	11/18/2021	12/2/2021
N048038-008C	C-MAR-S-Q421	Surface Water	11/18/2021 8:15:00 AM	11/18/2021	12/2/2021
N048038-009A	C-NR3-S-Q421	Surface Water	11/18/2021 10:25:00 AM	11/18/2021	12/2/2021
N048038-009B	C-NR3-S-Q421	Surface Water	11/18/2021 10:25:00 AM	11/18/2021	12/2/2021
N048038-009C	C-NR3-S-Q421	Surface Water	11/18/2021 10:25:00 AM	11/18/2021	12/2/2021
N048038-010A	R-19-Q421	Surface Water	11/18/2021 8:30:00 AM	11/18/2021	12/2/2021
N048038-010B	R-19-Q421	Surface Water	11/18/2021 8:30:00 AM	11/18/2021	12/2/2021

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048038
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048038-010C	R-19-Q421	Surface Water	11/18/2021 8:30:00 AM	11/18/2021	12/2/2021
N048038-011A	RRB-Q421	Surface Water	11/18/2021 8:45:00 AM	11/18/2021	12/2/2021
N048038-011B	RRB-Q421	Surface Water	11/18/2021 8:45:00 AM	11/18/2021	12/2/2021
N048038-011C	RRB-Q421	Surface Water	11/18/2021 8:45:00 AM	11/18/2021	12/2/2021
N048038-012A	MW-914-Q421	Surface Water	11/18/2021 8:55:00 AM	11/18/2021	12/2/2021
N048038-012B	MW-914-Q421	Surface Water	11/18/2021 8:55:00 AM	11/18/2021	12/2/2021
N048038-012C	MW-914-Q421	Surface Water	11/18/2021 8:55:00 AM	11/18/2021	12/2/2021
N048038-013A	MW-912-Q421	Surface Water	11/18/2021 9:30:00 AM	11/18/2021	12/2/2021
N048038-013B	MW-912-Q421	Surface Water	11/18/2021 9:30:00 AM	11/18/2021	12/2/2021
N048038-013C	MW-912-Q421	Surface Water	11/18/2021 9:30:00 AM	11/18/2021	12/2/2021
N048038-014A	C-NR4-D-Q421	Surface Water	11/18/2021 10:40:00 AM	11/18/2021	12/2/2021
N048038-014B	C-NR4-D-Q421	Surface Water	11/18/2021 10:40:00 AM	11/18/2021	12/2/2021
N048038-014C	C-NR4-D-Q421	Surface Water	11/18/2021 10:40:00 AM	11/18/2021	12/2/2021
N048038-015A	MW-913-Q421	Surface Water	11/18/2021 10:15:00 AM	11/18/2021	12/2/2021
N048038-015B	MW-913-Q421	Surface Water	11/18/2021 10:15:00 AM	11/18/2021	12/2/2021
N048038-015C	MW-913-Q421	Surface Water	11/18/2021 10:15:00 AM	11/18/2021	12/2/2021
N048038-016A	AmbientBlank-3-Q421	Surface Water	11/18/2021 10:55:00 AM	11/18/2021	12/2/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 9:10:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B** QC Batch: **R158407**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 02:54 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A					
RunID: **NV00922-ICP8_211119B** QC Batch: **90357**				PrepDate: **11/19/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 05:56 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:**	C-CON-S-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 9:20:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B** QC Batch: **R158407**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 03:29 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211119B** QC Batch: **90357**				PrepDate: **11/19/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 06:26 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:**	C-NR4-S-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 10:50:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B** QC Batch: **R158407**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 04:06 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211119B** QC Batch: **90357**				PrepDate:	**11/19/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 06:32 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:**	C-NR1-D-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 9:40:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B** QC Batch: **R158407**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 04:25 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211119B** QC Batch: **90357**				PrepDate: **11/19/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 06:38 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:**	C-NR1-S-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 9:50:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B** QC Batch: **R158407**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 04:44 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211119B** QC Batch: **90357**				PrepDate:	**11/19/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 06:55 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:**	C-NR3-D-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 10:05:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B**	QC Batch: **R158407**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 05:03 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**			PrepDate:	**11/19/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 07:01 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:**	C-MAR-D-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 8:05:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B** QC Batch: **R158407**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 05:22 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211119B** QC Batch: **90357**				PrepDate:	**11/19/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 07:07 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:**	C-MAR-S-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 8:15:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B** QC Batch: **R158407**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 06:00 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211119B** QC Batch: **90357**				PrepDate: **11/19/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 07:13 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:**	C-NR3-S-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 10:25:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B** QC Batch: **R158407**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 06:28 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211119B** QC Batch: **90357**				PrepDate:	**11/19/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 07:19 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:**	R-19-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 8:30:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B** QC Batch: **R158407**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 06:47 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211119B** QC Batch: **90357**				PrepDate:	**11/19/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 07:25 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	**Client Sample ID:**	RRB-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 8:45:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B** QC Batch: **R158407**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 07:06 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211119B** QC Batch: **90357**				PrepDate: **11/19/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 07:30 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	**Client Sample ID:**	MW-914-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 8:55:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B** QC Batch: **R158407**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 07:44 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211119B** QC Batch: **90357**				PrepDate: **11/19/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 07:36 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:**	MW-912-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 9:30:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B** QC Batch: **R158407**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 08:03 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211119B** QC Batch: **90357**				PrepDate: **11/19/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 07:42 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:**	C-NR4-D-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 10:40:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B** QC Batch: **R158407**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 08:22 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211119B** QC Batch: **90357**				PrepDate:	**11/19/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 07:48 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:**	MW-913-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 10:15:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211119B** QC Batch: **R158407**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/19/2021 08:41 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211119B** QC Batch: **90357**				PrepDate: **11/19/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/19/2021 08:06 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: N048038
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R158407	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407		
Client ID:	LCSW	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441209		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.027	0.20	5.000	0	101	90	110						

Sample ID	MB-R158407	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407		
Client ID:	PBW	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441210		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	N048038-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407		
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441212		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.040	0.20	1.000	0	104	90	110						

Sample ID	N048038-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407		
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441213		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.030	0.20	1.000	0	103	90	110	1.040	0.966	20			

Sample ID	N048038-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407		
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441215		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.021	0.20	1.000	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: N048038
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048038-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.051	0.20	1.000	0	105	90	110				

Sample ID	N048038-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441221

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	0	102	90	110				

Sample ID	N048038-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441223

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.023	0.20	1.000	0	102	90	110				

Sample ID	N048038-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441225

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Sample ID	N048038-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441227

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.052	0.20	1.000	0	105	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: N048038
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048038-008ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441231

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

Sample ID	N048038-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441232

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0	104	90	110				

Sample ID	N048038-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441234

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.035	0.20	1.000	0	103	90	110				

Sample ID	N048038-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441236

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.036	0.20	1.000	0	104	90	110				

Sample ID	N048038-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0	109	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: N048038
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048038-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441242

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID	N048038-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441244

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075	0.20	1.000	0	107	90	110				

Sample ID	N048038-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441246

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.054	0.20	1.000	0	105	90	110				

Sample ID	N048038-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158407
Client ID:	ZZZZZZ	Batch ID:	R158407	TestNo:	EPA 218.6			Analysis Date:	11/19/2021	SeqNo:	4441248

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.051	0.20	1.000	0	105	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: N048038
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90357	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/19/2021	RunNo:	158403
Client ID:	PBW	Batch ID:	90357	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/19/2021	SeqNo:	4440994

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

Sample ID	LCS-90357	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/19/2021	RunNo:	158403
Client ID:	LCSW	Batch ID:	90357	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/19/2021	SeqNo:	4440995

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.116	1.0	10.00	0	101	85	115				

Sample ID	N048038-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/19/2021	RunNo:	158403
Client ID:	ZZZZZZ	Batch ID:	90357	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/19/2021	SeqNo:	4440999

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.307	1.0	10.00	0	93.1	75	125				

Sample ID	N048038-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/19/2021	RunNo:	158403
Client ID:	ZZZZZZ	Batch ID:	90357	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/19/2021	SeqNo:	4441000

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.268	1.0	10.00	0	92.7	75	125	9.307	0.421	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:**	C-CON-D-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 9:10:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-001		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211119B** QC Batch: **90357** PrepDate: **11/19/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.5	0.050	0.10		µg/L	1	11/19/2021 05:56 PM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 05:56 PM
Molybdenum	4.5	0.12	0.50		µg/L	1	11/19/2021 05:56 PM
Selenium	1.5	0.044	0.50		µg/L	1	11/19/2021 05:56 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:**	C-CON-S-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 9:20:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**				PrepDate:	**11/19/2021**	Analyst: **CEI**
Arsenic	3.0	0.050	0.10		µg/L	1	11/19/2021 06:26 PM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 06:26 PM
Molybdenum	4.4	0.12	0.50		µg/L	1	11/19/2021 06:26 PM
Selenium	1.5	0.044	0.50		µg/L	1	11/19/2021 06:26 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:**	C-NR4-S-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 10:50:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**				PrepDate:	**11/19/2021**	Analyst: **CEI**
Arsenic	3.1	0.050	0.10		µg/L	1	11/19/2021 06:32 PM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 06:32 PM
Molybdenum	4.4	0.12	0.50		µg/L	1	11/19/2021 06:32 PM
Selenium	2.0	0.044	0.50		µg/L	1	11/19/2021 06:32 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:**	C-NR1-D-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 9:40:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**			PrepDate:	**11/19/2021**		Analyst: **CEI**
Arsenic	3.3	0.050	0.10		µg/L	1	11/19/2021 06:38 PM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 06:38 PM
Molybdenum	4.5	0.12	0.50		µg/L	1	11/19/2021 06:38 PM
Selenium	1.6	0.044	0.50		µg/L	1	11/19/2021 06:38 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
Lab Order: N048038
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048038-005

Client Sample ID: C-NR1-S-Q421
Collection Date: 11/18/2021 9:50:00 AM
Matrix: SURFACE WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**			PrepDate:	**11/19/2021**		Analyst: **CEI**
Arsenic	3.1	0.050	0.10		µg/L	1	11/19/2021 06:55 PM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 06:55 PM
Molybdenum	4.4	0.12	0.50		µg/L	1	11/19/2021 06:55 PM
Selenium	2.0	0.044	0.50		µg/L	1	11/19/2021 06:55 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:**	C-NR3-D-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 10:05:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**			PrepDate:	**11/19/2021**		Analyst: **CEI**
Arsenic	3.2	0.050	0.10		µg/L	1	11/19/2021 07:01 PM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 07:01 PM
Molybdenum	4.6	0.12	0.50		µg/L	1	11/19/2021 07:01 PM
Selenium	1.7	0.044	0.50		µg/L	1	11/19/2021 07:01 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:**	C-MAR-D-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 8:05:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**			PrepDate:	**11/19/2021**		Analyst: **CEI**
Arsenic	3.2	0.050	0.10		µg/L	1	11/19/2021 07:07 PM
Manganese	4.7	0.026	0.50		µg/L	1	11/19/2021 07:07 PM
Molybdenum	4.5	0.12	0.50		µg/L	1	11/19/2021 07:07 PM
Selenium	1.8	0.044	0.50		µg/L	1	11/19/2021 07:07 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:**	C-MAR-S-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 8:15:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**			PrepDate:	**11/19/2021**		Analyst: **CEI**
Arsenic	3.2	0.050	0.10		µg/L	1	11/19/2021 07:13 PM
Manganese	5.0	0.026	0.50		µg/L	1	11/19/2021 07:13 PM
Molybdenum	4.6	0.12	0.50		µg/L	1	11/19/2021 07:13 PM
Selenium	1.6	0.044	0.50		µg/L	1	11/23/2021 02:07 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
Lab Order: N048038
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048038-009

Client Sample ID: C-NR3-S-Q421
Collection Date: 11/18/2021 10:25:00 AM
Matrix: SURFACE WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**			PrepDate:	**11/19/2021**		Analyst: **CEI**
Arsenic	3.2	0.050	0.10		µg/L	1	11/19/2021 07:19 PM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 07:19 PM
Molybdenum	4.5	0.12	0.50		µg/L	1	11/19/2021 07:19 PM
Selenium	1.8	0.044	0.50		µg/L	1	11/23/2021 02:13 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:**	R-19-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 8:30:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**				PrepDate:	**11/19/2021**	Analyst: **CEI**
Arsenic	3.1	0.050	0.10		µg/L	1	11/19/2021 07:25 PM
Manganese	0.56	0.026	0.50		µg/L	1	11/19/2021 07:25 PM
Molybdenum	4.4	0.12	0.50		µg/L	1	11/19/2021 07:25 PM
Selenium	1.9	0.044	0.50		µg/L	1	11/23/2021 02:19 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:**	RRB-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 8:45:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**				PrepDate:	**11/19/2021**	Analyst: **CEI**
Arsenic	2.8	0.050	0.10		µg/L	1	11/19/2021 07:30 PM
Manganese	24	0.026	0.50		µg/L	1	11/19/2021 07:30 PM
Molybdenum	4.5	0.12	0.50		µg/L	1	11/19/2021 07:30 PM
Selenium	1.6	0.044	0.50		µg/L	1	11/19/2021 07:30 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
Lab Order: N048038
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048038-012

Client Sample ID: MW-914-Q421
Collection Date: 11/18/2021 8:55:00 AM
Matrix: SURFACE WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**			PrepDate:	**11/19/2021**		Analyst: **CEI**
Arsenic	2.9	0.050	0.10		µg/L	1	11/19/2021 07:36 PM
Manganese	25	0.026	0.50		µg/L	1	11/19/2021 07:36 PM
Molybdenum	4.4	0.12	0.50		µg/L	1	11/19/2021 07:36 PM
Selenium	1.5	0.044	0.50		µg/L	1	11/23/2021 02:25 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
Lab Order: N048038
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048038-013

Client Sample ID: MW-912-Q421
Collection Date: 11/18/2021 9:30:00 AM
Matrix: SURFACE WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**			PrepDate:	**11/19/2021**		Analyst: **CEI**
Arsenic	3.2	0.050	0.10		µg/L	1	11/19/2021 07:42 PM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 07:42 PM
Molybdenum	4.5	0.12	0.50		µg/L	1	11/19/2021 07:42 PM
Selenium	2.0	0.044	0.50		µg/L	1	11/23/2021 02:31 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
Lab Order: N048038
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048038-014

Client Sample ID: C-NR4-D-Q421
Collection Date: 11/18/2021 10:40:00 AM
Matrix: SURFACE WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**			PrepDate:	**11/19/2021**		Analyst: **CEI**
Arsenic	3.2	0.050	0.10		µg/L	1	11/19/2021 07:48 PM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 07:48 PM
Molybdenum	4.7	0.12	0.50		µg/L	1	11/19/2021 07:48 PM
Selenium	1.8	0.044	0.50		µg/L	1	11/19/2021 07:48 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:**	MW-913-Q421
Lab Order:	N048038	**Collection Date:**	11/18/2021 10:15:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	SURFACE WATER
Lab ID:	N048038-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211119B**	QC Batch: **90357**			PrepDate:	**11/19/2021**		Analyst: **CEI**
Arsenic	3.1	0.050	0.10		µg/L	1	11/19/2021 08:06 PM
Manganese	ND	0.026	0.50		µg/L	1	11/19/2021 08:06 PM
Molybdenum	4.4	0.12	0.50		µg/L	1	11/19/2021 08:06 PM
Selenium	1.7	0.044	0.50		µg/L	1	11/19/2021 08:06 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: N048038
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90357**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **11/19/2021**	RunNo: **158403**
Client ID: **PBW**	Batch ID: **90357**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/19/2021**	SeqNo: **4441048**

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

Sample ID **LCS-90357**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **11/19/2021**	RunNo: **158403**
Client ID: **LCSW**	Batch ID: **90357**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/19/2021**	SeqNo: **4441049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.897	0.10	10.00	0	109	85	115				
Manganese	100.499	0.50	100.0	0	100	85	115				
Molybdenum	10.070	0.50	10.00	0	101	85	115				
Selenium	10.112	0.50	10.00	0	101	85	115				

Sample ID **N048038-001C-MS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **11/19/2021**	RunNo: **158403**
Client ID: **ZZZZZZ**	Batch ID: **90357**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/19/2021**	SeqNo: **4441053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	15.314	0.10	10.00	2.484	128	75	125				S
Manganese	94.094	0.50	100.0	0.2828	93.8	75	125				
Molybdenum	14.710	0.50	10.00	4.467	102	75	125				
Selenium	12.221	0.50	10.00	1.482	107	75	125				

Sample ID **N048038-001C-MSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **11/19/2021**	RunNo: **158403**
Client ID: **ZZZZZZ**	Batch ID: **90357**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/19/2021**	SeqNo: **4441054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	16.084	0.10	10.00	2.484	136	75	125	15.31	4.90	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: N048038
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048038-001C-MSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	11/19/2021	RunNo:	158403
Client ID:	ZZZZZZ	Batch ID:	90357	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/19/2021	SeqNo:	4441054

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.586	0.50	100.0	0.2828	93.3	75	125	94.09	0.542	20	
Molybdenum	14.877	0.50	10.00	4.467	104	75	125	14.71	1.13	20	
Selenium	12.363	0.50	10.00	1.482	109	75	125	12.22	1.16	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: N048038
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	**N048038-001C-PS**	SampType: **PS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date:	RunNo: **158403**
Client ID:	**ZZZZZZ**	Batch ID: **90357**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/19/2021**	SeqNo: **4441052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	15.029	0.10	10.00	2.484	125	80	120				S
Manganese	92.854	0.50	100.0	0.2828	92.6	80	120				
Molybdenum	14.897	0.50	10.00	4.467	104	80	120				
Selenium	12.169	0.50	10.00	1.482	107	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		

N048038

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ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample 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.m.bush@arcadis.com	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace ✓
Submitted By: Nara Tey		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact ✓
Title: Project manager	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 11/18/21	Sampled By: Nara Tey		Global ID:	Regulatory	5. IR number 3
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			Specify State:	6. Method of Cooling: ICE
Project Name: PG&E Topock - RCM	Signature: Date: 11/18/21				Sample Temp: 2.1, 1.8
Project Number: 30110373.4Q21GW					Courier: ASSET
					Tracking No.:

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, Molybdenum, Selenium (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048038-01	C-CON-D-Q421	11/18/21	9:10		X	X	X	X	E	3	P	BNS	
2	-02	C-CON-S-Q421	11/18/21	9:20		X	X	X	X	E	3	P	BNS	
3	-03	C-NR4-S-Q421	11/18/21	10:50		X	X	X	X	E	3	P	BNS	
4	-04	C-NR1-D-Q421	11/18/21	9:40		X	X	X	X	E	3	P	BNS	
5	-05	C-NR1-S-Q421	11/18/21	9:50		X	X	X	X	E	3	P	BNS	
	-06	C-NR3-D-Q421	11/18/21	10:05		X	X	X	X	E	3	P	BNS	
7	-07	C-MAR-D-Q421	11/18/21	8:05		X	X	X	X	E	3	P	BNS	
8	-08	C-MAR-S-Q421	11/18/21	8:15		X	X	X	X	E	3	P	BNS	
9	-09	C-NR3-S-Q341	11/18/21	10:25		X	X	X	X	E	3	P	BNS	
10	-10	R-19-Q421	11/18/21	8:30		X	X	X	X	E	3	P	BNS	
11	-11	RRB-Q421	11/18/21	8:45		X	X	X	X	E	3	P	BNS	
12	-12	MW-914-Q421	11/18/21	8:55		X	X	X	X	E	3	P	BNS	
13	-13	MW-912-Q421	11/18/21	9:30		X	X	X	X	E	3	P	BNS	
14	-14	C-NR4-D-Q421	11/18/21	10:40		X	X	X	X	E	3	P	BNS	

Reliquished by (Signature and Printed Name): Nara Tey Date/Time: 11/18/21 1540

Reliquished by (Signature and Printed Name): MARCAVEY Date/Time: 11/18/21 @1540

Reliquished by (Signature and Printed Name): REL/REC; Date/Time: 11/18/21 @ 2314

Reliquished by (Signature and Printed Name): Date/Time:

Reliquished by (Signature and Printed Name): Date/Time:

Reliquished 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
X	E	= Routine 5-7 Workdays

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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:	B	(NH4)2SO4/NH4OH	

Container Type:

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

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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 2 of 2

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement		QA/QC		Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD		RTNE		Y N
Address: Roseville, CA 95661	Email: [redacted] daniel.moore@arcadis.com	Address:	Geotracker		RWQCB	✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec		CalTrans		2. Headspace
Submitted By: Nana Tay		Phone: 949-727-1400, ext 200 Fax:	Others	✓	LEVEL III		3. Container Intact ✓
Title: project Manager	Phone: 916-786-3302 Fax:		Specify: RWQCB		LEVEL IV		4. Seal Present
Signature: Date: 11/18/21	Sampled By: Nana Tay		Global ID:		Regulatory		5. IR number 3
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				Specify State:		6. Method of Cooling: ICE
Project Name: PG&E Topock - RCM	Signature: Date: 11/18/21						Sample Temp: 21, 1.8
Project Number: 30110373.4Q21GW							Courier: ASSET
							Tracking No.:

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, Molybdenum, Selenium (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048038-15	MW-913-Q421	11/18/21	10:15		X	X	X	X	E	3	P	BNS	
2	-16	AmbientBlank-3-Q421	11/18/21	10:55		X				E	3	P	BNS	Hold
3														
4														
5														
7														
8														
9														
10														
11														
12														
13														
14														

Reliquished by (Signature and Printed Name): Nana Tay Date/Time: 11/18/21 1540
Reliquished by (Signature and Printed Name): NO CAUTION Date/Time: 11/18/21 @1548
Reliquished by (Signature and Printed Name): RELIREC Date/Time: 11/18/21 @ 2314
Reliquished by (Signature and Printed Name): Date/Time:
Reliquished 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
- [x] E = Routine 5-7 Workdays

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

Special Instruction:

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1. All samples will be disposed in 45 days 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:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	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:	11/18/2021	Workorder:	N048038
Rep sample Temp (Deg C):	2.1/1.8	IR Gun ID:	3
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: See Correspondence.

For:

Checklist Completed By: MBC YRJ 11/24/2021

Reviewed By: MBC 11/24/2021

Subject: Re: PG&E Topock - RCM, 30110373.4Q21GW (ASSET Labs No. N048038)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 11/24/2021, 10:48 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "giselle@assetlaboratories.com" <giselle@assetlaboratories.com>, "rustico.aquino@assetlaboratoriesph.com" <rustico.aquino@assetlaboratoriesph.com>

Label ID is correct.

Thanks!
Laura

Get Outlook for iOS

From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Wednesday, November 24, 2021 11:59:37 AM
To: Madsen, Laura <Laura.Madsen@arcadis.com>; Tina Rice <Tina.Rice@critigen.com>
Cc: maryann.balilu@assetlaboratoriesph.com <maryann.balilu@assetlaboratoriesph.com>; giselle@assetlaboratories.com <giselle@assetlaboratories.com>; rustico.aquino@assetlaboratoriesph.com <rustico.aquino@assetlaboratoriesph.com>
Subject: PG&E Topock - RCM, 30110373.4Q21GW (ASSET Labs No. N048038)

Hi Laura,

Please be informed about the following discrepancy for the attached COC:

- Sample 9: ID is C-NR3-S-Q341 on COC and C-NR3-S-Q421 on label

We followed ID on label. Please confirm.

--
Thanks,

Yoandra Rodriguez
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 | F: 702.307.2691
California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436

ASSET LABORATORIES - Serving Clients with Passion and Professionalism

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ASSET Laboratories

WORK ORDER Summary

01-Dec-21

WorkOrder: N048038

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/18/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048038-001A	C-CON-D-Q421	11/18/2021 9:10:00 AM	12/6/2021	Surface Water	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048038-001B			12/6/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-001C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-002A	C-CON-S-Q421	11/18/2021 9:20:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048038-002B			12/6/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-002C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-003A	C-NR4-S-Q421	11/18/2021 10:50:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048038-003B			12/6/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-003C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-004A	C-NR1-D-Q421	11/18/2021 9:40:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048038-004B			12/6/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-004C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-005A	C-NR1-S-Q421	11/18/2021 9:50:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

01-Dec-21

WorkOrder: N048038

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/18/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048038-005B	C-NR1-S-Q421	11/18/2021 9:50:00 AM	12/6/2021	Surface Water	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-005C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-006A	C-NR3-D-Q421	11/18/2021 10:05:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048038-006B			12/6/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-006C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-007A	C-MAR-D-Q421	11/18/2021 8:05:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048038-007B			12/6/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-007C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-008A	C-MAR-S-Q421	11/18/2021 8:15:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048038-008B			12/6/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-008C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-009A	C-NR3-S-Q421	11/18/2021 10:25:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

01-Dec-21

WorkOrder: N048038

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/18/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048038-009B	C-NR3-S-Q421	11/18/2021 10:25:00 AM	12/6/2021	Surface Water	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-009C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-010A	R-19-Q421	11/18/2021 8:30:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048038-010B			12/6/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-010C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-011A	RRB-Q421	11/18/2021 8:45:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048038-011B			12/6/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-011C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-012A	MW-914-Q421	11/18/2021 8:55:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048038-012B			12/6/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-012C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-013A	MW-912-Q421	11/18/2021 9:30:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

01-Dec-21

WorkOrder: N048038

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/18/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048038-013B	MW-912-Q421	11/18/2021 9:30:00 AM	12/6/2021	Surface Water	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-013C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-014A	C-NR4-D-Q421	11/18/2021 10:40:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048038-014B			12/6/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-014C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-015A	MW-913-Q421	11/18/2021 10:15:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048038-015B			12/6/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048038-015C			12/6/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/6/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048038-016A	AmbientBlank-3-Q421	11/18/2021 10:55:00 AM	12/6/2021		EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N048038-017A	FOLDER	12/6/2021	12/6/2021		Folder	Folder	☐	☐	☐	LAB
			12/6/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/6/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Nara Tep

01-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: SM4500-NO3F		
N048038-001B / C-CON-D-Q421	Surface Water	11/18/2021 9:10:00 AM	8OZP	1		
N048038-002B / C-CON-S-Q421	Surface Water	11/18/2021 9:20:00 AM	8OZP	1		
N048038-003B / C-NR4-S-Q421	Surface Water	11/18/2021 10:50:00 AM	8OZP	1		
N048038-004B / C-NR1-D-Q421	Surface Water	11/18/2021 9:40:00 AM	8OZP	1		
N048038-005B / C-NR1-S-Q421	Surface Water	11/18/2021 9:50:00 AM	8OZP	1		
N048038-006B / C-NR3-D-Q421	Surface Water	11/18/2021 10:05:00 AM	8OZP	1		
N048038-007B / C-MAR-D-Q421	Surface Water	11/18/2021 8:05:00 AM	8OZP	1		
N048038-008B / C-MAR-S-Q421	Surface Water	11/18/2021 8:15:00 AM	8OZP	1		
N048038-009B / C-NR3-S-Q421	Surface Water	11/18/2021 10:25:00 AM	8OZP	1		
N048038-010B / R-19-Q421	Surface Water	11/18/2021 8:30:00 AM	8OZP	1		
N048038-011B / RRB-Q421	Surface Water	11/18/2021 8:45:00 AM	8OZP	1		
N048038-012B / MW-914-Q421	Surface Water	11/18/2021 8:55:00 AM	8OZP	1		
N048038-013B / MW-912-Q421	Surface Water	11/18/2021 9:30:00 AM	8OZP	1		
N048038-014B / C-NR4-D-Q421	Surface Water	11/18/2021 10:40:00 AM	8OZP	1		
N048038-015B / MW-913-Q421	Surface Water	11/18/2021 10:15:00 AM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48038A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555396934

		Date/Time			Date/Time
Relinquished by:	GGarcia	12/1/2021 16:30	**Received by:**		
Relinquished by:			**Received by:**		

December 10, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048137

RE: PG&E Topock - RCM, 30110373.4Q21GW

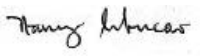
Attention: Dan Bush

Enclosed are the results for sample(s) received on November 29, 2021 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,



Nancy Sibucao
Laboratory Director

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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:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (4.2 ug/L) and hexavalent chromium (3.4 ug/L) for sample N048137-002 (MW-84-095-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (4.2 ug/L) and hexavalent chromium (3.4 ug/L) for sample N048137-002 (MW-84-095-Q421) 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 4.6 and 3.3 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *10-Dec-21*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048137
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048137-001A	MW-84-057-Q421	Groundwater	11/29/2021 3:22:00 PM	11/29/2021	12/10/2021
N048137-001B	MW-84-057-Q421	Groundwater	11/29/2021 3:22:00 PM	11/29/2021	12/10/2021
N048137-001C	MW-84-057-Q421	Groundwater	11/29/2021 3:22:00 PM	11/29/2021	12/10/2021
N048137-002A	MW-84-095-Q421	Groundwater	11/29/2021 2:37:00 PM	11/29/2021	12/10/2021
N048137-002B	MW-84-095-Q421	Groundwater	11/29/2021 2:37:00 PM	11/29/2021	12/10/2021
N048137-002C	MW-84-095-Q421	Groundwater	11/29/2021 2:37:00 PM	11/29/2021	12/10/2021
N048137-003A	MW-84-132-Q421	Groundwater	11/29/2021 2:03:00 PM	11/29/2021	12/10/2021
N048137-003B	MW-84-132-Q421	Groundwater	11/29/2021 2:03:00 PM	11/29/2021	12/10/2021
N048137-003C	MW-84-132-Q421	Groundwater	11/29/2021 2:03:00 PM	11/29/2021	12/10/2021
N048137-004A	MW-84-193-Q421	Groundwater	11/29/2021 1:23:00 PM	11/29/2021	12/10/2021
N048137-004B	MW-84-193-Q421	Groundwater	11/29/2021 1:23:00 PM	11/29/2021	12/10/2021
N048137-004C	MW-84-193-Q421	Groundwater	11/29/2021 1:23:00 PM	11/29/2021	12/10/2021
N048137-005A	EB-715-Q421	Groundwater	11/29/2021 3:45:00 PM	11/29/2021	12/10/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-84-057-Q421
Lab Order:	N048137	**Collection Date:**	11/29/2021 3:22:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048137-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211130A** QC Batch: **R158538**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	27	0.13	1.0		µg/L	5	11/30/2021 11:16 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211130C** QC Batch: **90433**				PrepDate:	**11/30/2021**		Analyst: **CEI**
Chromium	27	0.035	1.0		µg/L	1	11/30/2021 10:45 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-84-095-Q421
Lab Order:	N048137	**Collection Date:**	11/29/2021 2:37:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048137-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211130A** QC Batch: **R158538**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	3.4	0.025	0.20		µg/L	1	11/30/2021 11:36 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211130C** QC Batch: **90433**				PrepDate:	**11/30/2021**		Analyst: **CEI**
Chromium	4.2	0.035	1.0		µg/L	1	11/30/2021 10:51 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:**	MW-84-132-Q421
Lab Order:	N048137	**Collection Date:**	11/29/2021 2:03:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048137-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211130A** QC Batch: **R158538**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	2.4	0.025	0.20		µg/L	1	11/30/2021 11:55 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211130C** QC Batch: **90433**				PrepDate:	**11/30/2021**		Analyst: **CEI**
Chromium	2.6	0.035	1.0		µg/L	1	11/30/2021 10:57 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:**	MW-84-193-Q421
Lab Order:	N048137	**Collection Date:**	11/29/2021 1:23:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048137-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211130A** QC Batch: **R158538**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	14	0.050	0.40		µg/L	2	11/30/2021 01:11 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211130C** QC Batch: **90433**				PrepDate:	**11/30/2021**		Analyst: **CEI**
Chromium	15	0.035	1.0		µg/L	1	11/30/2021 11:03 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:**	EB-715-Q421
Lab Order:	N048137	**Collection Date:**	11/29/2021 3:45:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048137-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211130A**	QC Batch: **R158538**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/30/2021 12:52 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: N048137
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158538	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	PBW	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446355

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-R158538	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	LCSW	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446356

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.956	0.20	5.000	0	99.1	90	110				

Sample ID	N048137-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446358

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	52.523	1.0	25.00	27.19	101	90	110				

Sample ID	N048137-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446360

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.662	0.20	5.000	3.419	105	90	110				

Sample ID	N048137-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446362

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.626	0.20	5.000	2.375	105	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: N048137
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048137-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158538**
Client ID: **ZZZZZZ** Batch ID: **R158538** TestNo: **EPA 218.6** Analysis Date: **11/30/2021** SeqNo: **4446366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.065	0.20	1.000	0	106	90	110				

Sample ID **N048137-004ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158538**
Client ID: **ZZZZZZ** Batch ID: **R158538** TestNo: **EPA 218.6** Analysis Date: **11/30/2021** SeqNo: **4446368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.746	0.40						13.53	1.59	20	

Sample ID **N048137-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158538**
Client ID: **ZZZZZZ** Batch ID: **R158538** TestNo: **EPA 218.6** Analysis Date: **11/30/2021** SeqNo: **4446369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	23.568	0.40	10.00	13.53	100	90	110				

Sample ID **N048138-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158538**
Client ID: **ZZZZZZ** Batch ID: **R158538** TestNo: **EPA 218.6** Analysis Date: **11/30/2021** SeqNo: **4446371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	65.767	1.0	25.00	41.71	96.2	90	110				

Sample ID **N048138-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158538**
Client ID: **ZZZZZZ** Batch ID: **R158538** TestNo: **EPA 218.6** Analysis Date: **11/30/2021** SeqNo: **4446372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	65.989	1.0	25.00	41.71	97.1	90	110	65.77	0.336	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: N048137
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048138-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446376

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.028	0.20	1.000	0	103	90	110				

Sample ID	N048138-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446380

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.034	0.20	1.000	0	103	90	110				

Sample ID	N048138-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446382

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.957	1.0	5.000	10.01	98.9	90	110				

Sample ID	N048138-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446384

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.964	1.0	5.000	0	99.3	90	110				

Sample ID	N048138-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446386

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.866	1.0	5.000	0	97.3	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: N048137
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048138-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158538**
Client ID: **ZZZZZZ**	Batch ID: **R158538**	TestNo: **EPA 218.6**		Analysis Date: **11/30/2021**	SeqNo: **4446388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.062	1.0	5.000	0	101	90	110				

Sample ID **N048138-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158538**
Client ID: **ZZZZZZ**	Batch ID: **R158538**	TestNo: **EPA 218.6**		Analysis Date: **11/30/2021**	SeqNo: **4446392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.930	1.0	5.000	0	98.6	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: N048137
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90433	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/30/2021	RunNo:	158548
Client ID:	PBW	Batch ID:	90433	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/30/2021	SeqNo:	4447210

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

Sample ID	LCS-90433	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/30/2021	RunNo:	158548
Client ID:	LCSW	Batch ID:	90433	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/30/2021	SeqNo:	4447211

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.129	1.0	10.00	0	101	85	115				

Sample ID	N048138-001BMS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/30/2021	RunNo:	158548
Client ID:	ZZZZZZ	Batch ID:	90433	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/30/2021	SeqNo:	4447215

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	47.948	1.0	10.00	39.11	88.4	75	125				

Sample ID	N048138-001BMSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/30/2021	RunNo:	158548
Client ID:	ZZZZZZ	Batch ID:	90433	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/30/2021	SeqNo:	4447216

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	47.763	1.0	10.00	39.11	86.5	75	125	47.95	0.387	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:**	MW-84-057-Q421
Lab Order:	N048137	**Collection Date:**	11/29/2021 3:22:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048137-001		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211130C** QC Batch: **90433** PrepDate: **11/30/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	0.90	0.050	0.10		µg/L	1	11/30/2021 10:45 PM
Manganese	1.8	0.026	0.50		µg/L	1	11/30/2021 10:45 PM
Molybdenum	12	0.12	0.50		µg/L	1	11/30/2021 10:45 PM
Selenium	3.7	0.044	0.50		µg/L	1	11/30/2021 10:45 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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-84-095-Q421
Lab Order:	N048137	**Collection Date:**	11/29/2021 2:37:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048137-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211130C**	QC Batch: **90433**			PrepDate:	**11/30/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	11/30/2021 10:51 PM
Manganese	5.8	0.026	0.50		µg/L	1	11/30/2021 10:51 PM
Molybdenum	5.4	0.12	0.50		µg/L	1	11/30/2021 10:51 PM
Selenium	0.86	0.044	0.50		µg/L	1	11/30/2021 10:51 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:**	MW-84-132-Q421
Lab Order:	N048137	**Collection Date:**	11/29/2021 2:03:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048137-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211130C**	QC Batch: **90433**			PrepDate:	**11/30/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	11/30/2021 10:57 PM
Manganese	0.74	0.026	0.50		µg/L	1	11/30/2021 10:57 PM
Molybdenum	16	0.12	0.50		µg/L	1	11/30/2021 10:57 PM
Selenium	1.1	0.044	0.50		µg/L	1	11/30/2021 10:57 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:**	MW-84-193-Q421
Lab Order:	N048137	**Collection Date:**	11/29/2021 1:23:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048137-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211130C**	QC Batch: **90433**			PrepDate:	**11/30/2021**		Analyst: **CEI**
Arsenic	2.2	0.050	0.10		µg/L	1	11/30/2021 11:03 PM
Manganese	82	0.026	0.50		µg/L	1	11/30/2021 11:03 PM
Molybdenum	58	0.12	0.50		µg/L	1	11/30/2021 11:03 PM
Selenium	1.1	0.044	0.50		µg/L	1	11/30/2021 11:03 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: N048137
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90433**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **11/30/2021**	RunNo: **158548**
Client ID: **PBW**	Batch ID: **90433**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/30/2021**	SeqNo: **4447278**

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

Sample ID **LCS-90433**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **11/30/2021**	RunNo: **158548**
Client ID: **LCSW**	Batch ID: **90433**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/30/2021**	SeqNo: **4447279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.156	0.10	10.00	0	102	85	115				
Manganese	98.689	0.50	100.0	0	98.7	85	115				
Molybdenum	9.986	0.50	10.00	0	99.9	85	115				
Selenium	10.024	0.50	10.00	0	100	85	115				

Sample ID **N048138-001BMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **11/30/2021**	RunNo: **158548**
Client ID: **ZZZZZZ**	Batch ID: **90433**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/30/2021**	SeqNo: **4447283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.793	0.10	10.00	0.7394	101	75	125				
Manganese	106.440	0.50	100.0	17.05	89.4	75	125				
Molybdenum	20.916	0.50	10.00	10.04	109	75	125				
Selenium	11.022	0.50	10.00	2.108	89.1	75	125				

Sample ID **N048138-001BMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **11/30/2021**	RunNo: **158548**
Client ID: **ZZZZZZ**	Batch ID: **90433**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/30/2021**	SeqNo: **4447284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.869	0.10	10.00	0.7394	101	75	125	10.79	0.696	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: N048137
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048138-001BMSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	11/30/2021	RunNo:	158548
Client ID:	ZZZZZZ	Batch ID:	90433	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/30/2021	SeqNo:	4447284

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	106.765	0.50	100.0	17.05	89.7	75	125	106.4	0.305	20	
Molybdenum	21.068	0.50	10.00	10.04	110	75	125	20.92	0.723	20	
Selenium	11.297	0.50	10.00	2.108	91.9	75	125	11.02	2.47	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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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P: 562.219.7435 F:562.219.7436
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N048137

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 ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: [illegible]	Address:	Sample Receipt Condition: 1. Chilled ✓; 2. Headspace; 3. Container Intact ✓; 4. Seal Present ✓; 5. IR number 3; 6. Method of Cooling: ICE
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivot.com P.O.#	Sample Temp: 3.3°C
Submitted By: Jonas Deada	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Courier: ASSET
Title: Fieldtech	Sampled By: Nam Tep		Tracking No.:
Signature: Date: 11/29/21	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	Matrix: Ground X; Sediment; Potable; Soil; NPDES; Other Solid; Surface	
I hereby authorize ASSET Labs to perform the tests indicated below.			
Project Name: PG&E Topock - RCM	Signature: Date: 11/29/21		
Project Number: 30110373.4Q21GW			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, Molybdenum, Selenium (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1														
2														
3	N048137-01	MW-84-057-Q421	11/29/21	15:22		X	X	X	X					
4	-02	MW-84-095-Q421	11/29/21	14:37		X	X	X	X	E	3	P	BNS	
5	-03	MW-84-132-Q421	11/29/21	14:03		X	X	X	X	E	3	P	BNS	
	-04	MW-84-193-Q421	11/29/21	13:23		X	X	X	X	E	3	P	BNS	
7										E	3	P	BNS	
8	-05	EB-715-Q421	11/29/21	15:45		X				E	1	P	BNS	
9														
10														
11														
12														
13														
14														

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Nam Tep	11/29/21 16:55	Jonas Deada	11/29/21 16:55
Jonas Deada	11/29/21 19:20	Jonas Deada	11/29/21 19:20

Turn Around Time (TAT)

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

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

Special Instruction:

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: B (NH4)2SO4/NH4OH

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

Terms
1. All samples will be disposed in 45 days 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

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:	11/29/2021	Workorder:	N048137
Rep sample Temp (Deg C):	3.3	IR Gun ID:	3
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 By: YR YRJ 11/30/2021

Reviewed By: MBC 11/30/2021

ASSET Laboratories

WORK ORDER Summary

01-Dec-21

WorkOrder: N048137

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/29/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048137-001A	MW-84-057-Q421	11/29/2021 3:22:00 PM	12/13/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048137-001B			12/13/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048137-001C			12/13/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/13/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/13/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048137-002A	MW-84-095-Q421	11/29/2021 2:37:00 PM	12/13/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048137-002B			12/13/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048137-002C			12/13/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/13/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/13/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048137-003A	MW-84-132-Q421	11/29/2021 2:03:00 PM	12/13/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048137-003B			12/13/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048137-003C			12/13/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/13/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/13/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048137-004A	MW-84-193-Q421	11/29/2021 1:23:00 PM	12/13/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048137-004B			12/13/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048137-004C			12/13/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/13/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/13/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048137-005A	EB-715-Q421	11/29/2021 3:45:00 PM	12/13/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

01-Dec-21

WorkOrder: N048137

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/29/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048137-006A	FOLDER	12/13/2021	12/13/2021		Folder	Folder	☐	☐	☐	LAB
			12/13/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/13/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: NARA TEP

01-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NO3F		
N048137-001B / MW-84-057-Q421	Groundwater	11/29/2021 3:22:00 PM	8OZP	1		
N048137-002B / MW-84-095-Q421	Groundwater	11/29/2021 2:37:00 PM	8OZP	1		
N048137-003B / MW-84-132-Q421	Groundwater	11/29/2021 2:03:00 PM	8OZP	1		
N048137-004B / MW-84-193-Q421	Groundwater	11/29/2021 1:23:00 PM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48137A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555396934

		Date/Time			Date/Time
Relinquished by:	GGarcia	12/1/2021 16:30	**Received by:**		
Relinquished by:			**Received by:**		

December 10, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048138

RE: PG&E Topock - PCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on November 29, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET Laboratories - Las Vegas.

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 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

ASSET Laboratories

Date: *10-Dec-21*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048138
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048138-001A	MW-75-033-Q421	Groundwater	11/29/2021 3:52:00 PM	11/29/2021	12/10/2021
N048138-001B	MW-75-033-Q421	Groundwater	11/29/2021 3:52:00 PM	11/29/2021	12/10/2021
N048138-002A	MW-75-117-Q421	Groundwater	11/29/2021 3:37:00 PM	11/29/2021	12/10/2021
N048138-002B	MW-75-117-Q421	Groundwater	11/29/2021 3:37:00 PM	11/29/2021	12/10/2021
N048138-003A	MW-75-202-Q421	Groundwater	11/29/2021 2:46:00 PM	11/29/2021	12/10/2021
N048138-003B	MW-75-202-Q421	Groundwater	11/29/2021 2:46:00 PM	11/29/2021	12/10/2021
N048138-004A	MW-936-Q421	Groundwater	11/29/2021 2:56:00 PM	11/29/2021	12/10/2021
N048138-004B	MW-936-Q421	Groundwater	11/29/2021 2:56:00 PM	11/29/2021	12/10/2021
N048138-005A	MW-75-267-Q421	Groundwater	11/29/2021 2:11:00 PM	11/29/2021	12/10/2021
N048138-005B	MW-75-267-Q421	Groundwater	11/29/2021 2:11:00 PM	11/29/2021	12/10/2021
N048138-006A	MW-75-337-Q421	Groundwater	11/29/2021 1:20:00 PM	11/29/2021	12/10/2021
N048138-006B	MW-75-337-Q421	Groundwater	11/29/2021 1:20:00 PM	11/29/2021	12/10/2021
N048138-007A	EB-716-Q421	Groundwater	11/29/2021 4:05:00 PM	11/29/2021	12/10/2021
N048138-008A	EB-717-Q421	Groundwater	11/29/2021 4:15:00 PM	11/29/2021	12/10/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-75-033-Q421
Lab Order:	N048138	**Collection Date:**	11/29/2021 3:52:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048138-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211130A** QC Batch: **R158538**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	42	0.13	1.0		µg/L	5	11/30/2021 01:39 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211130C** QC Batch: **90433**				PrepDate:	**11/30/2021**		Analyst: **CEI**
Chromium	39	0.035	1.0		µg/L	1	11/30/2021 09:10 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:**	MW-75-117-Q421
Lab Order:	N048138	**Collection Date:**	11/29/2021 3:37:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048138-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211130A** QC Batch: **R158538**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	10	0.13	1.0		µg/L	5	11/30/2021 05:02 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211130C** QC Batch: **90433**				PrepDate:	**11/30/2021**		Analyst: **CEI**
Chromium	10	0.035	1.0		µg/L	1	11/30/2021 09:39 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:**	MW-75-202-Q421
Lab Order:	N048138	**Collection Date:**	11/29/2021 2:46:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048138-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211130A**	QC Batch: **R158538**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	11/30/2021 05:21 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211130C**	QC Batch: **90433**			PrepDate:	**11/30/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/30/2021 09:45 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-936-Q421
Lab Order:	N048138	**Collection Date:**	11/29/2021 2:56:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048138-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211130A** QC Batch: **R158538**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	11/30/2021 05:40 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211130C** QC Batch: **90433**				PrepDate:	**11/30/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/30/2021 09:51 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:**	MW-75-267-Q421
Lab Order:	N048138	**Collection Date:**	11/29/2021 2:11:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048138-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211130A** QC Batch: **R158538**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	11/30/2021 05:59 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211130C** QC Batch: **90433**				PrepDate:	**11/30/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/30/2021 10:09 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:**	MW-75-337-Q421
Lab Order:	N048138	**Collection Date:**	11/29/2021 1:20:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048138-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211130A**	QC Batch: **R158538**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	11/30/2021 06:37 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211130C**	QC Batch: **90433**			PrepDate:	**11/30/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	11/30/2021 10:15 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:**	EB-716-Q421
Lab Order:	N048138	**Collection Date:**	11/29/2021 4:05:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048138-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211130A**	QC Batch: **R158538**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/30/2021 04:06 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:**	EB-717-Q421
Lab Order:	N048138	**Collection Date:**	11/29/2021 4:15:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048138-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211130A**	QC Batch: **R158538**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	11/30/2021 04:43 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: N048138
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158538	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	PBW	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446355

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-R158538	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	LCSW	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446356

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.956	0.20	5.000	0	99.1	90	110				

Sample ID	N048137-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446358

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	52.523	1.0	25.00	27.19	101	90	110				

Sample ID	N048137-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446360

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.662	0.20	5.000	3.419	105	90	110				

Sample ID	N048137-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446362

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.626	0.20	5.000	2.375	105	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: N048138
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048137-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446366

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.065	0.20	1.000	0	106	90	110				

Sample ID	N048137-004ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446368

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.746	0.40						13.53	1.59	20	

Sample ID	N048137-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	23.568	0.40	10.00	13.53	100	90	110				

Sample ID	N048138-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446371

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	65.767	1.0	25.00	41.71	96.2	90	110				

Sample ID	N048138-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446372

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	65.989	1.0	25.00	41.71	97.1	90	110	65.77	0.336	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: N048138
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048138-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158538**
Client ID: **ZZZZZZ**	Batch ID: **R158538**	TestNo: **EPA 218.6**		Analysis Date: **11/30/2021**	SeqNo: **4446376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.028	0.20	1.000	0	103	90	110				

Sample ID **N048138-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158538**
Client ID: **ZZZZZZ**	Batch ID: **R158538**	TestNo: **EPA 218.6**		Analysis Date: **11/30/2021**	SeqNo: **4446380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.034	0.20	1.000	0	103	90	110				

Sample ID **N048138-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158538**
Client ID: **ZZZZZZ**	Batch ID: **R158538**	TestNo: **EPA 218.6**		Analysis Date: **11/30/2021**	SeqNo: **4446382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.957	1.0	5.000	10.01	98.9	90	110				

Sample ID **N048138-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158538**
Client ID: **ZZZZZZ**	Batch ID: **R158538**	TestNo: **EPA 218.6**		Analysis Date: **11/30/2021**	SeqNo: **4446384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.964	1.0	5.000	0	99.3	90	110				

Sample ID **N048138-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158538**
Client ID: **ZZZZZZ**	Batch ID: **R158538**	TestNo: **EPA 218.6**		Analysis Date: **11/30/2021**	SeqNo: **4446386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.866	1.0	5.000	0	97.3	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: N048138
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048138-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446388

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.062	1.0	5.000	0	101	90	110				

Sample ID	N048138-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158538
Client ID:	ZZZZZZ	Batch ID:	R158538	TestNo:	EPA 218.6			Analysis Date:	11/30/2021	SeqNo:	4446392

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.930	1.0	5.000	0	98.6	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: N048138
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90433	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/30/2021	RunNo:	158548
Client ID:	PBW	Batch ID:	90433	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/30/2021	SeqNo:	4447210

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

Sample ID	LCS-90433	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/30/2021	RunNo:	158548
Client ID:	LCSW	Batch ID:	90433	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/30/2021	SeqNo:	4447211

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.129	1.0	10.00	0	101	85	115				

Sample ID	N048138-001BMS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/30/2021	RunNo:	158548
Client ID:	ZZZZZZ	Batch ID:	90433	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/30/2021	SeqNo:	4447215

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	47.948	1.0	10.00	39.11	88.4	75	125				

Sample ID	N048138-001BMSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/30/2021	RunNo:	158548
Client ID:	ZZZZZZ	Batch ID:	90433	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/30/2021	SeqNo:	4447216

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	47.763	1.0	10.00	39.11	86.5	75	125	47.95	0.387	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 SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us: N048138
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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	Sample Receipt Condition	Y N
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	1. Chilled	✓
Address: Roseville, CA 95661	Email: [illegible]	Address:	Geotracker	RWQCB ✓	2. Headspace	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	3. Container Intact	✓
Submitted By: Luke Bryant	Phone: Fax:	Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	4. Seal Present	- ✓
Title: Field Tech	916-786-3302		Specify: RWQCB	LEVEL IV	5. IR number 3	
Signature: Date: 11/29/21	Sampled By: Nana Tay		Global ID:	Regulatory	6. Method of Cooling: ICE	
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			Specify State:	Sample Temp: 3.3 °C	
Project Name: PG&E Topock - PCM	Signature: Date: 11/29/21				Courier:	
Project Number: 30110373.4Q21GW					Tracking No.:	

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	125 mL poly: Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4	500mL poly: Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, Molybdenum, Selenium	500mL poly: Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium,	500mL poly: Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048138-01	MW-75-033-Q421	11/29/21	15:52		X			X		E	2	P	BNS	MS/MSD
2	-02	MW-75-117-Q421	11/29/21	15:37		X			X		E	2	P	BNS	
3	-03	MW-75-202-Q421	11/29/21	14:46		X			X		E	2	P	BNS	
4	-04	MW-936-Q421	11/29/21	14:56		X			X		E	2	P	BNS	
5	-05	MW-75-267-Q421	11/29/21	14:11		X			X		E	2	P	BNS	
	-06	MW-75-337-Q421	11/29/21	13:20		X			X		E	2	P	BNS	
7	-07	EB-716-Q421	11/29/21	16:05		X					E	1	P	BNS	
8	-08	EB-717-Q421	11/29/21	16:15		X					E	1	P	BNS	
9															
10															
11															
12															
13															
14															

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Nana Tay	11/29/21 16:55	Jonas Deada	11/29/21 16:55
Jonas Deada	11/29/21 19:20	Jonas Deada	11/29/21 19:20
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished 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
- [x] E = Routine 5-7 Workdays

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	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:	11/29/2021	Workorder:	N048138
Rep sample Temp (Deg C):	3.3	IR Gun ID:	3
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 By: YR YRJ 11/30/2021

Reviewed By: MBC 11/30/2021

ASSET Laboratories

WORK ORDER Summary

30-Nov-21

WorkOrder: N048138

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/29/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048138-001A	MW-75-033-Q421	11/29/2021 3:52:00 PM	12/13/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☑	☐	WW
N048138-001B			12/13/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/13/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
N048138-002A	MW-75-117-Q421	11/29/2021 3:37:00 PM	12/13/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048138-002B			12/13/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/13/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048138-003A	MW-75-202-Q421	11/29/2021 2:46:00 PM	12/13/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048138-003B			12/13/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/13/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048138-004A	MW-936-Q421	11/29/2021 2:56:00 PM	12/13/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048138-004B			12/13/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/13/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048138-005A	MW-75-267-Q421	11/29/2021 2:11:00 PM	12/13/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048138-005B			12/13/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/13/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048138-006A	MW-75-337-Q421	11/29/2021 1:20:00 PM	12/13/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048138-006B			12/13/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/13/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048138-007A	EB-716-Q421	11/29/2021 4:05:00 PM	12/13/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048138-008A	EB-717-Q421	11/29/2021 4:15:00 PM	12/13/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048138-009A	FOLDER	12/13/2021	12/13/2021		Folder	Folder	☐	☐	☐	LAB
			12/13/2021		Folder	Level IV Report	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

30-Nov-21

WorkOrder: N048138

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/29/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048138-009A	FOLDER	12/13/2021	12/13/2021		Folder	Folder	☐	☐	☐	LAB

December 10, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048160

RE: PG&E Topock - RCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on November 30, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Chromium in QC sample N048160-001C-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *10-Dec-21*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048160
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048160-001A	MW-85-129-Q421	Groundwater	11/30/2021 10:55:00 AM	11/30/2021	12/10/2021
N048160-001B	MW-85-129-Q421	Groundwater	11/30/2021 10:55:00 AM	11/30/2021	12/10/2021
N048160-001C	MW-85-129-Q421	Groundwater	11/30/2021 10:55:00 AM	11/30/2021	12/10/2021
N048160-002A	MW-85-217-Q421	Groundwater	11/30/2021 9:17:00 AM	11/30/2021	12/10/2021
N048160-002B	MW-85-217-Q421	Groundwater	11/30/2021 9:17:00 AM	11/30/2021	12/10/2021
N048160-002C	MW-85-217-Q421	Groundwater	11/30/2021 9:17:00 AM	11/30/2021	12/10/2021
N048160-003A	MW-85-237-Q421	Groundwater	11/30/2021 8:31:00 AM	11/30/2021	12/10/2021
N048160-003B	MW-85-237-Q421	Groundwater	11/30/2021 8:31:00 AM	11/30/2021	12/10/2021
N048160-003C	MW-85-237-Q421	Groundwater	11/30/2021 8:31:00 AM	11/30/2021	12/10/2021
N048160-004A	MW-87-109-Q421	Groundwater	11/30/2021 2:23:00 PM	11/30/2021	12/10/2021
N048160-004B	MW-87-109-Q421	Groundwater	11/30/2021 2:23:00 PM	11/30/2021	12/10/2021
N048160-004C	MW-87-109-Q421	Groundwater	11/30/2021 2:23:00 PM	11/30/2021	12/10/2021
N048160-005A	MW-87-139-Q421	Groundwater	11/30/2021 1:27:00 PM	11/30/2021	12/10/2021
N048160-005B	MW-87-139-Q421	Groundwater	11/30/2021 1:27:00 PM	11/30/2021	12/10/2021
N048160-005C	MW-87-139-Q421	Groundwater	11/30/2021 1:27:00 PM	11/30/2021	12/10/2021
N048160-006A	MW-87-275-Q421	Groundwater	11/30/2021 11:52:00 AM	11/30/2021	12/10/2021
N048160-006B	MW-87-275-Q421	Groundwater	11/30/2021 11:52:00 AM	11/30/2021	12/10/2021
N048160-006C	MW-87-275-Q421	Groundwater	11/30/2021 11:52:00 AM	11/30/2021	12/10/2021
N048160-007A	MW-87-192-Q421	Groundwater	11/30/2021 12:29:00 PM	11/30/2021	12/10/2021
N048160-007B	MW-87-192-Q421	Groundwater	11/30/2021 12:29:00 PM	11/30/2021	12/10/2021
N048160-007C	MW-87-192-Q421	Groundwater	11/30/2021 12:29:00 PM	11/30/2021	12/10/2021
N048160-008A	EB-720-Q421	Groundwater	11/30/2021 2:35:00 PM	11/30/2021	12/10/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-85-129-Q421
Lab Order:	N048160	**Collection Date:**	11/30/2021 10:55:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048160-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B**	QC Batch: **R158577**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	130	0.50	4.0		µg/L	20	12/1/2021 08:02 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	140	0.035	1.0		µg/L	1	12/4/2021 03:35 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:**	MW-85-217-Q421
Lab Order:	N048160	**Collection Date:**	11/30/2021 9:17:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048160-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B**	QC Batch: **R158577**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	490	2.5	20		µg/L	100	12/1/2021 08:30 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	500	0.18	5.0		µg/L	5	12/4/2021 04:46 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:**	MW-85-237-Q421
Lab Order:	N048160	**Collection Date:**	11/30/2021 8:31:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048160-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202A**	QC Batch: **R158578**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	240	1.3	10		µg/L	50	12/2/2021 11:51 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	250	0.18	5.0		µg/L	5	12/4/2021 04:58 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:**	MW-87-109-Q421
Lab Order:	N048160	**Collection Date:**	11/30/2021 2:23:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048160-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B** QC Batch: **R158577**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	18	0.13	1.0		µg/L	5	12/1/2021 09:17 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211204B** QC Batch: **90469**				PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	20	0.035	1.0		µg/L	1	12/4/2021 05:04 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:**	MW-87-139-Q421
Lab Order:	N048160	**Collection Date:**	11/30/2021 1:27:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048160-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B** QC Batch: **R158577**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	9.8	0.025	0.20		µg/L	1	12/1/2021 10:00 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211204B** QC Batch: **90469**				PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	9.9	0.035	1.0		µg/L	1	12/4/2021 05:16 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:**	MW-87-275-Q421
Lab Order:	N048160	**Collection Date:**	11/30/2021 11:52:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048160-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B**	QC Batch: **R158577**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1.3	0.13	1.0		µg/L	5	12/1/2021 10:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	1.8	0.035	1.0		µg/L	1	12/4/2021 05:28 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:**	MW-87-192-Q421
Lab Order:	N048160	**Collection Date:**	11/30/2021 12:29:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048160-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B** QC Batch: **R158577**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1.7	0.025	0.20		µg/L	1	12/1/2021 10:57 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211204B** QC Batch: **90469**				PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	2.2	0.035	1.0		µg/L	1	12/4/2021 06:03 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:**	EB-720-Q421
Lab Order:	N048160	**Collection Date:**	11/30/2021 2:35:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048160-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B**	QC Batch: **R158577**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/1/2021 11:16 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: N048160
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R158577	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577		
Client ID:	LCSW	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448251		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.146	0.20	5.000	0	103	90	110						

Sample ID	MB-R158577	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577		
Client ID:	PBW	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448252		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	N048160-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577		
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448256		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	226.494	4.0	100.0	129.5	97.0	90	110						

Sample ID	N048160-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577		
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448257		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	227.972	4.0	100.0	129.5	98.5	90	110	226.5	0.650	20			

Sample ID	N048160-002ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577		
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448259		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	488.160	20						490.4	0.468	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: N048160
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048160-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448260

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	979.430	20	500.0	490.4	97.8	90	110				

Sample ID	N048160-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448262

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.485	1.0	25.00	17.70	99.1	90	110				

Sample ID	N048160-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448266

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	15.041	0.20	5.000	9.827	104	90	110				

Sample ID	N048160-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448268

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.039	1.0	5.000	1.287	95.0	90	110				

Sample ID	N048160-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448270

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.728	0.20	1.000	1.708	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: N048160
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048160-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/1/2021**	SeqNo: **4448272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.011	0.20	1.000	0	101	90	110				

Sample ID **N048162-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.133	0.20	5.000	2.991	103	90	110				

Sample ID **N048162-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.009	0.20	1.000	0	101	90	110				

Sample ID **N048162-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.152	0.20	1.000	0.1092	104	90	110				

Sample ID **N048162-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448282**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0	109	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: N048160
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048162-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448284

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.095	0.20	1.000	0.05500	104	90	110				

Sample ID	N048162-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448288

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.003	0.20	1.000	0	100	90	110				

Sample ID	N048162-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448290

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.013	0.20	1.000	0	101	90	110				

Sample ID	N048162-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448292

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.026	0.20	1.000	0	103	90	110				

Sample ID	N048162-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448294

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.001	0.20	1.000	0	100	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: N048160
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048162-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448296**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.025	0.20	1.000	0	102	90	110				

Sample ID **N048162-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.989	0.20	5.000	2.961	101	90	110				

Sample ID **N048162-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.713	1.0	5.000	2.787	98.5	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: N048160
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158578	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158578		
Client ID:	PBW	Batch ID:	R158578	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448352		
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-R158578	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158578		
Client ID:	LCSW	Batch ID:	R158578	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448353		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		4.978	0.20	5.000	0	99.6	90	110					

Sample ID	N048157-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158578		
Client ID:	ZZZZZZ	Batch ID:	R158578	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448357		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		9.687	0.20	5.000	4.494	104	90	110					

Sample ID	N048157-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158578		
Client ID:	ZZZZZZ	Batch ID:	R158578	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448358		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		9.740	0.20	5.000	4.494	105	90	110	9.687	0.539	20		

Sample ID	N048157-008ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158578		
Client ID:	ZZZZZZ	Batch ID:	R158578	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448365		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		2.384	0.20						2.388	0.159	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: N048160
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048160-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158578
Client ID:	ZZZZZZ	Batch ID:	R158578	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448379

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	497.265	10	250.0	244.0	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: N048160
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90469	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	PBW	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455394

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

Sample ID	LCS-90469	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	LCSW	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455395

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.405	1.0	10.00	0	104	85	115				

Sample ID	N048160-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455401

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	145.153	1.0	10.00	137.0	81.1	75	125				

Sample ID	N048160-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	144.455	1.0	10.00	137.0	74.1	75	125	145.2	0.482	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: N048160
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	**N048160-001C-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **158704**
Client ID:	**ZZZZZZ**	Batch ID: **90469**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/4/2021**	SeqNo: **4455399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	142.756	1.0	10.00	137.0	57.1	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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-85-129-Q421
Lab Order:	N048160	**Collection Date:**	11/30/2021 10:55:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048160-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:		**12/2/2021**	Analyst: **CEI**
Arsenic	0.65	0.050	0.10		µg/L	1	12/4/2021 03:35 PM
Manganese	ND	0.026	0.50		µg/L	1	12/4/2021 03:35 PM
Molybdenum	5.0	0.12	0.50		µg/L	1	12/4/2021 03:35 PM
Selenium	9.6	0.044	0.50		µg/L	1	12/4/2021 03:35 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:**	MW-85-217-Q421
Lab Order:	N048160	**Collection Date:**	11/30/2021 9:17:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048160-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**				PrepDate:	**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/4/2021 04:40 PM
Manganese	3.0	0.026	0.50		µg/L	1	12/4/2021 04:40 PM
Molybdenum	86	0.12	0.50		µg/L	1	12/4/2021 04:40 PM
Selenium	3.4	0.044	0.50		µg/L	1	12/4/2021 04:40 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:**	MW-85-237-Q421
Lab Order:	N048160	**Collection Date:**	11/30/2021 8:31:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048160-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:		**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/4/2021 04:52 PM
Manganese	12	0.026	0.50		µg/L	1	12/4/2021 04:52 PM
Molybdenum	85	0.12	0.50		µg/L	1	12/4/2021 04:52 PM
Selenium	2.4	0.044	0.50		µg/L	1	12/4/2021 04:52 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:**	MW-87-109-Q421
Lab Order:	N048160	**Collection Date:**	11/30/2021 2:23:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048160-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**				PrepDate:	**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/4/2021 05:04 PM
Manganese	ND	0.026	0.50		µg/L	1	12/4/2021 05:04 PM
Molybdenum	5.5	0.12	0.50		µg/L	1	12/4/2021 05:04 PM
Selenium	2.9	0.044	0.50		µg/L	1	12/4/2021 05:04 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:**	MW-87-139-Q421
Lab Order:	N048160	**Collection Date:**	11/30/2021 1:27:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048160-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**				PrepDate:	**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/4/2021 05:16 PM
Manganese	ND	0.026	0.50		µg/L	1	12/4/2021 05:16 PM
Molybdenum	4.7	0.12	0.50		µg/L	1	12/4/2021 05:16 PM
Selenium	1.1	0.044	0.50		µg/L	1	12/4/2021 05:16 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
Lab Order: N048160
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048160-006

Client Sample ID: MW-87-275-Q421
Collection Date: 11/30/2021 11:52:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**				PrepDate:	**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/4/2021 05:28 PM
Manganese	ND	0.026	0.50		µg/L	1	12/4/2021 05:28 PM
Molybdenum	43	0.12	0.50		µg/L	1	12/4/2021 05:28 PM
Selenium	1.1	0.044	0.50		µg/L	1	12/7/2021 05:46 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:**	MW-87-192-Q421
Lab Order:	N048160	**Collection Date:**	11/30/2021 12:29:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048160-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**				PrepDate:	**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/4/2021 06:03 PM
Manganese	ND	0.026	0.50		µg/L	1	12/4/2021 06:03 PM
Molybdenum	22	0.12	0.50		µg/L	1	12/4/2021 06:03 PM
Selenium	1.3	0.044	0.50		µg/L	1	12/4/2021 06:03 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: N048160
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	MB-90469	SampType:	MBLK	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	PBW	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455527

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.061	0.50									

Sample ID	LCS-90469	SampType:	LCS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	LCSW	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455528

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.490	0.10	10.00	0	105	85	115				
Manganese	96.609	0.50	100.0	0	96.6	85	115				
Molybdenum	10.023	0.50	10.00	0	100	85	115				
Selenium	10.589	0.50	10.00	0	106	85	115				

Sample ID	N048160-001C-MS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455534

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.619	0.10	10.00	0.6457	99.7	75	125				
Manganese	86.460	0.50	100.0	0.1993	86.3	75	125				
Molybdenum	15.445	0.50	10.00	4.965	105	75	125				
Selenium	19.422	0.50	10.00	9.644	97.8	75	125				

Sample ID	N048160-001C-MSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455536

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.905	0.10	10.00	0.6457	103	75	125	10.62	2.66	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: N048160
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048160-001C-MSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455536

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	85.663	0.50	100.0	0.1993	85.5	75	125	86.46	0.926	20	
Molybdenum	15.322	0.50	10.00	4.965	104	75	125	15.45	0.802	20	
Selenium	18.775	0.50	10.00	9.644	91.3	75	125	19.42	3.39	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		

N048160

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: [illegible]	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@ptvqr.com P.O.#	
Submitted By: [illegible]		Phone: 949-727-1400, ext 200 Fax:	
Title: Field tech	Phone: 916-786-3302 Fax:		
Signature: Date: 11/30/21	Sampled By: Dana Tay		
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		
Project Name: PG&E Topock - RCM	Signature: Date: 11/30/21		
Project Number: 30110373.4Q21GW			

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

Sample Receipt Condition

	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	3	

6. Method of Cooling: ICE

Sample Temp: 2.8°C

Courier: ASSET

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	125 mL poly: Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4	500mL poly: Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, Molybdenum, Selenium	500mL poly: Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium,	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048160-01	MW-85-129-Q421	11/30/2021	10:55		X	X	X	X	E	3	P	BNS	
2	-02	MW-85-217-Q421	11/30/2021	9:17		X	X	X	X	E	3	P	BNS	
3	-03	MW-85-237-Q421	11/30/2021	8:31		X	X	X	X	E	3	P	BNS	
4	-04	MW-87-109-Q421	11/30/2021	14:23		X	X	X	X	E	3	P	BNS	
5	-05	MW-87-139-Q421	11/30/2021	13:27		X	X	X	X	E	3	P	BNS	
	-06	MW-87-275-Q421	11/30/2021	11:52		X	X	X	X	E	3	P	BNS	
7	-07	MW-87-192-Q421	11/30/2021	12:29		X	X	X	X	E	3	P	BNS	
8	-08	EB-720-Q421	11/30/2021	14:35		X				E	1	P	BNS	
9														
10														
11														
12														
13														
14														

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[illegible]	11/30/21 1615	Jonas Deada	11/30/21 1630
Jonas Deada	11/30/21 20:00	Jonas Deada	11/30/21 20:00

Turn Around Time (TAT)

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

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	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:	11/30/2021	Workorder:	N048160
Rep sample Temp (Deg C):	2.8	IR Gun ID:	3
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 By: GGJ GGarcia 12/1/2021

Reviewed By: MBC 12/4/2021

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048160

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/30/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048160-001A	MW-85-129-Q421	11/30/2021 10:55:00 AM	12/14/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048160-001B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048160-001C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048160-002A	MW-85-217-Q421	11/30/2021 9:17:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048160-002B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048160-002C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048160-003A	MW-85-237-Q421	11/30/2021 8:31:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048160-003B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048160-003C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048160-004A	MW-87-109-Q421	11/30/2021 2:23:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048160-004B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048160-004C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048160-005A	MW-87-139-Q421	11/30/2021 1:27:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048160

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/30/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048160-005B	MW-87-139-Q421	11/30/2021 1:27:00 PM	12/14/2021	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048160-005C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048160-006A	MW-87-275-Q421	11/30/2021 11:52:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048160-006B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048160-006C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048160-007A	MW-87-192-Q421	11/30/2021 12:29:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048160-007B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048160-007C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048160-008A	EB-720-Q421	11/30/2021 2:35:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048160-009A	FOLDER	12/14/2021	12/14/2021		Folder	Folder	☐	☐	☐	LAB
			12/14/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/14/2021			QA Review	☐	☐	☐	LAB
			12/14/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: NARA TEP

06-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: SM4500-NO3F		
N048160-001B / MW-85-129-Q421	Groundwater	11/30/2021 10:55:00 AM	8OZP	1		
N048160-002B / MW-85-217-Q421	Groundwater	11/30/2021 9:17:00 AM	8OZP	1		
N048160-003B / MW-85-237-Q421	Groundwater	11/30/2021 8:31:00 AM	8OZP	1		
N048160-004B / MW-87-109-Q421	Groundwater	11/30/2021 2:23:00 PM	8OZP	1		
N048160-005B / MW-87-139-Q421	Groundwater	11/30/2021 1:27:00 PM	8OZP	1		
N048160-006B / MW-87-275-Q421	Groundwater	11/30/2021 11:52:00 AM	8OZP	1		
N048160-007B / MW-87-192-Q421	Groundwater	11/30/2021 12:29:00 PM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48160A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555436438

		Date/Time		Date/Time
Relinquished by:	YRJ	12/6/2021 1630	**Received by:**	
Relinquished by:			**Received by:**	

December 16, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048161

RE: PG&E Topock - PCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on November 30, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET Laboratories - Las Vegas.

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.

Subcontracted Analyses:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (2.2 ug/L) and hexavalent chromium (0 ug/L) for sample N048161-001 (MW-33-040-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (20 ug/L) and hexavalent chromium (12 ug/L) for sample N048161-003 (MW-33-210-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for SM 5310C:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N048161-004DMS and N048161-004DMSD at lower dilutions possibly due to matrix interference. QC samples were further diluted and recovery passed criteria. Thus sample reference N048161-004D and MS/MSD were reported at 50x dilution. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N048208-013F-MS/MSD at lower dilutions possibly due to matrix interference. QC samples were further diluted and recovery passed criteria. Thus, sample reference N048208-013F and MS/MSD were reported at 50x dilution. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (2.2 ug/L) and hexavalent chromium (0 ug/L) for sample N048161-001 (MW-33-040-Q421) 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 2.3 and 0.76 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (20 ug/L) and hexavalent chromium (12 ug/L) for sample N048161-003 (MW-33-210-Q421) 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 20 and 13 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) is outside recovery criteria for Barium in QC sample N048161-001C-MS possibly due to matrix interference. Post Spike (PS) passed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum in QC samples N048161-001C-MS and N048161-001C-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048161
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048161-001A	MW-33-040-Q421	Groundwater	11/30/2021 3:40:00 PM	11/30/2021	12/16/2021
N048161-001B	MW-33-040-Q421	Groundwater	11/30/2021 3:40:00 PM	11/30/2021	12/16/2021
N048161-001C	MW-33-040-Q421	Groundwater	11/30/2021 3:40:00 PM	11/30/2021	12/16/2021
N048161-002A	MW-33-040-EB-Q421	Groundwater	11/30/2021 3:05:00 PM	11/30/2021	12/16/2021
N048161-003A	MW-33-210-Q421	Groundwater	11/30/2021 2:19:00 PM	11/30/2021	12/16/2021
N048161-003B	MW-33-210-Q421	Groundwater	11/30/2021 2:19:00 PM	11/30/2021	12/16/2021
N048161-004A	MW-52D-Q421	Groundwater	11/30/2021 9:06:00 AM	11/30/2021	12/16/2021
N048161-004B	MW-52D-Q421	Groundwater	11/30/2021 9:06:00 AM	11/30/2021	12/16/2021
N048161-004C	MW-52D-Q421	Groundwater	11/30/2021 9:06:00 AM	11/30/2021	12/16/2021
N048161-004D	MW-52D-Q421	Groundwater	11/30/2021 9:06:00 AM	11/30/2021	12/16/2021
N048161-005A	MW-52M-Q421	Groundwater	11/30/2021 9:40:00 AM	11/30/2021	12/16/2021
N048161-005B	MW-52M-Q421	Groundwater	11/30/2021 9:40:00 AM	11/30/2021	12/16/2021
N048161-005C	MW-52M-Q421	Groundwater	11/30/2021 9:40:00 AM	11/30/2021	12/16/2021
N048161-005D	MW-52M-Q421	Groundwater	11/30/2021 9:40:00 AM	11/30/2021	12/16/2021
N048161-006A	MW-52S-Q421	Groundwater	11/30/2021 10:08:00 AM	11/30/2021	12/16/2021
N048161-006B	MW-52S-Q421	Groundwater	11/30/2021 10:08:00 AM	11/30/2021	12/16/2021
N048161-006C	MW-52S-Q421	Groundwater	11/30/2021 10:08:00 AM	11/30/2021	12/16/2021
N048161-006D	MW-52S-Q421	Groundwater	11/30/2021 10:08:00 AM	11/30/2021	12/16/2021
N048161-007A	MW-935-Q421	Groundwater	11/30/2021 10:18:00 AM	11/30/2021	12/16/2021
N048161-007B	MW-935-Q421	Groundwater	11/30/2021 10:18:00 AM	11/30/2021	12/16/2021
N048161-007C	MW-935-Q421	Groundwater	11/30/2021 10:18:00 AM	11/30/2021	12/16/2021
N048161-007D	MW-935-Q421	Groundwater	11/30/2021 10:18:00 AM	11/30/2021	12/16/2021
N048161-008A	MW-53D-Q421	Groundwater	11/30/2021 10:44:00 AM	11/30/2021	12/16/2021
N048161-008B	MW-53D-Q421	Groundwater	11/30/2021 10:44:00 AM	11/30/2021	12/16/2021
N048161-008C	MW-53D-Q421	Groundwater	11/30/2021 10:44:00 AM	11/30/2021	12/16/2021
N048161-008D	MW-53D-Q421	Groundwater	11/30/2021 10:44:00 AM	11/30/2021	12/16/2021
N048161-009A	MW-53M-Q421	Groundwater	11/30/2021 11:14:00 AM	11/30/2021	12/16/2021
N048161-009B	MW-53M-Q421	Groundwater	11/30/2021 11:14:00 AM	11/30/2021	12/16/2021
N048161-009C	MW-53M-Q421	Groundwater	11/30/2021 11:14:00 AM	11/30/2021	12/16/2021

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048161
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048161-009D	MW-53M-Q421	Groundwater	11/30/2021 11:14:00 AM	11/30/2021	12/16/2021
N048161-010A	MW-53S-Q421	Groundwater	11/30/2021 11:44:00 AM	11/30/2021	12/16/2021
N048161-010B	MW-53S-Q421	Groundwater	11/30/2021 11:44:00 AM	11/30/2021	12/16/2021
N048161-010C	MW-53S-Q421	Groundwater	11/30/2021 11:44:00 AM	11/30/2021	12/16/2021
N048161-010D	MW-53S-Q421	Groundwater	11/30/2021 11:44:00 AM	11/30/2021	12/16/2021
N048161-011A	MW-43-025-Q421	Groundwater	11/30/2021 1:34:00 PM	11/30/2021	12/16/2021
N048161-011B	MW-43-025-Q421	Groundwater	11/30/2021 1:34:00 PM	11/30/2021	12/16/2021
N048161-011C	MW-43-025-Q421	Groundwater	11/30/2021 1:34:00 PM	11/30/2021	12/16/2021
N048161-011D	MW-43-025-Q421	Groundwater	11/30/2021 1:34:00 PM	11/30/2021	12/16/2021
N048161-012A	MW-43-025-EB-Q421	Groundwater	11/30/2021 1:10:00 PM	11/30/2021	12/16/2021
N048161-013A	MW-43-075-Q421	Groundwater	11/30/2021 12:56:00 PM	11/30/2021	12/16/2021
N048161-013B	MW-43-075-Q421	Groundwater	11/30/2021 12:56:00 PM	11/30/2021	12/16/2021
N048161-013C	MW-43-075-Q421	Groundwater	11/30/2021 12:56:00 PM	11/30/2021	12/16/2021
N048161-013D	MW-43-075-Q421	Groundwater	11/30/2021 12:56:00 PM	11/30/2021	12/16/2021
N048161-014A	MW-43-075-EB-Q421	Groundwater	11/30/2021 12:30:00 PM	11/30/2021	12/16/2021
N048161-015A	MW-43-090-Q421	Groundwater	11/30/2021 12:18:00 PM	11/30/2021	12/16/2021
N048161-015B	MW-43-090-Q421	Groundwater	11/30/2021 12:18:00 PM	11/30/2021	12/16/2021
N048161-015C	MW-43-090-Q421	Groundwater	11/30/2021 12:18:00 PM	11/30/2021	12/16/2021
N048161-015D	MW-43-090-Q421	Groundwater	11/30/2021 12:18:00 PM	11/30/2021	12/16/2021
N048161-016A	MW-43-090-EB-Q421	Groundwater	11/30/2021 11:55:00 AM	11/30/2021	12/16/2021
N048161-017A	EB-719-Q421	Groundwater	11/30/2021 4:00:00 PM	11/30/2021	12/16/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 3:40:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A** QC Batch: **R158547**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/1/2021 04:53 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211202B** QC Batch: **90450**				PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	2.2	0.035	1.0		µg/L	1	12/2/2021 12:59 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:**	MW-33-040-EB-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 3:05:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A**	QC Batch: **R158547**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/1/2021 10:41 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:**	MW-33-210-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 2:19:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A** QC Batch: **R158547**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	12	0.13	1.0		µg/L	5	12/1/2021 05:12 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211202B** QC Batch: **90450**				PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	20	0.035	1.0		µg/L	1	12/2/2021 02:11 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:**	MW-52D-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 9:06:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A**	QC Batch: **R158547**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/1/2021 05:30 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 02:22 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:**	MW-52M-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 9:40:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A**	QC Batch: **R158547**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/1/2021 06:08 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 02:34 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:**	MW-52S-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 10:08:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A**	QC Batch: **R158547**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/1/2021 12:15 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 02:46 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:**	MW-935-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 10:18:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211201A** QC Batch: **R158547** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/1/2021 12:34 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP8_211202B** QC Batch: **90450** PrepDate: **12/1/2021** Analyst: **CEI**							
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 03:10 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:**	MW-53D-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 10:44:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A**	QC Batch: **R158547**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/1/2021 06:27 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 03:22 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:**	MW-53M-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 11:14:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A**	QC Batch: **R158547**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/1/2021 06:46 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 03:34 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:**	MW-53S-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 11:44:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A** QC Batch: **R158547**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/1/2021 01:31 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211202B** QC Batch: **90450**				PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 03:46 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:**	MW-43-025-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 1:34:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A**	QC Batch: **R158547**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/1/2021 02:09 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 03:58 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:**	MW-43-025-EB-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 1:10:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A**	QC Batch: **R158547**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/1/2021 02:28 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:**	MW-43-075-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 12:56:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A** QC Batch: **R158547**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/1/2021 02:47 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211202B** QC Batch: **90450**				PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 04:33 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:**	MW-43-075-EB-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 12:30:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A**	QC Batch: **R158547**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/1/2021 03:17 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:**	MW-43-090-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 12:18:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A**	QC Batch: **R158547**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/1/2021 07:15 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 04:45 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-43-090-EB-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 11:55:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A**	QC Batch: **R158547**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/1/2021 04:15 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:**	EB-719-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 4:00:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201A**	QC Batch: **R158547**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/1/2021 04:34 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: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158547	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	PBW	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4446772

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-R158547	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	LCSW	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4446773

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.894	0.20	5.000	0	97.9	90	110				

Sample ID	N048156-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4446776

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.032	1.0						18.28	1.35	20	

Sample ID	N048155-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4446778

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	204.910	4.0	100.0	107.2	97.7	90	110				

Sample ID	N048155-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4446779

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	204.842	4.0	100.0	107.2	97.6	90	110	204.9	0.0332	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: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048161-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4446783

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.036	0.20	1.000	0	104	90	110				

Sample ID	N048161-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4446787

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.107	0.20	1.000	0.09300	101	90	110				

Sample ID	N048161-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4446789

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.136	0.20	1.000	0.07250	106	90	110				

Sample ID	N048161-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4446791

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.015	0.20	1.000	0	102	90	110				

Sample ID	N048161-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4446795

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.061	0.20	1.000	0	106	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: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048161-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158547**
Client ID: **ZZZZZZ**	Batch ID: **R158547**	TestNo: **EPA 218.6**		Analysis Date: **12/1/2021**	SeqNo: **4446797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.035	0.20	1.000	0	104	90	110				

Sample ID **N048161-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158547**
Client ID: **ZZZZZZ**	Batch ID: **R158547**	TestNo: **EPA 218.6**		Analysis Date: **12/1/2021**	SeqNo: **4446799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.066	0.20	1.000	0	107	90	110				

Sample ID **N048161-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158547**
Client ID: **ZZZZZZ**	Batch ID: **R158547**	TestNo: **EPA 218.6**		Analysis Date: **12/1/2021**	SeqNo: **4446801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.053	0.20	1.000	0	105	90	110				

Sample ID **N048161-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158547**
Client ID: **ZZZZZZ**	Batch ID: **R158547**	TestNo: **EPA 218.6**		Analysis Date: **12/1/2021**	SeqNo: **4448224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.013	0.20	1.000	0	101	90	110				

Sample ID **N048161-017AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158547**
Client ID: **ZZZZZZ**	Batch ID: **R158547**	TestNo: **EPA 218.6**		Analysis Date: **12/1/2021**	SeqNo: **4448226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.014	0.20	1.000	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: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048161-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448228

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.196	1.0	5.000	0.4205	95.5	90	110				

Sample ID	N048161-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448230

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.212	1.0	5.000	12.23	99.7	90	110				

Sample ID	N048161-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448232

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.126	1.0	5.000	0	103	90	110				

Sample ID	N048161-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448236

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	1.0	5.000	0	102	90	110				

Sample ID	N048161-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.128	1.0	5.000	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: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048161-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448240

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.107	1.0	5.000	0	102	90	110				

Sample ID	N048161-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158547
Client ID:	ZZZZZZ	Batch ID:	R158547	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448241

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.986	1.0	5.000	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: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90450	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158617
Client ID:	PBW	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4449706

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

Sample ID	LCS-90450	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158617
Client ID:	LCSW	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4449707

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.242	1.0	10.00	0	102	85	115				

Sample ID	N048161-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158617
Client ID:	ZZZZZZ	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4449713

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.740	1.0	10.00	2.231	85.1	75	125				

Sample ID	N048161-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158617
Client ID:	ZZZZZZ	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4449717

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.794	1.0	10.00	2.231	85.6	75	125	10.74	0.499	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:**	MW-52D-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 9:06:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211205A**	QC Batch: **R158636**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	4.2	50		mg/L	50	12/5/2021 07:32 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:**	MW-52M-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 9:40:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211205A**	QC Batch: **R158636**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/5/2021 10:22 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:**	MW-52S-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 10:08:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.3	0.084	1.0		mg/L	1	12/9/2021 02:46 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:**	MW-935-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 10:18:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.4	0.084	1.0		mg/L	1	12/9/2021 03:02 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:**	MW-53D-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 10:44:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211205A**	QC Batch: **R158636**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/5/2021 11:09 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:**	MW-53M-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 11:14:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211205A**	QC Batch: **R158636**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/5/2021 11:24 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:**	MW-53S-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 11:44:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211205A**	QC Batch: **R158636**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/5/2021 12:11 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:**	MW-43-025-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 1:34:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211205A**	QC Batch: **R158636**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.2	0.084	1.0		mg/L	1	12/5/2021 12:26 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:**	MW-43-075-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 12:56:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211205A**	QC Batch: **R158636**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/5/2021 12:42 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:**	MW-43-090-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 12:18:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211205A**	QC Batch: **R158636**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/5/2021 12:57 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: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID **MB-R158636**	SampType: **MBLK**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158636**
Client ID: **PBW**	Batch ID: **R158636**	TestNo: **SM 5310C**		Analysis Date: **12/5/2021**	SeqNo: **4451873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID **LCS-R158636**	SampType: **LCS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158636**
Client ID: **LCSW**	Batch ID: **R158636**	TestNo: **SM 5310C**		Analysis Date: **12/5/2021**	SeqNo: **4451874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	5.140	1.0	5.000	0	103	85	115				

Sample ID **N048161-004D-MS**	SampType: **MS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158636**
Client ID: **ZZZZZZ**	Batch ID: **R158636**	TestNo: **SM 5310C**		Analysis Date: **12/5/2021**	SeqNo: **4451911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	255.810	50	250.0	0	102	75	125				

Sample ID **N048161-004D-MSD**	SampType: **MSD**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158636**
Client ID: **ZZZZZZ**	Batch ID: **R158636**	TestNo: **SM 5310C**		Analysis Date: **12/5/2021**	SeqNo: **4451912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	267.005	50	250.0	0	107	75	125	255.8	4.28	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: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID **MB-R158784**	SampType: **MBLK**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **PBW**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID **LCS-R158784**	SampType: **LCS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **LCSW**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.653	1.0	5.000	0	93.1	85	115				

Sample ID **N048208-013F-MS**	SampType: **MS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **ZZZZZZ**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	239.145	50	250.0	0	95.7	75	125				

Sample ID **N048208-013F-MSD**	SampType: **MSD**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **ZZZZZZ**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	239.125	50	250.0	0	95.6	75	125	239.1	0.00836	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:**	MW-52D-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 9:06:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**				PrepDate:	**12/1/2021**	Analyst: **DJ**
Iron	950	13	20		µg/L	1	12/1/2021 01:34 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:**	MW-52M-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 9:40:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**			PrepDate:	**12/1/2021**		Analyst: **DJ**
Iron	1400	13	20		µg/L	1	12/1/2021 01:39 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:**	MW-52S-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 10:08:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**				PrepDate:	**12/1/2021**	Analyst: **DJ**
Iron	20000	13	20		µg/L	1	12/1/2021 01:44 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:**	MW-935-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 10:18:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**				PrepDate:	**12/1/2021**	Analyst: **DJ**
Iron	20000	13	20		µg/L	1	12/1/2021 01:49 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:**	MW-53D-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 10:44:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**			PrepDate:	**12/1/2021**		Analyst: **DJ**
Iron	220	13	20		µg/L	1	12/1/2021 01:54 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:**	MW-53M-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 11:14:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**				PrepDate:	**12/1/2021**	Analyst: **DJ**
Iron	380	13	20		µg/L	1	12/1/2021 01:59 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:**	MW-53S-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 11:44:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**				PrepDate:	**12/1/2021**	Analyst: **DJ**
Iron	5400	13	20		µg/L	1	12/1/2021 02:05 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-43-025-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 1:34:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**				PrepDate:	**12/1/2021**	Analyst: **DJ**
Iron	4400	13	20		µg/L	1	12/1/2021 02:09 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:**	MW-43-075-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 12:56:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**				PrepDate:	**12/1/2021**	Analyst: **DJ**
Iron	3700	13	20		µg/L	1	12/1/2021 02:14 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:**	MW-43-090-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 12:18:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**				PrepDate:	**12/1/2021**	Analyst: **DJ**
Iron	1200	13	20		µg/L	1	12/1/2021 02:19 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: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-90442	SampType:	MBLK	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158543
Client ID:	PBW	Batch ID:	90442	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2021	SeqNo:	4446643

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

Sample ID	LCS-90442	SampType:	LCS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158543
Client ID:	LCSW	Batch ID:	90442	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2021	SeqNo:	4446644

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.714	20	100.0	0	103	85	115				

Sample ID	N048156-001C-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158543
Client ID:	ZZZZZZ	Batch ID:	90442	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2021	SeqNo:	4446648

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	110.114	20	100.0	19.75	90.4	75	125				

Sample ID	N048156-001C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158543
Client ID:	ZZZZZZ	Batch ID:	90442	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2021	SeqNo:	4446649

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	109.032	20	100.0	19.75	89.3	75	125	110.1	0.987	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:**	MW-33-040-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 3:40:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Molybdenum	380	0.60	2.5		µg/L	5	12/2/2021 01:05 PM
Selenium	5.7	0.044	0.50		µg/L	1	12/2/2021 12:59 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
Lab Order: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048161-004

Client Sample ID: MW-52D-Q421
Collection Date: 11/30/2021 9:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:		**12/1/2021**	Analyst: **CEI**
Arsenic	2.0	0.050	0.10		µg/L	1	12/2/2021 02:22 PM
Barium	37	0.083	1.0		µg/L	1	12/2/2021 02:22 PM
Manganese	280	0.13	2.5		µg/L	5	12/2/2021 02:28 PM
Molybdenum	61	0.12	0.50		µg/L	1	12/2/2021 02:22 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 02:22 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:**	MW-52M-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 9:40:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/2/2021 02:34 PM
Barium	54	0.083	1.0		µg/L	1	12/2/2021 02:34 PM
Manganese	210	0.13	2.5		µg/L	5	12/2/2021 02:40 PM
Molybdenum	30	0.12	0.50		µg/L	1	12/2/2021 02:34 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 02:34 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:**	MW-52S-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 10:08:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/2/2021 02:46 PM
Barium	1400	2.1	25		µg/L	25	12/3/2021 11:16 AM
Manganese	1400	0.66	12		µg/L	25	12/3/2021 11:16 AM
Molybdenum	5.3	0.12	0.50		µg/L	1	12/2/2021 02:46 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 02:46 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:**	MW-935-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 10:18:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**				PrepDate:	**12/1/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/2/2021 03:10 PM
Barium	1300	2.1	25		µg/L	25	12/3/2021 11:28 AM
Manganese	1300	0.66	12		µg/L	25	12/3/2021 11:28 AM
Molybdenum	4.9	0.12	0.50		µg/L	1	12/2/2021 03:10 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 03:10 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:**	MW-53D-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 10:44:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:		**12/1/2021**	Analyst: **CEI**
Arsenic	3.6	0.050	0.10		µg/L	1	12/2/2021 03:22 PM
Barium	44	0.083	1.0		µg/L	1	12/2/2021 03:22 PM
Manganese	1300	0.66	12		µg/L	25	12/3/2021 11:34 AM
Molybdenum	180	0.12	0.50		µg/L	1	12/2/2021 03:22 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 03:22 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:**	MW-53M-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 11:14:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/2/2021 03:34 PM
Barium	58	0.083	1.0		µg/L	1	12/2/2021 03:34 PM
Manganese	420	0.13	2.5		µg/L	5	12/2/2021 03:40 PM
Molybdenum	54	0.12	0.50		µg/L	1	12/2/2021 03:34 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 03:34 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
Lab Order: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048161-010

Client Sample ID: MW-53S-Q421
Collection Date: 11/30/2021 11:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/2/2021 03:46 PM
Barium	200	0.42	5.0		µg/L	5	12/2/2021 03:52 PM
Manganese	1200	0.66	12		µg/L	25	12/3/2021 11:40 AM
Molybdenum	1.6	0.12	0.50		µg/L	1	12/2/2021 03:46 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 03:46 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
Lab Order: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048161-011

Client Sample ID: MW-43-025-Q421
Collection Date: 11/30/2021 1:34:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:		**12/1/2021**	Analyst: **CEI**
Arsenic	31	0.050	0.10		µg/L	1	12/2/2021 03:58 PM
Barium	75	0.083	1.0		µg/L	1	12/2/2021 03:58 PM
Manganese	360	0.13	2.5		µg/L	5	12/2/2021 04:04 PM
Molybdenum	5.3	0.12	0.50		µg/L	1	12/2/2021 03:58 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 03:58 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:**	MW-43-075-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 12:56:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Arsenic	8.7	0.050	0.10		µg/L	1	12/2/2021 04:33 PM
Barium	42	0.083	1.0		µg/L	1	12/2/2021 04:33 PM
Manganese	540	0.13	2.5		µg/L	5	12/2/2021 04:39 PM
Molybdenum	15	0.12	0.50		µg/L	1	12/2/2021 04:33 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 04:33 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:**	MW-43-090-Q421
Lab Order:	N048161	**Collection Date:**	11/30/2021 12:18:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048161-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:		**12/1/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/2/2021 04:45 PM
Barium	55	0.083	1.0		µg/L	1	12/2/2021 04:45 PM
Manganese	520	0.13	2.5		µg/L	5	12/2/2021 04:51 PM
Molybdenum	29	0.12	0.50		µg/L	1	12/2/2021 04:45 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 04:45 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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90450**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/1/2021**	RunNo: **158617**
Client ID: **PBW**	Batch ID: **90450**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/2/2021**	SeqNo: **4451600**

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									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-90450**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/1/2021**	RunNo: **158617**
Client ID: **LCSW**	Batch ID: **90450**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/2/2021**	SeqNo: **4451601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.194	0.10	10.00	0	102	85	115				
Barium	9.609	1.0	10.00	0	96.1	85	115				
Manganese	98.377	0.50	100.0	0	98.4	85	115				
Molybdenum	9.891	0.50	10.00	0	98.9	85	115				
Selenium	9.950	0.50	10.00	0	99.5	85	115				

Sample ID **N048161-001C-MS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/1/2021**	RunNo: **158617**
Client ID: **ZZZZZZ**	Batch ID: **90450**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/2/2021**	SeqNo: **4451607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.515	0.10	10.00	9.000	105	75	125				
Barium	72.058	1.0	10.00	59.34	127	75	125				S
Manganese	95.780	0.50	100.0	9.459	86.3	75	125				
Selenium	16.426	0.50	10.00	5.682	107	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: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **N048161-001C-MS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/1/2021**	RunNo: **158617**
Client ID: **ZZZZZZ**	Batch ID: **90450**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/2/2021**	SeqNo: **4451608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	405.909	2.5	10.00	380.2	257	75	125				S

Sample ID **N048161-001C-MSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/1/2021**	RunNo: **158617**
Client ID: **ZZZZZZ**	Batch ID: **90450**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/2/2021**	SeqNo: **4451611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.119	0.10	10.00	9.000	101	75	125	19.52	2.05	20	
Barium	69.573	1.0	10.00	59.34	102	75	125	72.06	3.51	20	
Manganese	95.157	0.50	100.0	9.459	85.7	75	125	95.78	0.653	20	
Selenium	16.827	0.50	10.00	5.682	111	75	125	16.43	2.41	20	

Sample ID **N048161-001C-MSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/1/2021**	RunNo: **158617**
Client ID: **ZZZZZZ**	Batch ID: **90450**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/2/2021**	SeqNo: **4451612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	394.938	2.5	10.00	380.2	147	75	125	405.9	2.74	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: N048161
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048161-001C-PS	SampType:	PS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:		RunNo:	158617
Client ID:	ZZZZZZ	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4451605

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.378	0.10	10.00	9.000	104	80	120				
Barium	70.236	1.0	10.00	59.34	109	80	120				
Manganese	95.415	0.50	100.0	9.459	86.0	80	120				
Selenium	16.438	0.50	10.00	5.682	108	80	120				

Sample ID	N048161-001C-PS	SampType:	PS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:		RunNo:	158617
Client ID:	ZZZZZZ	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4451606

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	395.265	2.5	10.00	380.2	150	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		

N048161

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307 2691
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

| | | |

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: [redacted]	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@ni[redacted]ox.com	P.O.#
Submitted By:		Phone: 949-727-1400, ext 200	Fax:
Title: Field Tech	Phone: 916-786-3302 Fax:		
Signature: Date: 11/30/21	Sampled By: Nara Tag		
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*		
Project Name: PG&E Topock - PCM	Signature: Date: 11/30/21		
Project Number: 30110373.4Q21GW			

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	X	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact	X	
Others	✓	LEVEL III		4. Seal Present		X
Specify: RWQCB		LEVEL IV		5. IR number	3	
Global ID:		Regulatory		6. Method of Cooling: ICE		
		Specify State:		Sample Temp: 2.4°C / 2.3°C / 2.8°C		

Courier: ASSET
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Matrix	250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	125 mL poly: Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4	500mL poly: Dissolved metals (SW6020) FF; HNO3 Arsenic, Barium, Iron, Manganese	500mL poly: Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium,	500mL poly: Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium	3x40 mL VOA: Total Organic Carbon (SM5310C); H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048161-04	MW-52D-Q421	11/30/2021	9:06		Ground	X	X	X	X	X	X	E	6	P	BNS	
2	-05	MW-52M-Q421	11/30/2021	9:40		Ground	X	X	X	X	X	X	E	6	P	BNS	
3	-06	MW-52S-Q421	11/30/2021	10:08		Ground	X	X	X	X	X	X	E	6	P	BNS	
4	-07	MW-935-Q421	11/30/2021	10:18		Ground	X	X	X	X	X	X	E	6	P	BNS	
5	-08	MW-53D-Q421	11/30/2021	10:44		Ground	X	X	X	X	X	X	E	6	P	BNS	
	-09	MW-53M-Q421	11/30/2021	11:14		Ground	X	X	X	X	X	X	E	6	P	BNS	
7	-10	MW-53S-Q421	11/30/2021	11:44		Ground	X	X	X	X	X	X	E	6	P	BNS	
8	-11	MW-43-025-Q421	11/30/2021	13:34		Ground	X	X	X	X	X	X	E	6	P	BNS	
9	-12	MW-43-025-EB-Q421	11/30/2021	13:10		Ground	X						E	1	P	BNS	
10	-13	MW-43-075-Q421	11/30/2021	~~12:55~~ 12:50		Ground	X	X	X	X	X	X	E	6	P	BNS	
11	-14	MW-43-075-EB-Q421	11/30/2021	12:30		Ground	X						E	1	P	BNS	
12	-15	MW-43-090-Q421	11/30/2021	12:18		Ground	X	X	X	X	X	X	E	6	P	BNS	
13	-16	MW-43-090-EB-Q421	11/30/2021	11:55		Ground	X						E	1	P	BNS	
14	-17	EB-719-Q421	11/30/2021	16:00		Ground	X						E	1	P	BNS	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
Nara Tag	11/30/21 1630	Jordan Deeds	11/30/21 1630
Jordan Deeds	11/30/21 20:00	Jordan Deeds	11/30/21 20:00

Turn Around Time (TAT)

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

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

Special Instruction:

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:	B	(NH4)2SO4/NH4OH	

Container Type:

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

Terms
1. All samples will be disposed in 45 days 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.

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:	11/30/2021	Workorder:	N048161
Rep sample Temp (Deg C):	2.4/2.3/2.8	IR Gun ID:	3

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 By: GGJ GGarcia 12/1/2021

Reviewed By: MBC 12/7/2021

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048161

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/30/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048161-001A	MW-33-040-Q421	11/30/2021 3:40:00 PM	12/14/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-001B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048161-001C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048161-002A	MW-33-040-EB-Q421	11/30/2021 3:05:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-003A	MW-33-210-Q421	11/30/2021 2:19:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-003B			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048161-004A	MW-52D-Q421	11/30/2021 9:06:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-004B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048161-004C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048161-004D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048161-005A	MW-52M-Q421	11/30/2021 9:40:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-005B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048161-005C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048161

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/30/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048161-005C	MW-52M-Q421	11/30/2021 9:40:00 AM	12/14/2021	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048161-005D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048161-006A	MW-52S-Q421	11/30/2021 10:08:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-006B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048161-006C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048161-006D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048161-007A	MW-935-Q421	11/30/2021 10:18:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-007B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048161-007C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048161-007D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048161-008A	MW-53D-Q421	11/30/2021 10:44:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048161

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/30/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048161-008B	MW-53D-Q421	11/30/2021 10:44:00 AM	12/14/2021	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048161-008C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048161-008D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048161-009A	MW-53M-Q421	11/30/2021 11:14:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-009B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048161-009C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048161-009D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048161-010A	MW-53S-Q421	11/30/2021 11:44:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-010B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048161-010C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048161

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/30/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048161-010C	MW-53S-Q421	11/30/2021 11:44:00 AM	12/14/2021	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048161-010D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048161-011A	MW-43-025-Q421	11/30/2021 1:34:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-011B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048161-011C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048161-011D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048161-012A	MW-43-025-EB-Q421	11/30/2021 1:10:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-013A	MW-43-075-Q421	11/30/2021 12:56:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-013B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048161-013C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048161-013D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048161-014A	MW-43-075-EB-Q421	11/30/2021 12:30:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-015A	MW-43-090-Q421	11/30/2021 12:18:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048161

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/30/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048161-015B	MW-43-090-Q421	11/30/2021 12:18:00 PM	12/14/2021	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048161-015C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048161-015D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048161-016A	MW-43-090-EB-Q421	11/30/2021 11:55:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-017A	EB-719-Q421	11/30/2021 4:00:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048161-018A	FOLDER	12/14/2021	12/14/2021		Folder	Folder	☐	☐	☐	LAB
			12/14/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/14/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: NANA TEP

06-Dec-21

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**SM4500-NO3F**		
N048161-001B / MW-33-040-Q421	Groundwater	11/30/2021 3:40:00 PM	8OZP	1		
N048161-004B / MW-52D-Q421	Groundwater	11/30/2021 9:06:00 AM	8OZP	1		
N048161-005B / MW-52M-Q421	Groundwater	11/30/2021 9:40:00 AM	8OZP	1		
N048161-006B / MW-52S-Q421	Groundwater	11/30/2021 10:08:00 AM	8OZP	1		
N048161-007B / MW-935-Q421	Groundwater	11/30/2021 10:18:00 AM	8OZP	1		
N048161-008B / MW-53D-Q421	Groundwater	11/30/2021 10:44:00 AM	8OZP	1		
N048161-009B / MW-53M-Q421	Groundwater	11/30/2021 11:14:00 AM	8OZP	1		
N048161-010B / MW-53S-Q421	Groundwater	11/30/2021 11:44:00 AM	8OZP	1		
N048161-011B / MW-43-025-Q421	Groundwater	11/30/2021 1:34:00 PM	8OZP	1		
N048161-013B / MW-43-075-Q421	Groundwater	11/30/2021 12:56:00 PM	8OZP	1		
N048161-015B / MW-43-090-Q421	Groundwater	11/30/2021 12:18:00 PM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48161A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555436438

	Date/Time		Date/Time
Relinquished by: YRJ	12/6/2021 1630	**Received by:**	
Relinquished by:		**Received by:**	

December 16, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048162

RE: PG&E Topock - PCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on November 30, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET Laboratories - Las Vegas.

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.

Subcontracted Analyses:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (5.6 ug/L) and hexavalent chromium (3.0 ug/L) for sample N048162-003 (MW-33-090-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (6.6 ug/L) and hexavalent chromium (3.0 ug/L) for sample N048162-014 (MW-929-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (31 ug/L) and hexavalent chromium (2.8 g/L) for sample N048162-015 (MW-33-150-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for SM 5310C:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples

N048161-004DMS and N048161-004DMSD at lower dilutions possibly due to matrix interference. QC samples were further diluted and recovery passed criteria. Thus sample reference N048161-004D and MS/MSD were reported at 50x dilution. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N048208-013F-MS/MSD at lower dilutions possibly due to matrix interference. QC samples were further diluted and recovery passed criteria. Thus, sample reference N048208-013F and MS/MSD were reported at 50x dilution. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (5.6 ug/L) and hexavalent chromium (3.0 ug/L) for sample N048162-003 (MW-33-090-Q421) 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 5.6 and 3.1 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (6.6 ug/L) and hexavalent chromium (3.0 ug/L) for sample N048162-014 (MW-929-Q421) 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 7.0 and 3.0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (31 ug/L) and hexavalent chromium (2.8 g/L) for sample N048162-015 (MW-33-150-Q421) 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 32 and 19 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) is outside recovery criteria for Barium in QC sample N048161-001C-MS possibly due to matrix interference. Post Spike (PS) passed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike Duplicate (MSD) is outside recovery criteria for Chromium in QC sample N048160-001C-MSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum in QC samples N048161-001C-MS and N048161-001C-MSD since the analyte concentration in the

sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048162
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048162-001A	MW-22-Q421	Groundwater	11/30/2021 8:26:00 AM	11/30/2021	12/16/2021
N048162-001B	MW-22-Q421	Groundwater	11/30/2021 8:26:00 AM	11/30/2021	12/16/2021
N048162-001C	MW-22-Q421	Groundwater	11/30/2021 8:26:00 AM	11/30/2021	12/16/2021
N048162-001D	MW-22-Q421	Groundwater	11/30/2021 8:26:00 AM	11/30/2021	12/16/2021
N048162-002A	MW-927-Q421	Groundwater	11/30/2021 8:36:00 AM	11/30/2021	12/16/2021
N048162-002B	MW-927-Q421	Groundwater	11/30/2021 8:36:00 AM	11/30/2021	12/16/2021
N048162-002C	MW-927-Q421	Groundwater	11/30/2021 8:36:00 AM	11/30/2021	12/16/2021
N048162-002D	MW-927-Q421	Groundwater	11/30/2021 8:36:00 AM	11/30/2021	12/16/2021
N048162-003A	MW-33-090-Q421	Groundwater	11/30/2021 2:55:00 PM	11/30/2021	12/16/2021
N048162-003B	MW-33-090-Q421	Groundwater	11/30/2021 2:55:00 PM	11/30/2021	12/16/2021
N048162-003C	MW-33-090-Q421	Groundwater	11/30/2021 2:55:00 PM	11/30/2021	12/16/2021
N048162-004A	MW-32-020-Q421	Groundwater	11/30/2021 9:55:00 AM	11/30/2021	12/16/2021
N048162-004B	MW-32-020-Q421	Groundwater	11/30/2021 9:55:00 AM	11/30/2021	12/16/2021
N048162-004C	MW-32-020-Q421	Groundwater	11/30/2021 9:55:00 AM	11/30/2021	12/16/2021
N048162-004D	MW-32-020-Q421	Groundwater	11/30/2021 9:55:00 AM	11/30/2021	12/16/2021
N048162-005A	MW-32-020-EB-Q421	Groundwater	11/30/2021 10:05:00 AM	11/30/2021	12/16/2021
N048162-006A	MW-32-035-Q421	Groundwater	11/30/2021 9:25:00 AM	11/30/2021	12/16/2021
N048162-006B	MW-32-035-Q421	Groundwater	11/30/2021 9:25:00 AM	11/30/2021	12/16/2021
N048162-006C	MW-32-035-Q421	Groundwater	11/30/2021 9:25:00 AM	11/30/2021	12/16/2021
N048162-006D	MW-32-035-Q421	Groundwater	11/30/2021 9:25:00 AM	11/30/2021	12/16/2021
N048162-007A	MW-32-035-EB-Q421	Groundwater	11/30/2021 9:35:00 AM	11/30/2021	12/16/2021
N048162-008A	MW-42-030-Q421	Groundwater	11/30/2021 11:51:00 AM	11/30/2021	12/16/2021
N048162-008B	MW-42-030-Q421	Groundwater	11/30/2021 11:51:00 AM	11/30/2021	12/16/2021
N048162-008C	MW-42-030-Q421	Groundwater	11/30/2021 11:51:00 AM	11/30/2021	12/16/2021
N048162-008D	MW-42-030-Q421	Groundwater	11/30/2021 11:51:00 AM	11/30/2021	12/16/2021
N048162-009A	MW-42-055-Q421	Groundwater	11/30/2021 11:24:00 AM	11/30/2021	12/16/2021
N048162-009B	MW-42-055-Q421	Groundwater	11/30/2021 11:24:00 AM	11/30/2021	12/16/2021
N048162-009C	MW-42-055-Q421	Groundwater	11/30/2021 11:24:00 AM	11/30/2021	12/16/2021
N048162-009D	MW-42-055-Q421	Groundwater	11/30/2021 11:24:00 AM	11/30/2021	12/16/2021

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048162
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048162-010A	MW-42-055-EB-Q421	Groundwater	11/30/2021 11:34:00 AM	11/30/2021	12/16/2021
N048162-011A	MW-42-065-Q421	Groundwater	11/30/2021 10:57:00 AM	11/30/2021	12/16/2021
N048162-011B	MW-42-065-Q421	Groundwater	11/30/2021 10:57:00 AM	11/30/2021	12/16/2021
N048162-011C	MW-42-065-Q421	Groundwater	11/30/2021 10:57:00 AM	11/30/2021	12/16/2021
N048162-011D	MW-42-065-Q421	Groundwater	11/30/2021 10:57:00 AM	11/30/2021	12/16/2021
N048162-012A	MW-42-065-EB-Q421	Groundwater	11/30/2021 11:07:00 AM	11/30/2021	12/16/2021
N048162-013A	EB-718-Q421	Groundwater	11/30/2021 3:30:00 PM	11/30/2021	12/16/2021
N048162-014A	MW-929-Q421	Groundwater	11/30/2021 3:05:00 PM	11/30/2021	12/16/2021
N048162-014B	MW-929-Q421	Groundwater	11/30/2021 3:05:00 PM	11/30/2021	12/16/2021
N048162-014C	MW-929-Q421	Groundwater	11/30/2021 3:05:00 PM	11/30/2021	12/16/2021
N048162-015A	MW-33-150-Q421	Groundwater	11/30/2021 2:52:00 PM	11/30/2021	12/16/2021
N048162-015B	MW-33-150-Q421	Groundwater	11/30/2021 2:52:00 PM	11/30/2021	12/16/2021
N048162-015C	MW-33-150-Q421	Groundwater	11/30/2021 2:52:00 PM	11/30/2021	12/16/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-22-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 8:26:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202B** QC Batch: **R158611**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/2/2021 08:34 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211202B** QC Batch: **90450**				PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 04:57 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:**	MW-927-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 8:36:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202B** QC Batch: **R158611**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/2/2021 08:53 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211202B** QC Batch: **90450**				PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 05:09 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:**	MW-33-090-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 2:55:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B** QC Batch: **R158577**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	3.0	0.025	0.20		µg/L	1	12/1/2021 11:54 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211202B** QC Batch: **90450**				PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	5.6	0.035	1.0		µg/L	1	12/2/2021 05:21 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:**	MW-32-020-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 9:55:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211202B** QC Batch: **R158611**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/2/2021 03:57 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211202B** QC Batch: **90450**				PrepDate: **12/1/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 05:45 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-020-EB-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 10:05:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B**	QC Batch: **R158577**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/2/2021 12:13 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:**	MW-32-035-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 9:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B** QC Batch: **R158577**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/2/2021 12:32 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211202B** QC Batch: **90450**				PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 05:57 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:**	MW-32-035-EB-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 9:35:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B**	QC Batch: **R158577**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/2/2021 12:51 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:**	MW-42-030-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 11:51:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B**	QC Batch: **R158577**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/2/2021 01:10 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 06:09 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:**	MW-42-055-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 11:24:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B**	QC Batch: **R158577**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/2/2021 01:47 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 06:20 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-EB-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 11:34:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B**	QC Batch: **R158577**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/2/2021 02:06 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:**	MW-42-065-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 10:57:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B**	QC Batch: **R158577**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/2/2021 02:25 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/2/2021 06:32 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:**	MW-42-065-EB-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 11:07:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B**	QC Batch: **R158577**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/2/2021 02:44 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:**	EB-718-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 3:30:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B**	QC Batch: **R158577**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/2/2021 03:03 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:**	MW-929-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 3:05:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B**	QC Batch: **R158577**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	3.0	0.025	0.20		µg/L	1	12/2/2021 04:00 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	6.6	0.035	1.0		µg/L	1	12/4/2021 06:15 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:**	MW-33-150-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 2:52:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211201B**	QC Batch: **R158577**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	2.8	0.13	1.0		µg/L	5	12/2/2021 04:38 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	31	0.035	1.0		µg/L	1	12/4/2021 06:27 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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R158577	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	LCSW	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448251

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.146	0.20	5.000	0	103	90	110				

Sample ID	MB-R158577	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	PBW	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448252

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

Sample ID	N048160-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448256

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	226.494	4.0	100.0	129.5	97.0	90	110				

Sample ID	N048160-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448257

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	227.972	4.0	100.0	129.5	98.5	90	110	226.5	0.650	20	

Sample ID	N048160-002ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448259

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	488.160	20						490.4	0.468	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048160-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448260

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	979.430	20	500.0	490.4	97.8	90	110				

Sample ID	N048160-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448262

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.485	1.0	25.00	17.70	99.1	90	110				

Sample ID	N048160-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448266

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	15.041	0.20	5.000	9.827	104	90	110				

Sample ID	N048160-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448268

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.039	1.0	5.000	1.287	95.0	90	110				

Sample ID	N048160-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448270

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.728	0.20	1.000	1.708	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048160-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/1/2021	SeqNo:	4448272

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.011	0.20	1.000	0	101	90	110				

Sample ID	N048162-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448276

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.133	0.20	5.000	2.991	103	90	110				

Sample ID	N048162-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448278

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.009	0.20	1.000	0	101	90	110				

Sample ID	N048162-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448280

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.152	0.20	1.000	0.1092	104	90	110				

Sample ID	N048162-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158577
Client ID:	ZZZZZZ	Batch ID:	R158577	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4448282

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0	109	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048162-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.095	0.20	1.000	0.05500	104	90	110				

Sample ID **N048162-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.003	0.20	1.000	0	100	90	110				

Sample ID **N048162-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.013	0.20	1.000	0	101	90	110				

Sample ID **N048162-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.026	0.20	1.000	0	103	90	110				

Sample ID **N048162-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.001	0.20	1.000	0	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048162-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448296**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.025	0.20	1.000	0	102	90	110				

Sample ID **N048162-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.989	0.20	5.000	2.961	101	90	110				

Sample ID **N048162-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158577**
Client ID: **ZZZZZZ**	Batch ID: **R158577**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4448302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.713	1.0	5.000	2.787	98.5	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R158611	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611		
Client ID:	LCSW	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449474		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.940	0.20	5.000	0	98.8	90	110						

Sample ID	MB-R158611	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611		
Client ID:	PBW	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449475		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	N048182-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611		
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449478		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.095	0.20						1.092	0.274	20			

Sample ID	N048188-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611		
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449479		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	14.956	0.20	5.000	9.727	105	90	110						

Sample ID	N048188-007AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611		
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449480		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	14.850	0.20	5.000	9.727	102	90	110	14.96	0.713	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048182-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.090	0.20	1.000	1.092	99.8	90	110				

Sample ID **N048162-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.153	1.0	5.000	0	103	90	110				

Sample ID **N048188-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.534	0.20	1.000	0.5059	103	90	110				

Sample ID **N048188-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.159	0.20	1.000	1.163	99.6	90	110				

Sample ID **N048188-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.288	0.20	1.000	0.3029	98.5	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048188-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.176	0.20	1.000	1.184	99.2	90	110				

Sample ID **N048188-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.445	0.20	1.000	0.4221	102	90	110				

Sample ID **N048188-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.555	0.20	1.000	0.5902	96.5	90	110				

Sample ID **N048188-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.989	0.20	1.000	0	98.9	90	110				

Sample ID **N048162-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.065	1.0	5.000	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048162-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.978	1.0	5.000	0	99.6	90	110				

Sample ID **N048187-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.044	1.0	5.000	0	101	90	110				

Sample ID **N048187-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.712	1.0	5.000	0.8280	97.7	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90450	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158617
Client ID:	PBW	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4449706

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

Sample ID	LCS-90450	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158617
Client ID:	LCSW	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4449707

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.242	1.0	10.00	0	102	85	115				

Sample ID	N048161-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158617
Client ID:	ZZZZZZ	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4449713

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.740	1.0	10.00	2.231	85.1	75	125				

Sample ID	N048161-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158617
Client ID:	ZZZZZZ	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4449717

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.794	1.0	10.00	2.231	85.6	75	125	10.74	0.499	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90469	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	PBW	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455394

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

Sample ID	LCS-90469	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	LCSW	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455395

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.405	1.0	10.00	0	104	85	115				

Sample ID	N048160-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455401

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	145.153	1.0	10.00	137.0	81.1	75	125				

Sample ID	N048160-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	144.455	1.0	10.00	137.0	74.1	75	125	145.2	0.482	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	**N048161-001C-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **158617**
Client ID:	**ZZZZZZ**	Batch ID: **90450**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/2/2021**	SeqNo: **4449711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.697	1.0	10.00	2.231	84.7	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID **N048160-001C-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**		Prep Date:					RunNo: **158704**	
Client ID: **ZZZZZZ**	Batch ID: **90469**	TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **12/4/2021**					SeqNo: **4455399**	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	142.756	1.0	10.00	137.0	57.1	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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-22-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 8:26:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211205A**	QC Batch: **R158636**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.3	0.084	1.0		mg/L	1	12/5/2021 01:13 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:**	MW-927-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 8:36:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211205A**	QC Batch: **R158636**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.4	0.084	1.0		mg/L	1	12/5/2021 01:29 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:**	MW-32-020-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 9:55:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	4.4	0.084	1.0		mg/L	1	12/9/2021 03:17 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:**	MW-32-035-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 9:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211205A**	QC Batch: **R158636**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.9	0.084	1.0		mg/L	1	12/5/2021 02:00 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:**	MW-42-030-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 11:51:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211205A**	QC Batch: **R158636**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.8	0.084	1.0		mg/L	1	12/5/2021 02:15 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:**	MW-42-055-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 11:24:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211205A**	QC Batch: **R158636**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/5/2021 02:31 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:**	MW-42-065-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 10:57:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211205A**	QC Batch: **R158636**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/5/2021 03:18 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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID **MB-R158636**	SampType: **MBLK**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158636**
Client ID: **PBW**	Batch ID: **R158636**	TestNo: **SM 5310C**		Analysis Date: **12/5/2021**	SeqNo: **4451873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID **LCS-R158636**	SampType: **LCS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158636**
Client ID: **LCSW**	Batch ID: **R158636**	TestNo: **SM 5310C**		Analysis Date: **12/5/2021**	SeqNo: **4451874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	5.140	1.0	5.000	0	103	85	115				

Sample ID **N048161-004D-MS**	SampType: **MS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158636**
Client ID: **ZZZZZZ**	Batch ID: **R158636**	TestNo: **SM 5310C**		Analysis Date: **12/5/2021**	SeqNo: **4451911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	255.810	50	250.0	0	102	75	125				

Sample ID **N048161-004D-MSD**	SampType: **MSD**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158636**
Client ID: **ZZZZZZ**	Batch ID: **R158636**	TestNo: **SM 5310C**		Analysis Date: **12/5/2021**	SeqNo: **4451912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	267.005	50	250.0	0	107	75	125	255.8	4.28	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID **MB-R158784**	SampType: **MBLK**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **PBW**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID **LCS-R158784**	SampType: **LCS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **LCSW**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.653	1.0	5.000	0	93.1	85	115				

Sample ID **N048208-013F-MS**	SampType: **MS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **ZZZZZZ**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	239.145	50	250.0	0	95.7	75	125				

Sample ID **N048208-013F-MSD**	SampType: **MSD**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **ZZZZZZ**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	239.125	50	250.0	0	95.6	75	125	239.1	0.00836	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:**	MW-22-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 8:26:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**				PrepDate:	**12/1/2021**	Analyst: **DJ**
Iron	8200	13	20		µg/L	1	12/1/2021 02:32 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:**	MW-927-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 8:36:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**				PrepDate:	**12/1/2021**	Analyst: **DJ**
Iron	8000	13	20		µg/L	1	12/1/2021 02:37 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:**	MW-32-020-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 9:55:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**				PrepDate:	**12/1/2021**	Analyst: **DJ**
Iron	4500	13	20		µg/L	1	12/1/2021 02:42 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:**	MW-32-035-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 9:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**				PrepDate:	**12/1/2021**	Analyst: **DJ**
Iron	12000	13	20		µg/L	1	12/1/2021 02:47 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:**	MW-42-030-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 11:51:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**				PrepDate:	**12/1/2021**	Analyst: **DJ**
Iron	760	13	20		µg/L	1	12/1/2021 02:52 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:**	MW-42-055-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 11:24:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**				PrepDate:	**12/1/2021**	Analyst: **DJ**
Iron	240	13	20		µg/L	1	12/1/2021 02:56 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:**	MW-42-065-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 10:57:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211201A**	QC Batch: **90442**			PrepDate:	**12/1/2021**		Analyst: **DJ**
Iron	46	13	20		µg/L	1	12/1/2021 03:00 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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-90442	SampType:	MBLK	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158543
Client ID:	PBW	Batch ID:	90442	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2021	SeqNo:	4446643

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

Sample ID	LCS-90442	SampType:	LCS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158543
Client ID:	LCSW	Batch ID:	90442	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2021	SeqNo:	4446644

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.714	20	100.0	0	103	85	115				

Sample ID	N048156-001C-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158543
Client ID:	ZZZZZZ	Batch ID:	90442	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2021	SeqNo:	4446648

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	110.114	20	100.0	19.75	90.4	75	125				

Sample ID	N048156-001C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158543
Client ID:	ZZZZZZ	Batch ID:	90442	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/1/2021	SeqNo:	4446649

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	109.032	20	100.0	19.75	89.3	75	125	110.1	0.987	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048162-001

Client Sample ID: MW-22-Q421
Collection Date: 11/30/2021 8:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:		**12/1/2021**	Analyst: **CEI**
Arsenic	22	0.050	0.10		µg/L	1	12/2/2021 04:57 PM
Barium	87	0.083	1.0		µg/L	1	12/2/2021 04:57 PM
Manganese	2500	0.66	12		µg/L	25	12/3/2021 11:46 AM
Molybdenum	36	0.12	0.50		µg/L	1	12/2/2021 04:57 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 04:57 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:**	MW-927-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 8:36:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:	**12/1/2021**		Analyst: **CEI**
Arsenic	24	0.050	0.10		µg/L	1	12/2/2021 05:09 PM
Barium	92	0.083	1.0		µg/L	1	12/2/2021 05:09 PM
Manganese	2500	0.66	12		µg/L	25	12/3/2021 11:58 AM
Molybdenum	38	0.12	0.50		µg/L	1	12/2/2021 05:09 PM
Selenium	ND	0.044	0.50		µg/L	1	12/9/2021 06:10 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:**	MW-33-090-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 2:55:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:		**12/1/2021**	Analyst: **CEI**
Molybdenum	8.1	0.12	0.50		µg/L	1	12/2/2021 05:21 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 05:21 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
Lab Order: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048162-004

Client Sample ID: MW-32-020-Q421
Collection Date: 11/30/2021 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:		**12/1/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/2/2021 05:45 PM
Barium	110	0.083	1.0		µg/L	1	12/2/2021 05:45 PM
Manganese	200	0.13	2.5		µg/L	5	12/2/2021 05:51 PM
Molybdenum	100	0.12	0.50		µg/L	1	12/2/2021 05:45 PM
Selenium	2.2	0.044	0.50		µg/L	1	12/2/2021 05:45 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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-035-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 9:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-006		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211202B** QC Batch: **90450** PrepDate: **12/1/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	15	0.050	0.10		µg/L	1	12/2/2021 05:57 PM
Barium	160	0.083	1.0		µg/L	1	12/2/2021 05:57 PM
Manganese	590	0.13	2.5		µg/L	5	12/2/2021 06:03 PM
Molybdenum	9.6	0.12	0.50		µg/L	1	12/2/2021 05:57 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 05:57 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:**	MW-42-030-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 11:51:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-008		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211203B** QC Batch: **90450** PrepDate: **12/1/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	0.72	0.050	0.10		µg/L	1	12/3/2021 12:04 PM
Barium	160	0.083	1.0		µg/L	1	12/2/2021 06:09 PM
Manganese	140	0.026	0.50		µg/L	1	12/2/2021 06:09 PM
Molybdenum	17	0.12	0.50		µg/L	1	12/2/2021 06:09 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 06:09 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
Lab Order: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048162-009

Client Sample ID: MW-42-055-Q421
Collection Date: 11/30/2021 11:24:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:		**12/1/2021**	Analyst: **CEI**
Arsenic	13	0.050	0.10		µg/L	1	12/2/2021 06:20 PM
Barium	150	0.083	1.0		µg/L	1	12/2/2021 06:20 PM
Manganese	210	0.13	2.5		µg/L	5	12/2/2021 06:26 PM
Molybdenum	3.9	0.12	0.50		µg/L	1	12/2/2021 06:20 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 06:20 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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048162-011

Client Sample ID: MW-42-065-Q421
Collection Date: 11/30/2021 10:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211202B**	QC Batch: **90450**			PrepDate:		**12/1/2021**	Analyst: **CEI**
Arsenic	6.6	0.050	0.10		µg/L	1	12/2/2021 06:32 PM
Barium	69	0.083	1.0		µg/L	1	12/2/2021 06:32 PM
Manganese	1600	0.66	12		µg/L	25	12/3/2021 12:10 PM
Molybdenum	7.7	0.12	0.50		µg/L	1	12/2/2021 06:32 PM
Selenium	ND	0.044	0.50		µg/L	1	12/2/2021 06:32 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:**	MW-929-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 3:05:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Molybdenum	8.2	0.12	0.50		µg/L	1	12/4/2021 06:15 PM
Selenium	ND	0.044	0.50		µg/L	1	12/4/2021 06:15 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:**	MW-33-150-Q421
Lab Order:	N048162	**Collection Date:**	11/30/2021 2:52:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048162-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:		**12/2/2021**	Analyst: **CEI**
Molybdenum	39	0.12	0.50		µg/L	1	12/4/2021 06:27 PM
Selenium	0.63	0.044	0.50		µg/L	1	12/9/2021 06:04 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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90450**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/1/2021**	RunNo: **158617**
Client ID: **PBW**	Batch ID: **90450**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/2/2021**	SeqNo: **4451600**

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									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-90450**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/1/2021**	RunNo: **158617**
Client ID: **LCSW**	Batch ID: **90450**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/2/2021**	SeqNo: **4451601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.194	0.10	10.00	0	102	85	115				
Barium	9.609	1.0	10.00	0	96.1	85	115				
Manganese	98.377	0.50	100.0	0	98.4	85	115				
Molybdenum	9.891	0.50	10.00	0	98.9	85	115				
Selenium	9.950	0.50	10.00	0	99.5	85	115				

Sample ID **N048161-001C-MS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/1/2021**	RunNo: **158617**
Client ID: **ZZZZZZ**	Batch ID: **90450**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/2/2021**	SeqNo: **4451607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.515	0.10	10.00	9.000	105	75	125				
Barium	72.058	1.0	10.00	59.34	127	75	125				S
Manganese	95.780	0.50	100.0	9.459	86.3	75	125				
Selenium	16.426	0.50	10.00	5.682	107	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048161-001C-MS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158617
Client ID:	ZZZZZZ	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4451608

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	405.909	2.5	10.00	380.2	257	75	125				S

Sample ID	N048161-001C-MSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158617
Client ID:	ZZZZZZ	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4451611

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.119	0.10	10.00	9.000	101	75	125	19.52	2.05	20	
Barium	69.573	1.0	10.00	59.34	102	75	125	72.06	3.51	20	
Manganese	95.157	0.50	100.0	9.459	85.7	75	125	95.78	0.653	20	
Selenium	16.827	0.50	10.00	5.682	111	75	125	16.43	2.41	20	

Sample ID	N048161-001C-MSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/1/2021	RunNo:	158617
Client ID:	ZZZZZZ	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4451612

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	394.938	2.5	10.00	380.2	147	75	125	405.9	2.74	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90469**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/2/2021**	RunNo: **158704**
Client ID: **PBW**	Batch ID: **90469**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/4/2021**	SeqNo: **4455527**

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									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.061	0.50									

Sample ID **LCS-90469**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/2/2021**	RunNo: **158704**
Client ID: **LCSW**	Batch ID: **90469**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/4/2021**	SeqNo: **4455528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.490	0.10	10.00	0	105	85	115				
Barium	9.591	1.0	10.00	0	95.9	85	115				
Manganese	96.609	0.50	100.0	0	96.6	85	115				
Molybdenum	10.023	0.50	10.00	0	100	85	115				
Selenium	10.589	0.50	10.00	0	106	85	115				

Sample ID **N048160-001C-MS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/2/2021**	RunNo: **158704**
Client ID: **ZZZZZZ**	Batch ID: **90469**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/4/2021**	SeqNo: **4455534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.619	0.10	10.00	0.6457	99.7	75	125				
Barium	61.858	1.0	10.00	53.84	80.2	75	125				
Manganese	86.460	0.50	100.0	0.1993	86.3	75	125				
Molybdenum	15.445	0.50	10.00	4.965	105	75	125				
Selenium	19.422	0.50	10.00	9.644	97.8	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **N048160-001C-MSD** SampType: **MSD** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/2/2021** RunNo: **158704**
Client ID: **ZZZZZZ** Batch ID: **90469** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/4/2021** SeqNo: **4455536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.905	0.10	10.00	0.6457	103	75	125	10.62	2.66	20	
Barium	62.397	1.0	10.00	53.84	85.6	75	125	61.86	0.868	20	
Manganese	85.663	0.50	100.0	0.1993	85.5	75	125	86.46	0.926	20	
Molybdenum	15.322	0.50	10.00	4.965	104	75	125	15.45	0.802	20	
Selenium	18.775	0.50	10.00	9.644	91.3	75	125	19.42	3.39	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: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048161-001C-PS	SampType:	PS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:		RunNo:	158617
Client ID:	ZZZZZZ	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4451605

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.378	0.10	10.00	9.000	104	80	120				
Barium	70.236	1.0	10.00	59.34	109	80	120				
Manganese	95.415	0.50	100.0	9.459	86.0	80	120				
Selenium	16.438	0.50	10.00	5.682	108	80	120				

Sample ID	N048161-001C-PS	SampType:	PS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:		RunNo:	158617
Client ID:	ZZZZZZ	Batch ID:	90450	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/2/2021	SeqNo:	4451606

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	395.265	2.5	10.00	380.2	150	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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048162
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048160-001C-PS	SampType:	PS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:		RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455532

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.041	0.10	10.00	0.6457	104	80	120				
Barium	60.752	1.0	10.00	53.84	69.1	80	120				S
Manganese	89.059	0.50	100.0	0.1993	88.9	80	120				
Molybdenum	15.350	0.50	10.00	4.965	104	80	120				
Selenium	19.328	0.50	10.00	9.644	96.8	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		

N048162

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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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		Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD		RTNE		Y N
Address: Roseville, CA 95661	Email: [redacted]	Address:	Geotracker		RWQCB	✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec		CalTrans		2. Headspace
Submitted By:			Others	✓	LEVEL III		3. Container Intact ✓ ✓
Title: Field Tech	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Specify: RWQCB		LEVEL IV		4. Seal Present
Signature: Date: 11/30/21	Sampled By: Nara Tay		Global ID:		Regulatory		5. IR number 3
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				Specify State:		6. Method of Cooling: ICE
Project Name: PG&E Topock - PCM	Signature:	Date: 11/30/21					Sample Temp: 2.4°C/2.3°C/2.8°C
Project Number: 30110373.4Q21GW							Courier: ASSET
							Tracking No.:

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 125 mL poly	Dissolved metals (SW6020) FF; HNO3 Arsenic, Barium, Iron, Manganese 500mL poly	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, 500mL poly	Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium 500mL poly	Total Organic Carbon (SM5310C); H2SO4 3x40 mL VOA	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048162-01	MW-22-Q421	11/30/2021	8:26		X	X	X	X	X	X	E	6	P	BNS	
2	-02	MW-927-Q421	11/30/2021	8:36		X	X	X	X	X	X	E	6	P	BNS	
3	-03	MW-33-090-Q421	11/30/2021	14:55		X	X		X	X	X	E	3	P	BNS	
4	-04	MW-32-020-Q421	11/30/2021	9:55		X	X	X	X	X	X	E	6	P	BNS	
5	-05	MW-32-020-EB-Q421	11/30/2021	10:05		X						E	1	P	BNS	
6	-06	MW-32-035-Q421	11/30/2021	9:25		X	X	X	X	X	X	E	6	P	BNS	
7	-07	MW-32-035-EB-Q421	11/30/2021	9:35		X						E	1	P	BNS	
8	-08	MW-42-030-Q421	11/30/2021	11:51		X	X	X	X	X	X	E	6	P	BNS	
9	-09	MW-42-055-Q421	11/30/2021	11:24		X	X	X	X	X	X	E	6	P	BNS	
10	-10	MW-42-055-EB-Q421	11/30/2021	11:34		X						E	1	P	BNS	
11	-11	MW-42-065-Q421	11/30/2021	10:57		X	X	X	X	X	X	E	6	P	BNS	
12	-12	MW-42-065-EB-Q421	11/30/2021	11:07		X						E	1	P	BNS	
13	-13	EB-718-Q421	11/30/2021	15:30		X						E	1	P	BNS	
14	-14	MW-929-Q421	11/30/2021	15:05		X	X		X	X	X	E	3	P	BNS	
15	-15	MW-33-150-Q421	11/30/2021	14:52		X	X		X	X		E	3	P	BNS	

Reliquished by (Signature and Printed Name): Nara Tay Date/Time: 11/30/21 1630
Reliquished by (Signature and Printed Name): Sonia Deada Date/Time: 11/30/21 1630
Reliquished by (Signature and Printed Name): Sonia Deada Date/Time: 11/30/21 2000
Reliquished by (Signature and Printed Name): Sonia Deada Date/Time: 11/30/21 2000
Reliquished by (Signature and Printed Name): Date/Time:
Reliquished 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
- [x] E = Routine 5-7 Workdays

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Plnt
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	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:	11/30/2021	Workorder:	N048162
Rep sample Temp (Deg C):	2.4/2.3/2.8	IR Gun ID:	3

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 By: GGJ GGarcia 12/1/2021

Reviewed By: MBC 12/8/2021

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048162

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/30/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048162-001A	MW-22-Q421	11/30/2021 8:26:00 AM	12/14/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-001B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048162-001C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048162-001D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048162-002A	MW-927-Q421	11/30/2021 8:36:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-002B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048162-002C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048162-002D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048162-003A	MW-33-090-Q421	11/30/2021 2:55:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-003B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048162-003C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048162

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/30/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048162-004A	MW-32-020-Q421	11/30/2021 9:55:00 AM	12/14/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-004B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048162-004C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048162-004D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048162-005A	MW-32-020-EB-Q421	11/30/2021 10:05:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-006A	MW-32-035-Q421	11/30/2021 9:25:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-006B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048162-006C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048162-006D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048162-007A	MW-32-035-EB-Q421	11/30/2021 9:35:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-008A	MW-42-030-Q421	11/30/2021 11:51:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-008B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048162-008C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048162

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/30/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048162-008C	MW-42-030-Q421	11/30/2021 11:51:00 AM	12/14/2021	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048162-008D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048162-009A	MW-42-055-Q421	11/30/2021 11:24:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-009B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048162-009C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048162-009D			12/14/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048162-010A	MW-42-055-EB-Q421	11/30/2021 11:34:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-011A	MW-42-065-Q421	11/30/2021 10:57:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-011B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048162-011C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048162

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 11/30/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048162-011D	MW-42-065-Q421	11/30/2021 10:57:00 AM	12/14/2021	Groundwater	SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048162-012A	MW-42-065-EB-Q421	11/30/2021 11:07:00 AM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-013A	EB-718-Q421	11/30/2021 3:30:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-014A	MW-929-Q421	11/30/2021 3:05:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-014B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048162-014C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048162-015A	MW-33-150-Q421	11/30/2021 2:52:00 PM	12/14/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048162-015B			12/14/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048162-015C			12/14/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/14/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048162-016A	FOLDER	12/14/2021	12/14/2021		Folder	Folder	☐	☐	☐	LAB
			12/14/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/14/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Nara Tep

06-Dec-21

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**SM4500-NO3F**		
N048162-001B / MW-22-Q421	Groundwater	11/30/2021 8:26:00 AM	8OZP	1		
N048162-002B / MW-927-Q421	Groundwater	11/30/2021 8:36:00 AM	8OZP	1		
N048162-003B / MW-33-090-Q421	Groundwater	11/30/2021 2:55:00 PM	8OZP	1		
N048162-004B / MW-32-020-Q421	Groundwater	11/30/2021 9:55:00 AM	8OZP	1		
N048162-006B / MW-32-035-Q421	Groundwater	11/30/2021 9:25:00 AM	8OZP	1		
N048162-008B / MW-42-030-Q421	Groundwater	11/30/2021 11:51:00 AM	8OZP	1		
N048162-009B / MW-42-055-Q421	Groundwater	11/30/2021 11:24:00 AM	8OZP	1		
N048162-011B / MW-42-065-Q421	Groundwater	11/30/2021 10:57:00 AM	8OZP	1		
N048162-014B / MW-929-Q421	Groundwater	11/30/2021 3:05:00 PM	8OZP	1		
N048162-015B / MW-33-150-Q421	Groundwater	11/30/2021 2:52:00 PM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48162A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555436438

	Date/Time		**Date/Time**
Relinquished by: YRJ	12/6/2021 1630	**Received by:**	
Relinquished by:		**Received by:**	

December 17, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048186

RE: PG&E Topock - PCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 01, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Chromium in QC sample N048160-001C-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Method Blank (MB) has detect greater than 1/2 the reporting limit for Arsenic. However, samples results for this analyte were either none-detect (ND) or greater than 5x the Method Blank detection therefore reanalysis of the samples was not necessary.

Analytical Comments for SM 5310C:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples

N048222-008D-MS/MSD at 1x dilution possibly due to matrix interference. QC samples were diluted and recovery passed criteria. Thus, sample reference N048222-008D and MS/MSD were reported at 5x dilution. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N048208-013F-MS/MSD at lower dilutions possibly due to matrix interference. QC samples were further diluted and recovery passed criteria. Thus, sample reference N048208-013F and MS/MSD were reported at 50x dilution. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048186
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048186-001A	MW-27-020-Q421	Groundwater	12/1/2021 9:38:00 AM	12/1/2021	12/17/2021
N048186-001B	MW-27-020-Q421	Groundwater	12/1/2021 9:38:00 AM	12/1/2021	12/17/2021
N048186-001C	MW-27-020-Q421	Groundwater	12/1/2021 9:38:00 AM	12/1/2021	12/17/2021
N048186-001D	MW-27-020-Q421	Groundwater	12/1/2021 9:38:00 AM	12/1/2021	12/17/2021
N048186-002A	MW-27-020-EB-Q421	Groundwater	12/1/2021 9:00:00 AM	12/1/2021	12/17/2021
N048186-003A	MW-27-060-Q421	Groundwater	12/1/2021 10:20:00 AM	12/1/2021	12/17/2021
N048186-003B	MW-27-060-Q421	Groundwater	12/1/2021 10:20:00 AM	12/1/2021	12/17/2021
N048186-003C	MW-27-060-Q421	Groundwater	12/1/2021 10:20:00 AM	12/1/2021	12/17/2021
N048186-003D	MW-27-060-Q421	Groundwater	12/1/2021 10:20:00 AM	12/1/2021	12/17/2021
N048186-004A	MW-27-060-EB-Q421	Groundwater	12/1/2021 9:50:00 AM	12/1/2021	12/17/2021
N048186-005A	MW-27-085-Q421	Groundwater	12/1/2021 10:56:00 AM	12/1/2021	12/17/2021
N048186-005B	MW-27-085-Q421	Groundwater	12/1/2021 10:56:00 AM	12/1/2021	12/17/2021
N048186-005C	MW-27-085-Q421	Groundwater	12/1/2021 10:56:00 AM	12/1/2021	12/17/2021
N048186-005D	MW-27-085-Q421	Groundwater	12/1/2021 10:56:00 AM	12/1/2021	12/17/2021
N048186-006A	MW-27-085-EB-Q421	Groundwater	12/1/2021 10:32:00 AM	12/1/2021	12/17/2021
N048186-007A	MW-34-055-Q421	Groundwater	12/1/2021 12:56:00 PM	12/1/2021	12/17/2021
N048186-007B	MW-34-055-Q421	Groundwater	12/1/2021 12:56:00 PM	12/1/2021	12/17/2021
N048186-007C	MW-34-055-Q421	Groundwater	12/1/2021 12:56:00 PM	12/1/2021	12/17/2021
N048186-007D	MW-34-055-Q421	Groundwater	12/1/2021 12:56:00 PM	12/1/2021	12/17/2021
N048186-008A	MW-34-055-EB-Q421	Groundwater	12/1/2021 12:30:00 PM	12/1/2021	12/17/2021
N048186-009A	MW-34-080-Q421	Groundwater	12/1/2021 12:14:00 PM	12/1/2021	12/17/2021
N048186-009B	MW-34-080-Q421	Groundwater	12/1/2021 12:14:00 PM	12/1/2021	12/17/2021
N048186-009C	MW-34-080-Q421	Groundwater	12/1/2021 12:14:00 PM	12/1/2021	12/17/2021
N048186-009D	MW-34-080-Q421	Groundwater	12/1/2021 12:14:00 PM	12/1/2021	12/17/2021
N048186-010A	MW-34-080-EB-Q421	Groundwater	12/1/2021 11:50:00 AM	12/1/2021	12/17/2021
N048186-011A	MW-34-100-Q421	Groundwater	12/1/2021 11:34:00 AM	12/1/2021	12/17/2021
N048186-011B	MW-34-100-Q421	Groundwater	12/1/2021 11:34:00 AM	12/1/2021	12/17/2021
N048186-011C	MW-34-100-Q421	Groundwater	12/1/2021 11:34:00 AM	12/1/2021	12/17/2021
N048186-011D	MW-34-100-Q421	Groundwater	12/1/2021 11:34:00 AM	12/1/2021	12/17/2021

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048186
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048186-012A	MW-930-Q421	Groundwater	12/1/2021 11:44:00 AM	12/1/2021	12/17/2021
N048186-012B	MW-930-Q421	Groundwater	12/1/2021 11:44:00 AM	12/1/2021	12/17/2021
N048186-012C	MW-930-Q421	Groundwater	12/1/2021 11:44:00 AM	12/1/2021	12/17/2021
N048186-012D	MW-930-Q421	Groundwater	12/1/2021 11:44:00 AM	12/1/2021	12/17/2021
N048186-013A	MW-45-095a-Q421	Groundwater	12/1/2021 1:36:00 PM	12/1/2021	12/17/2021
N048186-013B	MW-45-095a-Q421	Groundwater	12/1/2021 1:36:00 PM	12/1/2021	12/17/2021
N048186-013C	MW-45-095a-Q421	Groundwater	12/1/2021 1:36:00 PM	12/1/2021	12/17/2021
N048186-013D	MW-45-095a-Q421	Groundwater	12/1/2021 1:36:00 PM	12/1/2021	12/17/2021
N048186-014A	EB-721-Q421	Groundwater	12/1/2021 1:55:00 PM	12/1/2021	12/17/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-020-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 9:38:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202C**	QC Batch: **R158612**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/2/2021 11:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/4/2021 06:39 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:**	MW-27-020-EB-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 9:00:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202C**	QC Batch: **R158612**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 12:59 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:**	MW-27-060-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 10:20:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202C**	QC Batch: **R158612**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 01:17 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/4/2021 06:51 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:**	MW-27-060-EB-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 9:50:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202C**	QC Batch: **R158612**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 01:36 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:**	MW-27-085-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 10:56:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203B**	QC Batch: **R158652**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/4/2021 02:06 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/4/2021 07:15 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:**	MW-27-085-EB-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 10:32:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202C**	QC Batch: **R158612**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 02:14 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:**	MW-34-055-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 12:56:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202C**	QC Batch: **R158612**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 02:52 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/4/2021 07:27 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:**	MW-34-055-EB-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 12:30:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202C**	QC Batch: **R158612**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 03:11 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:**	MW-34-080-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 12:14:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202C**	QC Batch: **R158612**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 03:30 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/4/2021 07:38 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:**	MW-34-080-EB-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 11:50:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202C**	QC Batch: **R158612**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 03:49 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:**	MW-34-100-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 11:34:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203B**	QC Batch: **R158652**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/4/2021 02:44 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/4/2021 07:50 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:**	MW-930-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 11:44:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203B**	QC Batch: **R158652**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/4/2021 03:03 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/4/2021 08:02 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:**	MW-45-095a-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 1:36:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202C** QC Batch: **R158612**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 05:05 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211204B** QC Batch: **90469**				PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/4/2021 08:38 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:**	EB-721-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 1:55:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202C**	QC Batch: **R158612**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 05:23 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
Work Order: N048186
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158612	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158612		
Client ID:	PBW	Batch ID:	R158612	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449524		
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-R158612	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158612		
Client ID:	LCSW	Batch ID:	R158612	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449525		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		4.779	0.20	5.000	0	95.6	90	110					

Sample ID	N048186-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158612		
Client ID:	ZZZZZZ	Batch ID:	R158612	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449529		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		0.980	0.20	1.000	0	98.0	90	110					

Sample ID	N048186-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158612		
Client ID:	ZZZZZZ	Batch ID:	R158612	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449530		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		1.025	0.20	1.000	0	102	90	110	0.9797	4.48	20		

Sample ID	N048183-004ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158612		
Client ID:	ZZZZZZ	Batch ID:	R158612	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449532		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		2.236	0.20						2.231	0.224	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: N048186
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048186-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158612**
Client ID: **ZZZZZZ** Batch ID: **R158612** TestNo: **EPA 218.6** Analysis Date: **12/3/2021** SeqNo: **4449541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.984	0.20	1.000	0	98.4	90	110				

Sample ID **N048186-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158612**
Client ID: **ZZZZZZ** Batch ID: **R158612** TestNo: **EPA 218.6** Analysis Date: **12/3/2021** SeqNo: **4449543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.981	0.20	1.000	0	98.1	90	110				

Sample ID **N048186-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158612**
Client ID: **ZZZZZZ** Batch ID: **R158612** TestNo: **EPA 218.6** Analysis Date: **12/3/2021** SeqNo: **4449545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.967	0.20	1.000	0	96.6	90	110				

Sample ID **N048186-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158612**
Client ID: **ZZZZZZ** Batch ID: **R158612** TestNo: **EPA 218.6** Analysis Date: **12/3/2021** SeqNo: **4449547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.993	0.20	1.000	0	99.3	90	110				

Sample ID **N048186-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158612**
Client ID: **ZZZZZZ** Batch ID: **R158612** TestNo: **EPA 218.6** Analysis Date: **12/3/2021** SeqNo: **4449551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.946	0.20	1.000	0	94.6	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: N048186
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048186-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158612
Client ID:	ZZZZZZ	Batch ID:	R158612	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4449553

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.991	0.20	1.000	0	99.1	90	110				

Sample ID	N048186-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158612
Client ID:	ZZZZZZ	Batch ID:	R158612	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4449555

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID	N048186-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158612
Client ID:	ZZZZZZ	Batch ID:	R158612	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4449557

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.964	0.20	1.000	0	96.4	90	110				

Sample ID	N048186-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158612
Client ID:	ZZZZZZ	Batch ID:	R158612	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4449561

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.957	0.20	1.000	0	95.7	90	110				

Sample ID	N048186-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158612
Client ID:	ZZZZZZ	Batch ID:	R158612	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4449563

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.965	0.20	1.000	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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048186
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R158652	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652		
Client ID:	LCSW	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452941		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.839	0.20	5.000	0	96.8	90	110						

Sample ID	MB-R158652	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652		
Client ID:	PBW	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452942		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	N048209-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652		
Client ID:	ZZZZZZ	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452944		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	22.713	0.40	10.00	12.88	98.3	90	110						

Sample ID	N048209-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652		
Client ID:	ZZZZZZ	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452945		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	22.390	0.40	10.00	12.88	95.1	90	110	22.71	1.43	20			

Sample ID	N048199-002ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652		
Client ID:	ZZZZZZ	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/4/2021	SeqNo:	4452948		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	2.327	0.20						2.361	1.44	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: N048186
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048186-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652
Client ID:	ZZZZZZ	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/4/2021	SeqNo:	4452962

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.715	1.0	5.000	0	94.3	90	110				

Sample ID	N048186-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652
Client ID:	ZZZZZZ	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/4/2021	SeqNo:	4452966

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.917	1.0	5.000	0	98.3	90	110				

Sample ID	N048186-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652
Client ID:	ZZZZZZ	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/4/2021	SeqNo:	4452968

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.881	1.0	5.000	0	97.6	90	110				

Sample ID	N048209-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652
Client ID:	ZZZZZZ	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/4/2021	SeqNo:	4452970

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.848	1.0	5.000	0	97.0	90	110				

Sample ID	N048210-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652
Client ID:	ZZZZZZ	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/4/2021	SeqNo:	4452972

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2085.840	40	1000	1181	90.5	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: N048186
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90469	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	PBW	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455394

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

Sample ID	LCS-90469	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	LCSW	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455395

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.405	1.0	10.00	0	104	85	115				

Sample ID	N048160-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455401

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	145.153	1.0	10.00	137.0	81.1	75	125				

Sample ID	N048160-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	144.455	1.0	10.00	137.0	74.1	75	125	145.2	0.482	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: N048186
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	**N048160-001C-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **158704**
Client ID:	**ZZZZZZ**	Batch ID: **90469**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/4/2021**	SeqNo: **4455399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	142.756	1.0	10.00	137.0	57.1	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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-020-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 9:38:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.0	0.084	1.0		mg/L	1	12/9/2021 03:33 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:**	MW-27-060-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 10:20:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.3	0.084	1.0		mg/L	1	12/9/2021 03:48 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:**	MW-27-085-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 10:56:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/9/2021 04:35 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:**	MW-34-055-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 12:56:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/9/2021 04:51 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:**	MW-34-080-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 12:14:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/9/2021 05:06 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:**	MW-34-100-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 11:34:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/9/2021 05:22 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:**	MW-930-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 11:44:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/9/2021 05:37 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:**	MW-45-095a-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 1:36:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211210A**	QC Batch: **R158818**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/10/2021 12:53 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: N048186
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID **MB-R158784**	SampType: **MBLK**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **PBW**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID **LCS-R158784**	SampType: **LCS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **LCSW**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.653	1.0	5.000	0	93.1	85	115				

Sample ID **N048208-013F-MS**	SampType: **MS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **ZZZZZZ**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	239.145	50	250.0	0	95.7	75	125				

Sample ID **N048208-013F-MSD**	SampType: **MSD**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **ZZZZZZ**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	239.125	50	250.0	0	95.6	75	125	239.1	0.00836	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: N048186
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID	MB-R158818	SampType:	MBLK	TestCode:	5310C_W_T_	Units:	mg/L	Prep Date:		RunNo:	158818
Client ID:	PBW	Batch ID:	R158818	TestNo:	SM 5310C			Analysis Date:	12/10/2021	SeqNo:	4460293

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID	LCS-R158818	SampType:	LCS	TestCode:	5310C_W_T_	Units:	mg/L	Prep Date:		RunNo:	158818
Client ID:	LCSW	Batch ID:	R158818	TestNo:	SM 5310C			Analysis Date:	12/10/2021	SeqNo:	4460294

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.795	1.0	5.000	0	95.9	85	115				

Sample ID	N048222-008D-MS	SampType:	MS	TestCode:	5310C_W_T_	Units:	mg/L	Prep Date:		RunNo:	158818
Client ID:	ZZZZZZ	Batch ID:	R158818	TestNo:	SM 5310C			Analysis Date:	12/10/2021	SeqNo:	4460318

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	33.966	5.0	25.00	10.61	93.4	75	125				

Sample ID	N048222-008D-MSD	SampType:	MSD	TestCode:	5310C_W_T_	Units:	mg/L	Prep Date:		RunNo:	158818
Client ID:	ZZZZZZ	Batch ID:	R158818	TestNo:	SM 5310C			Analysis Date:	12/10/2021	SeqNo:	4460319

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	34.161	5.0	25.00	10.61	94.2	75	125	33.97	0.572	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:**	MW-27-020-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 9:38:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211205A**	QC Batch: **90470**			PrepDate:	**12/2/2021**		Analyst: **DJ**
Iron	32	13	20		µg/L	1	12/5/2021 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-060-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 10:20:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90470**				PrepDate:	**12/2/2021**	Analyst: **DJ**
Iron	390	13	20		µg/L	1	12/5/2021 04:52 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:**	MW-27-085-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 10:56:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211205A**	QC Batch: **90470**			PrepDate:	**12/2/2021**		Analyst: **DJ**
Iron	170	13	20		µg/L	1	12/5/2021 05:34 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:**	MW-34-055-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 12:56:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90470**				PrepDate:	**12/2/2021**	Analyst: **DJ**
Iron	96	13	20		µg/L	1	12/5/2021 05:39 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:**	MW-34-080-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 12:14:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90470**				PrepDate:	**12/2/2021**	Analyst: **DJ**
Iron	350	13	20		µg/L	1	12/5/2021 05:43 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:**	MW-34-100-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 11:34:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211205A**	QC Batch: **90470**			PrepDate:	**12/2/2021**		Analyst: **DJ**
Iron	73	13	20		µg/L	1	12/5/2021 05:48 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:**	MW-930-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 11:44:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90470**				PrepDate:	**12/2/2021**	Analyst: **DJ**
Iron	52	13	20		µg/L	1	12/5/2021 05:53 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:**	MW-45-095a-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 1:36:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211205A**	QC Batch: **90470**			PrepDate:	**12/2/2021**		Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/5/2021 05:57 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: N048186
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N048186-001C-MS1	SampType:	MS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158643
Client ID:	ZZZZZZ	Batch ID:	90470	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452401

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	122.147	20	100.0	31.64	90.5	75	125				

Sample ID	N048186-001C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158643
Client ID:	ZZZZZZ	Batch ID:	90470	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452402

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	116.754	20	100.0	31.64	85.1	75	125	122.1	4.51	20	

Sample ID	MB-90470	SampType:	MBLK	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158643
Client ID:	PBW	Batch ID:	90470	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452462

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

Sample ID	LCS1-90470	SampType:	LCS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158643
Client ID:	LCSW	Batch ID:	90470	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452463

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	99.164	20	100.0	0	99.2	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	**Client Sample ID:**	MW-27-020-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 9:38:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-001		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211204B** QC Batch: **90469** PrepDate: **12/2/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	0.71	0.050	0.10		µg/L	1	12/4/2021 06:39 PM
Barium	55	0.083	1.0		µg/L	1	12/4/2021 06:39 PM
Manganese	9.4	0.026	0.50		µg/L	1	12/4/2021 06:39 PM
Molybdenum	5.9	0.12	0.50		µg/L	1	12/4/2021 06:39 PM
Selenium	ND	0.044	0.50		µg/L	1	12/4/2021 06:39 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:**	MW-27-060-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 10:20:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-003		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211204B** QC Batch: **90469** PrepDate: **12/2/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	12	0.050	0.10		µg/L	1	12/4/2021 06:51 PM
Barium	70	0.083	1.0		µg/L	1	12/4/2021 06:51 PM
Manganese	270	0.13	2.5		µg/L	5	12/4/2021 07:09 PM
Molybdenum	4.7	0.12	0.50		µg/L	1	12/4/2021 06:51 PM
Selenium	ND	0.044	0.50		µg/L	1	12/4/2021 06:51 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:**	MW-27-085-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 10:56:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-005		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211204B** QC Batch: **90469** PrepDate: **12/2/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/4/2021 07:15 PM
Barium	43	0.083	1.0		µg/L	1	12/4/2021 07:15 PM
Manganese	140	0.026	0.50		µg/L	1	12/4/2021 07:15 PM
Molybdenum	19	0.12	0.50		µg/L	1	12/4/2021 07:15 PM
Selenium	ND	0.044	0.50		µg/L	1	12/4/2021 07:15 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:**	MW-34-055-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 12:56:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Arsenic	4.0	0.050	0.10		µg/L	1	12/4/2021 07:27 PM
Barium	30	0.083	1.0		µg/L	1	12/4/2021 07:27 PM
Manganese	87	0.026	0.50		µg/L	1	12/4/2021 07:27 PM
Molybdenum	4.5	0.12	0.50		µg/L	1	12/4/2021 07:27 PM
Selenium	ND	0.044	0.50		µg/L	1	12/4/2021 07:27 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:**	MW-34-080-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 12:14:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**				PrepDate:	**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/4/2021 07:38 PM
Barium	36	0.083	1.0		µg/L	1	12/4/2021 07:38 PM
Manganese	74	0.026	0.50		µg/L	1	12/4/2021 07:38 PM
Molybdenum	12	0.12	0.50		µg/L	1	12/4/2021 07:38 PM
Selenium	ND	0.044	0.50		µg/L	1	12/4/2021 07:38 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:**	MW-34-100-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 11:34:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:		**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/4/2021 07:50 PM
Barium	23	0.083	1.0		µg/L	1	12/4/2021 07:50 PM
Manganese	92	0.026	0.50		µg/L	1	12/4/2021 07:50 PM
Molybdenum	59	0.12	0.50		µg/L	1	12/4/2021 07:50 PM
Selenium	ND	0.044	0.50		µg/L	1	12/4/2021 07:50 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:**	MW-930-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 11:44:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**				PrepDate:	**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/4/2021 08:02 PM
Barium	23	0.083	1.0		µg/L	1	12/4/2021 08:02 PM
Manganese	94	0.026	0.50		µg/L	1	12/4/2021 08:02 PM
Molybdenum	59	0.12	0.50		µg/L	1	12/4/2021 08:02 PM
Selenium	ND	0.044	0.50		µg/L	1	12/4/2021 08:02 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:**	MW-45-095a-Q421
Lab Order:	N048186	**Collection Date:**	12/1/2021 1:36:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048186-013		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211204B** QC Batch: **90469** PrepDate: **12/2/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/4/2021 08:38 PM
Barium	37	0.083	1.0		µg/L	1	12/4/2021 08:38 PM
Manganese	260	0.13	2.5		µg/L	5	12/4/2021 08:44 PM
Molybdenum	14	0.12	0.50		µg/L	1	12/4/2021 08:38 PM
Selenium	ND	0.044	0.50		µg/L	1	12/4/2021 08:38 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: N048186
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90469** SampType: **MBLK** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/2/2021** RunNo: **158704**
Client ID: **PBW** Batch ID: **90469** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/4/2021** SeqNo: **4455527**

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									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.061	0.50									

Sample ID **LCS-90469** SampType: **LCS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/2/2021** RunNo: **158704**
Client ID: **LCSW** Batch ID: **90469** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/4/2021** SeqNo: **4455528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.490	0.10	10.00	0	105	85	115				
Barium	9.591	1.0	10.00	0	95.9	85	115				
Manganese	96.609	0.50	100.0	0	96.6	85	115				
Molybdenum	10.023	0.50	10.00	0	100	85	115				
Selenium	10.589	0.50	10.00	0	106	85	115				

Sample ID **N048160-001C-MS** SampType: **MS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/2/2021** RunNo: **158704**
Client ID: **ZZZZZZ** Batch ID: **90469** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/4/2021** SeqNo: **4455534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.619	0.10	10.00	0.6457	99.7	75	125				
Barium	61.858	1.0	10.00	53.84	80.2	75	125				
Manganese	86.460	0.50	100.0	0.1993	86.3	75	125				
Molybdenum	15.445	0.50	10.00	4.965	105	75	125				
Selenium	19.422	0.50	10.00	9.644	97.8	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: N048186
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048160-001C-MSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455536

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.905	0.10	10.00	0.6457	103	75	125	10.62	2.66	20	
Barium	62.397	1.0	10.00	53.84	85.6	75	125	61.86	0.868	20	
Manganese	85.663	0.50	100.0	0.1993	85.5	75	125	86.46	0.926	20	
Molybdenum	15.322	0.50	10.00	4.965	104	75	125	15.45	0.802	20	
Selenium	18.775	0.50	10.00	9.644	91.3	75	125	19.42	3.39	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		

N048186

ASSET LABORATORIES
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Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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

| | | |

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:	12/1/2021	Workorder:	N048186
Rep sample Temp (Deg C):	4.6/4.9	IR Gun ID:	3
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:

For:

Checklist Completed By: YR GGarcia 12/2/2021

Reviewed By: MBC 12/8/2021

ASSET Laboratories

WORK ORDER Summary

08-Dec-21

WorkOrder: N048186

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/1/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048186-001A	MW-27-020-Q421	12/1/2021 9:38:00 AM	12/15/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048186-001B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048186-001C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048186-001D			12/15/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048186-002A	MW-27-020-EB-Q421	12/1/2021 9:00:00 AM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048186-003A	MW-27-060-Q421	12/1/2021 10:20:00 AM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048186-003B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048186-003C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048186-003D			12/15/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048186-004A	MW-27-060-EB-Q421	12/1/2021 9:50:00 AM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048186-005A	MW-27-085-Q421	12/1/2021 10:56:00 AM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048186-005B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048186-005C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-21

WorkOrder: N048186

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/1/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048186-005C	MW-27-085-Q421	12/1/2021 10:56:00 AM	12/15/2021	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048186-005D			12/15/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048186-006A	MW-27-085-EB-Q421	12/1/2021 10:32:00 AM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048186-007A	MW-34-055-Q421	12/1/2021 12:56:00 PM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048186-007B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048186-007C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048186-007D			12/15/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048186-008A	MW-34-055-EB-Q421	12/1/2021 12:30:00 PM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048186-009A	MW-34-080-Q421	12/1/2021 12:14:00 PM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048186-009B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048186-009C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-21

WorkOrder: N048186

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/1/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048186-009C	MW-34-080-Q421	12/1/2021 12:14:00 PM	12/15/2021	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048186-009D			12/15/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048186-010A	MW-34-080-EB-Q421	12/1/2021 11:50:00 AM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048186-011A	MW-34-100-Q421	12/1/2021 11:34:00 AM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048186-011B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048186-011C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048186-011D			12/15/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048186-012A	MW-930-Q421	12/1/2021 11:44:00 AM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048186-012B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048186-012C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048186-012D			12/15/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048186-013A	MW-45-095a-Q421	12/1/2021 1:36:00 PM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048186-013B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB

ASSET Laboratories

WORK ORDER Summary

08-Dec-21

WorkOrder: N048186

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/1/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048186-013C	MW-45-095a-Q421	12/1/2021 1:36:00 PM	12/15/2021	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048186-013D			12/15/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048186-014A	EB-721-Q421	12/1/2021 1:55:00 PM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048186-015A	FOLDER	12/15/2021	12/15/2021		Folder	Folder	☐	☐	☐	LAB
			12/15/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/15/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: NANA TEP

06-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: SM4500-NO3F		
N048186-001B / MW-27-020-Q421	Groundwater	12/1/2021 9:38:00 AM	8OZP	1		
N048186-003B / MW-27-060-Q421	Groundwater	12/1/2021 10:20:00 AM	8OZP	1		
N048186-005B / MW-27-085-Q421	Groundwater	12/1/2021 10:56:00 AM	8OZP	1		
N048186-007B / MW-34-055-Q421	Groundwater	12/1/2021 12:56:00 PM	8OZP	1		
N048186-009B / MW-34-080-Q421	Groundwater	12/1/2021 12:14:00 PM	8OZP	1		
N048186-011B / MW-34-100-Q421	Groundwater	12/1/2021 11:34:00 AM	8OZP	1		
N048186-012B / MW-930-Q421	Groundwater	12/1 ~~11/12~~/2021 11:44:00 AM	8OZP	1		
N048186-013B / MW-45-095a-Q421	Groundwater	12/1/2021 1:36:00 PM	8OZP	1		

YRJ 12/8/2021

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48186A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555436438 / 555436439

		Date/Time			Date/Time
Relinquished by:	YRJ	12/6/2021 1630	**Received by:**		
Relinquished by:			**Received by:**		

December 17, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048187

RE: PG&E Topock - RCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 01, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET Laboratories - Las Vegas.

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.

Subcontracted Analyses:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Chromium in QC sample N048160-001C-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Method Blank (MB) has detect greater than 1/2 the reporting limit for Arsenic. However, samples results for this analyte were either none-detect (ND) or greater than 5x the Method Blank detection therefore reanalysis of the samples was not necessary.

ASSET Laboratories

Date: *17-Dec-21*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048187
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048187-001A	MW-62-110-Q421	Groundwater	12/1/2021 2:25:00 PM	12/1/2021	12/17/2021
N048187-001B	MW-62-110-Q421	Groundwater	12/1/2021 2:25:00 PM	12/1/2021	12/17/2021
N048187-001C	MW-62-110-Q421	Groundwater	12/1/2021 2:25:00 PM	12/1/2021	12/17/2021
N048187-002A	MW-62-190-Q421	Groundwater	12/1/2021 2:15:00 PM	12/1/2021	12/17/2021
N048187-002B	MW-62-190-Q421	Groundwater	12/1/2021 2:15:00 PM	12/1/2021	12/17/2021
N048187-002C	MW-62-190-Q421	Groundwater	12/1/2021 2:15:00 PM	12/1/2021	12/17/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q421
Lab Order:	N048187	**Collection Date:**	12/1/2021 2:25:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048187-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202B**	QC Batch: **R158611**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/2/2021 09:12 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/4/2021 08:50 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:**	MW-62-190-Q421
Lab Order:	N048187	**Collection Date:**	12/1/2021 2:15:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202B** QC Batch: **R158611**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/2/2021 10:07 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211204B** QC Batch: **90469**				PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/4/2021 09:02 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: N048187
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R158611	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	LCSW	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449474

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.940	0.20	5.000	0	98.8	90	110				

Sample ID	MB-R158611	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	PBW	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449475

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

Sample ID	N048182-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449478

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.095	0.20						1.092	0.274	20	

Sample ID	N048188-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.956	0.20	5.000	9.727	105	90	110				

Sample ID	N048188-007AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.850	0.20	5.000	9.727	102	90	110	14.96	0.713	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: N048187
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048182-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.090	0.20	1.000	1.092	99.8	90	110				

Sample ID **N048162-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.153	1.0	5.000	0	103	90	110				

Sample ID **N048188-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.534	0.20	1.000	0.5059	103	90	110				

Sample ID **N048188-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.159	0.20	1.000	1.163	99.6	90	110				

Sample ID **N048188-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.288	0.20	1.000	0.3029	98.5	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: N048187
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048188-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449502

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.176	0.20	1.000	1.184	99.2	90	110				

Sample ID	N048188-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449504

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.445	0.20	1.000	0.4221	102	90	110				

Sample ID	N048188-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449506

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.555	0.20	1.000	0.5902	96.5	90	110				

Sample ID	N048188-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449508

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.989	0.20	1.000	0	98.9	90	110				

Sample ID	N048162-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449512

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.065	1.0	5.000	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: N048187
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048162-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.978	1.0	5.000	0	99.6	90	110				

Sample ID **N048187-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.044	1.0	5.000	0	101	90	110				

Sample ID **N048187-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158611**
Client ID: **ZZZZZZ**	Batch ID: **R158611**	TestNo: **EPA 218.6**		Analysis Date: **12/2/2021**	SeqNo: **4449518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.712	1.0	5.000	0.8280	97.7	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: N048187
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90469	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	PBW	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455394

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

Sample ID	LCS-90469	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	LCSW	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455395

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.405	1.0	10.00	0	104	85	115				

Sample ID	N048160-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455401

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	145.153	1.0	10.00	137.0	81.1	75	125				

Sample ID	N048160-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	144.455	1.0	10.00	137.0	74.1	75	125	145.2	0.482	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: N048187
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	N048160-001C-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455399

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	142.756	1.0	10.00	137.0	57.1	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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q421
Lab Order:	N048187	**Collection Date:**	12/1/2021 2:25:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048187-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**				PrepDate:	**12/2/2021**	Analyst: **CEI**
Arsenic	5.2	0.050	0.10		µg/L	1	12/4/2021 08:50 PM
Manganese	180	0.026	0.50		µg/L	1	12/4/2021 08:50 PM
Molybdenum	38	0.12	0.50		µg/L	1	12/4/2021 08:50 PM
Selenium	ND	0.044	0.50		µg/L	1	12/4/2021 08:50 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:**	MW-62-190-Q421
Lab Order:	N048187	**Collection Date:**	12/1/2021 2:15:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211204B**	QC Batch: **90469**			PrepDate:		**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/4/2021 09:02 PM
Manganese	570	0.13	2.5		µg/L	5	12/4/2021 09:08 PM
Molybdenum	29	0.12	0.50		µg/L	1	12/4/2021 09:02 PM
Selenium	ND	0.044	0.50		µg/L	1	12/4/2021 09:02 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: N048187
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	MB-90469	SampType:	MBLK	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	PBW	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455527

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.061	0.50									

Sample ID	LCS-90469	SampType:	LCS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	LCSW	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455528

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.490	0.10	10.00	0	105	85	115				
Manganese	96.609	0.50	100.0	0	96.6	85	115				
Molybdenum	10.023	0.50	10.00	0	100	85	115				
Selenium	10.589	0.50	10.00	0	106	85	115				

Sample ID	N048160-001C-MS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455534

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.619	0.10	10.00	0.6457	99.7	75	125				
Manganese	86.460	0.50	100.0	0.1993	86.3	75	125				
Molybdenum	15.445	0.50	10.00	4.965	105	75	125				
Selenium	19.422	0.50	10.00	9.644	97.8	75	125				

Sample ID	N048160-001C-MSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455536

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.905	0.10	10.00	0.6457	103	75	125	10.62	2.66	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: N048187
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048160-001C-MSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158704
Client ID:	ZZZZZZ	Batch ID:	90469	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/4/2021	SeqNo:	4455536

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	85.663	0.50	100.0	0.1993	85.5	75	125	86.46	0.926	20	
Molybdenum	15.322	0.50	10.00	4.965	104	75	125	15.45	0.802	20	
Selenium	18.775	0.50	10.00	9.644	91.3	75	125	19.42	3.39	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		

N048187

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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P: 702.307.2659 F: 702.307.2691
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P: 562.219.7435 F:562.219.7436
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CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: [illegible]	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: [illegible] pivox.com	P.O.#
Submitted By: [signature]		Phone: 949-727-1400, ext 200	Fax:
Title: Field Tech	Phone: 916-786-3302 Fax:		
Signature: [signature] Date: 12/1/21	Sampled By: Nara Tey		
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*		
Project Name: PG&E Topock - RCM	Signature: [signature] Date: 12/1/21		
Project Number: 30110373.4Q21GW			

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	✓	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact	✓	
Others	✓	LEVEL III		4. Seal Present		✓
Specify: RWQCB		LEVEL IV		5. IR number 3		
Global ID:		Regulatory		6. Method of Cooling: Ice		
		Specify State:		Sample Temp: 4.6°C		

Courier: ASSET
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Matrix	250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	125 mL poly: Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4	500mL poly: Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, Molybdenum, Selenium	500mL poly: Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium,	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048187-01	MW-62-110-Q421	12/1/2021	14:25		Ground	X	X	X	X	E	3	P	BNS	
2	-02	MW-62-190-Q421	12/1/2021	14:15		Ground	X	X	X	X	E	3	P	BNS	
3															
4															
5															
7															
8															
9															
10															
11															
12															
13															
14															

Matrix: Ground, Sediment, Potable, Soil, NPDES, Other Solid, Surface

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Nara Tey	12/1/21 16:11	Jonas Deada	12/1/21 16:11
Jonas Deada	12/1/21 18:25	Jonas Deada	12/1/21 18:25

Turn Around Time (TAT)

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

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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, *5% 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:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	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:	12/1/2021	Workorder:	N048187
Rep sample Temp (Deg C):	4.6	IR Gun ID:	3
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:

For:

Checklist Completed By: YR GGarcia 12/2/2021

Reviewed By: MBC 12/3/2021

ASSET Laboratories

WORK ORDER Summary

02-Dec-21

WorkOrder: N048187

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/1/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048187-001A	MW-62-110-Q421	12/1/2021 2:25:00 PM	12/15/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048187-001B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048187-001C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048187-002A	MW-62-190-Q421	12/1/2021 2:15:00 PM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048187-002B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N048187-002C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048187-003A	FOLDER	12/15/2021	12/15/2021		Folder	Folder	☐	☐	☐	LAB
			12/15/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/15/2021		Folder	Folder	☐	☐	☐	LAB

December 21, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048188

RE: PG&E Topock - IM3, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 01, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.6 ug/L) and hexavalent chromium (0.51ug/L) for sample N048188-001 (CW-01D-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (2.4 ug/L) and hexavalent chromium (1.2 ug/L) for sample N048188-002 (CW-01M-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (17 ug/L) and hexavalent chromium (0.3 ug/L) for sample N048188-003 (CW-04D-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (2.1 ug/L) and hexavalent chromium (1.2 ug/L) for sample N048188-004 (CW-04M-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.9 ug/L) and hexavalent chromium (0.42 ug/L) for sample N048188-005 (OW-05D-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) is outside recovery criteria for Sodium in QC sample N048188-001C-MS2 since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) passed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (1.6 ug/L) and hexavalent chromium (0.51ug/L) for sample N048188-001 (CW-01D-Q421) 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 1.6 and 1.1 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (2.4 ug/L) and hexavalent chromium (1.2 ug/L) for sample N048188-002 (CW-01M-Q421) 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 2.4 and 1.8 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (17 ug/L) and hexavalent chromium (0.3 ug/L) for sample N048188-003 (CW-04D-Q421) 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 13 and 10 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (2.1 ug/L) and hexavalent chromium (1.2 ug/L) for sample N048188-004 (CW-04M-Q421) 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 1.9 and 1.7 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.9 ug/L) and hexavalent chromium (0.42 ug/L) for sample N048188-005 (OW-05D-Q421) 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 1.8 and 1.2 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab Order: N048188
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048188-001A	CW-01D-Q421	Groundwater	12/1/2021 12:56:00 PM	12/1/2021	12/21/2021
N048188-001B	CW-01D-Q421	Groundwater	12/1/2021 12:56:00 PM	12/1/2021	12/21/2021
N048188-001C	CW-01D-Q421	Groundwater	12/1/2021 12:56:00 PM	12/1/2021	12/21/2021
N048188-001D	CW-01D-Q421	Groundwater	12/1/2021 12:56:00 PM	12/1/2021	12/21/2021
N048188-002A	CW-01M-Q421	Groundwater	12/1/2021 11:53:00 AM	12/1/2021	12/21/2021
N048188-002B	CW-01M-Q421	Groundwater	12/1/2021 11:53:00 AM	12/1/2021	12/21/2021
N048188-002C	CW-01M-Q421	Groundwater	12/1/2021 11:53:00 AM	12/1/2021	12/21/2021
N048188-002D	CW-01M-Q421	Groundwater	12/1/2021 11:53:00 AM	12/1/2021	12/21/2021
N048188-003A	CW-04D-Q421	Groundwater	12/1/2021 2:52:00 PM	12/1/2021	12/21/2021
N048188-003B	CW-04D-Q421	Groundwater	12/1/2021 2:52:00 PM	12/1/2021	12/21/2021
N048188-003C	CW-04D-Q421	Groundwater	12/1/2021 2:52:00 PM	12/1/2021	12/21/2021
N048188-003D	CW-04D-Q421	Groundwater	12/1/2021 2:52:00 PM	12/1/2021	12/21/2021
N048188-004A	CW-04M-Q421	Groundwater	12/1/2021 2:17:00 PM	12/1/2021	12/21/2021
N048188-004B	CW-04M-Q421	Groundwater	12/1/2021 2:17:00 PM	12/1/2021	12/21/2021
N048188-004C	CW-04M-Q421	Groundwater	12/1/2021 2:17:00 PM	12/1/2021	12/21/2021
N048188-004D	CW-04M-Q421	Groundwater	12/1/2021 2:17:00 PM	12/1/2021	12/21/2021
N048188-005A	OW-05D-Q421	Groundwater	12/1/2021 10:45:00 AM	12/1/2021	12/21/2021
N048188-005B	OW-05D-Q421	Groundwater	12/1/2021 10:45:00 AM	12/1/2021	12/21/2021
N048188-005C	OW-05D-Q421	Groundwater	12/1/2021 10:45:00 AM	12/1/2021	12/21/2021
N048188-005D	OW-05D-Q421	Groundwater	12/1/2021 10:45:00 AM	12/1/2021	12/21/2021
N048188-006A	OW-05M-Q421	Groundwater	12/1/2021 10:03:00 AM	12/1/2021	12/21/2021
N048188-006B	OW-05M-Q421	Groundwater	12/1/2021 10:03:00 AM	12/1/2021	12/21/2021
N048188-006C	OW-05M-Q421	Groundwater	12/1/2021 10:03:00 AM	12/1/2021	12/21/2021
N048188-006D	OW-05M-Q421	Groundwater	12/1/2021 10:03:00 AM	12/1/2021	12/21/2021
N048188-007A	OW-05S-Q421	Groundwater	12/1/2021 9:19:00 AM	12/1/2021	12/21/2021
N048188-007B	OW-05S-Q421	Groundwater	12/1/2021 9:19:00 AM	12/1/2021	12/21/2021
N048188-007C	OW-05S-Q421	Groundwater	12/1/2021 9:19:00 AM	12/1/2021	12/21/2021
N048188-007D	OW-05S-Q421	Groundwater	12/1/2021 9:19:00 AM	12/1/2021	12/21/2021
N048188-008A	EB-722-Q421	Groundwater	12/1/2021 3:10:00 PM	12/1/2021	12/21/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-01D-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 12:56:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211204B**	QC Batch: **90516**			PrepDate:	**12/4/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	12/5/2021

Qualifiers:

B	Analyte detected in 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-01M-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 11:53:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211204B**	QC Batch: **90516**			PrepDate:	**12/4/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	12/5/2021

Qualifiers:

B	Analyte detected in 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-04D-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 2:52:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211204B**	QC Batch: **90516**			PrepDate:	**12/4/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	12/5/2021

Qualifiers:

B	Analyte detected in 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-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 2:17:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211204B**	QC Batch: **90516**			PrepDate:	**12/4/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4200	50	50		mg/L	1	12/5/2021

Qualifiers:

B	Analyte detected in 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-05D-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 10:45:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211204B**	QC Batch: **90516**			PrepDate:	**12/4/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	12/5/2021

Qualifiers:

B	Analyte detected in 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-05M-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 10:03:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211204B**	QC Batch: **90516**			PrepDate:	**12/4/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	12/5/2021

Qualifiers:

B	Analyte detected in 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-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 9:19:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211204B**	QC Batch: **90516**			PrepDate:	**12/4/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	12/5/2021

Qualifiers:

B	Analyte detected in 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: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-90516	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/4/2021	RunNo:	158672
Client ID:	LCSW	Batch ID:	90516	TestNo:	SM2540C			Analysis Date:	12/5/2021	SeqNo:	4453685

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	957.000	10	1000	0	95.7	80	120				

Sample ID	MB-90516	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/4/2021	RunNo:	158672
Client ID:	PBW	Batch ID:	90516	TestNo:	SM2540C			Analysis Date:	12/5/2021	SeqNo:	4453686

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	N048188-001D-DUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/4/2021	RunNo:	158672
Client ID:	ZZZZZZ	Batch ID:	90516	TestNo:	SM2540C			Analysis Date:	12/5/2021	SeqNo:	4453688

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4100.000	50						4005	2.34	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:**	CW-01D-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 12:56:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202B**	QC Batch: **R158611**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	0.51	0.025	0.20		µg/L	1	12/2/2021 05:32 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90482**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	1.6	0.035	1.0		µg/L	1	12/5/2021 03:02 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-01M-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 11:53:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202B**	QC Batch: **R158611**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1.2	0.025	0.20		µg/L	1	12/2/2021 05:51 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90482**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	2.4	0.035	1.0		µg/L	1	12/5/2021 04:07 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-04D-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 2:52:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202B**	QC Batch: **R158611**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	0.30	0.025	0.20		µg/L	1	12/2/2021 06:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90482**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	17	0.035	1.0		µg/L	1	12/5/2021 04:19 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-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 2:17:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202B**	QC Batch: **R158611**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1.2	0.025	0.20		µg/L	1	12/2/2021 06:57 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90482**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	2.1	0.035	1.0		µg/L	1	12/5/2021 04:31 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-05D-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 10:45:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202B**	QC Batch: **R158611**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	0.42	0.025	0.20		µg/L	1	12/2/2021 07:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90482**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	1.9	0.035	1.0		µg/L	1	12/5/2021 04:42 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-05M-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 10:03:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202B**	QC Batch: **R158611**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	0.59	0.025	0.20		µg/L	1	12/2/2021 07:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90482**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	1.1	0.035	1.0		µg/L	1	12/5/2021 04:54 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-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 9:19:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202B**	QC Batch: **R158611**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	9.7	0.025	0.20		µg/L	1	12/2/2021 01:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90482**			PrepDate:	**12/2/2021**		Analyst: **CEI**
Chromium	10	0.035	1.0		µg/L	1	12/5/2021 05:18 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:**	EB-722-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 3:10:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211202B**	QC Batch: **R158611**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/2/2021 07:56 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: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R158611	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611		
Client ID:	LCSW	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449474		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.940	0.20	5.000	0	98.8	90	110						

Sample ID	MB-R158611	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611		
Client ID:	PBW	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449475		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	N048182-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611		
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449478		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.095	0.20						1.092	0.274	20			

Sample ID	N048188-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611		
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449479		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	14.956	0.20	5.000	9.727	105	90	110						

Sample ID	N048188-007AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611		
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449480		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	14.850	0.20	5.000	9.727	102	90	110	14.96	0.713	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: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048182-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158611**
Client ID: **ZZZZZZ** Batch ID: **R158611** TestNo: **EPA 218.6** Analysis Date: **12/2/2021** SeqNo: **4449485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.090	0.20	1.000	1.092	99.8	90	110				

Sample ID **N048162-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158611**
Client ID: **ZZZZZZ** Batch ID: **R158611** TestNo: **EPA 218.6** Analysis Date: **12/2/2021** SeqNo: **4449487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.153	1.0	5.000	0	103	90	110				

Sample ID **N048188-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158611**
Client ID: **ZZZZZZ** Batch ID: **R158611** TestNo: **EPA 218.6** Analysis Date: **12/2/2021** SeqNo: **4449493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.534	0.20	1.000	0.5059	103	90	110				

Sample ID **N048188-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158611**
Client ID: **ZZZZZZ** Batch ID: **R158611** TestNo: **EPA 218.6** Analysis Date: **12/2/2021** SeqNo: **4449495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.159	0.20	1.000	1.163	99.6	90	110				

Sample ID **N048188-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158611**
Client ID: **ZZZZZZ** Batch ID: **R158611** TestNo: **EPA 218.6** Analysis Date: **12/2/2021** SeqNo: **4449500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.288	0.20	1.000	0.3029	98.5	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: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048188-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449502

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.176	0.20	1.000	1.184	99.2	90	110				

Sample ID	N048188-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449504

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.445	0.20	1.000	0.4221	102	90	110				

Sample ID	N048188-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449506

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.555	0.20	1.000	0.5902	96.5	90	110				

Sample ID	N048188-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449508

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.989	0.20	1.000	0	98.9	90	110				

Sample ID	N048162-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449512

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.065	1.0	5.000	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: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048162-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449514

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.978	1.0	5.000	0	99.6	90	110				

Sample ID	N048187-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449516

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.044	1.0	5.000	0	101	90	110				

Sample ID	N048187-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158611
Client ID:	ZZZZZZ	Batch ID:	R158611	TestNo:	EPA 218.6			Analysis Date:	12/2/2021	SeqNo:	4449518

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.712	1.0	5.000	0.8280	97.7	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: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90482	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158713
Client ID:	PBW	Batch ID:	90482	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455729

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

Sample ID	LCS-90482	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158713
Client ID:	LCSW	Batch ID:	90482	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455730

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.233	1.0	10.00	0	102	85	115				

Sample ID	N048188-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158713
Client ID:	ZZZZZZ	Batch ID:	90482	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455736

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.940	1.0	10.00	1.613	93.3	75	125				

Sample ID	N048188-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158713
Client ID:	ZZZZZZ	Batch ID:	90482	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455738

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.013	1.0	10.00	1.613	94.0	75	125	10.94	0.668	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-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 12:56:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211202A**	QC Batch: **R158595**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	73	1.2	5.0		mg/L	1	12/2/2021 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-01M-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 11:53:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211202A**	QC Batch: **R158595**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	90	1.2	5.0		mg/L	1	12/2/2021 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-04D-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 2:52:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211202A**	QC Batch: **R158595**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	72	1.2	5.0		mg/L	1	12/2/2021 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-04M-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 2:17:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211202A**	QC Batch: **R158595**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	57	1.2	5.0		mg/L	1	12/2/2021 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05D-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 10:45:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211202A**	QC Batch: **R158595**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	76	1.2	5.0		mg/L	1	12/2/2021 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05M-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 10:03:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211202A**	QC Batch: **R158595**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	79	1.2	5.0		mg/L	1	12/2/2021 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05S-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 9:19:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211202A**	QC Batch: **R158595**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	48	1.2	5.0		mg/L	1	12/2/2021 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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R158595**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158595**
Client ID: **LCSW**	Batch ID: **R158595**	TestNo: **SM 2320 B**		Analysis Date: **12/2/2021**	SeqNo: **4449056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	99.165	5.0	100.0	0	99.2	85	115				

Sample ID **MB-R158595**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158595**
Client ID: **PBW**	Batch ID: **R158595**	TestNo: **SM 2320 B**		Analysis Date: **12/2/2021**	SeqNo: **4449057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N048188-001DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158595**
Client ID: **ZZZZZZ**	Batch ID: **R158595**	TestNo: **SM 2320 B**		Analysis Date: **12/2/2021**	SeqNo: **4449059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	73.069	5.0						73.07	0	30	

Sample ID **N048188-002DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158595**
Client ID: **ZZZZZZ**	Batch ID: **R158595**	TestNo: **SM 2320 B**		Analysis Date: **12/2/2021**	SeqNo: **4449061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	187.891	5.0	100.0	89.77	98.1	75	125				

Sample ID **N048188-002DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158595**
Client ID: **ZZZZZZ**	Batch ID: **R158595**	TestNo: **SM 2320 B**		Analysis Date: **12/2/2021**	SeqNo: **4449062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	188.935	5.0	100.0	89.77	99.2	75	125	187.9	0.554	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
Lab Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048188-001

Client Sample ID: CW-01D-Q421
Collection Date: 12/1/2021 12:56:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Chloride	1900	33	250		mg/L	500	12/2/2021 12:07 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Fluoride	2.7	0.064	0.50		mg/L	5	12/2/2021 08:58 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Sulfate	510	3.0	25		mg/L	50	12/2/2021 03:17 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-01M-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 11:53:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Chloride	2100	33	250		mg/L	500	12/2/2021 12:23 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Fluoride	2.4	0.064	0.50		mg/L	5	12/2/2021 09:13 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Sulfate	490	3.0	25		mg/L	50	12/2/2021 03:33 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
Lab Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048188-003

Client Sample ID: CW-04D-Q421
Collection Date: 12/1/2021 2:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Chloride	2100	33	250		mg/L	500	12/2/2021 12:39 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Fluoride	2.9	0.064	0.50		mg/L	5	12/2/2021 09:29 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Sulfate	480	3.0	25		mg/L	50	12/2/2021 03:48 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
Lab Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048188-004

Client Sample ID: CW-04M-Q421
Collection Date: 12/1/2021 2:17:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Chloride	2100	33	250		mg/L	500	12/2/2021 12:55 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Fluoride	2.3	0.064	0.50		mg/L	5	12/2/2021 09:45 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Sulfate	490	3.0	25		mg/L	50	12/2/2021 04:04 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
Lab Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048188-005

Client Sample ID: OW-05D-Q421
Collection Date: 12/1/2021 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Chloride	2000	33	250		mg/L	500	12/2/2021 01:10 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Fluoride	2.8	0.064	0.50		mg/L	5	12/2/2021 10:01 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Sulfate	500	3.0	25		mg/L	50	12/2/2021 04:20 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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05M-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 10:03:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Chloride	1900	33	250		mg/L	500	12/2/2021 01:26 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Fluoride	3.0	0.064	0.50		mg/L	5	12/2/2021 10:17 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Sulfate	510	3.0	25		mg/L	50	12/2/2021 04:36 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
Lab Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048188-007

Client Sample ID: OW-05S-Q421
Collection Date: 12/1/2021 9:19:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Chloride	1700	13	100		mg/L	200	12/2/2021 01:42 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Fluoride	1.7	0.064	0.50		mg/L	5	12/2/2021 10:32 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211202A** QC Batch: **R158582**				PrepDate:			Analyst: **RAB**
Sulfate	360	1.2	10		mg/L	20	12/2/2021 04:52 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: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R158582_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	PBW	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449194

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

Sample ID	LCS-R158582_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	LCSW	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449195

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.120	0.50	2.000	0	106	90	110				

Sample ID	N048188-001DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	ZZZZZZ	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449207

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2952.500	250	1000	1937	102	80	120				

Sample ID	N048188-001DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	ZZZZZZ	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449208

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2958.600	250	1000	1937	102	80	120	2952	0.206	20	

Sample ID	N048188-006DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	ZZZZZZ	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449209

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1898.600	250						1906	0.371	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: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R158582_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	PBW	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449168

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

Sample ID	LCS-R158582_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	LCSW	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449169

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.296	0.10	1.250	0	104	90	110				

Sample ID	N048188-004DMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	ZZZZZZ	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449179

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	8.373	0.50	6.250	2.311	97.0	80	120				

Sample ID	N048188-004DMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	ZZZZZZ	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449180

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	8.302	0.50	6.250	2.311	95.9	80	120	8.373	0.852	20	

Sample ID	N048188-001DDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	ZZZZZZ	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449181

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.598	0.50						2.658	2.28	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: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R158582_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	PBW	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449242

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

Sample ID	LCS-R158582_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	LCSW	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449243

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.078	0.50	4.000	0	102	90	110				

Sample ID	N048188-003DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	ZZZZZZ	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449257

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	697.305	25	200.0	475.6	111	80	120				

Sample ID	N048188-003DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	ZZZZZZ	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449258

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	694.830	25	200.0	475.6	110	80	120	697.3	0.356	20	

Sample ID	N048188-005DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	158582
Client ID:	ZZZZZZ	Batch ID:	R158582	TestNo:	EPA 300.0			Analysis Date:	12/2/2021	SeqNo:	4449259

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	504.165	25						505.0	0.159	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-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 12:56:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211212A**	QC Batch: **90470**				PrepDate:	**12/2/2021**	Analyst: **CEI**
Boron	1.1	0.035	0.10		mg/L	1	12/12/2021 03:28 PM
Calcium	150	0.18	0.50		mg/L	1	12/12/2021 03:28 PM
Magnesium	19	0.017	0.10		mg/L	1	12/12/2021 03:28 PM
Potassium	13	0.69	2.5		mg/L	5	12/14/2021 10:38 AM
Sodium	1400	34	50		mg/L	100	12/14/2021 11:06 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-01M-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 11:53:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211212A**	QC Batch: **90470**				PrepDate:	**12/2/2021**	Analyst: **CEI**
Boron	0.98	0.035	0.10		mg/L	1	12/12/2021 03:54 PM
Calcium	180	0.18	0.50		mg/L	1	12/12/2021 03:54 PM
Magnesium	13	0.017	0.10		mg/L	1	12/12/2021 03:54 PM
Potassium	12	0.69	2.5		mg/L	5	12/14/2021 11:21 AM
Sodium	1500	34	50		mg/L	100	12/14/2021 11:25 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
Lab Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048188-003

Client Sample ID: CW-04D-Q421
Collection Date: 12/1/2021 2:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211212A**	QC Batch: **90470**				PrepDate:	**12/2/2021**	Analyst: **CEI**
Boron	0.99	0.035	0.10		mg/L	1	12/12/2021 03:58 PM
Calcium	160	0.18	0.50		mg/L	1	12/12/2021 03:58 PM
Magnesium	11	0.017	0.10		mg/L	1	12/12/2021 03:58 PM
Potassium	13	0.69	2.5		mg/L	5	12/14/2021 11:28 AM
Sodium	1500	34	50		mg/L	100	12/14/2021 11:33 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-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 2:17:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211212A**	QC Batch: **90470**				PrepDate:	**12/2/2021**	Analyst: **CEI**
Boron	0.91	0.035	0.10		mg/L	1	12/12/2021 04:02 PM
Calcium	210	0.18	0.50		mg/L	1	12/12/2021 04:02 PM
Magnesium	14	0.017	0.10		mg/L	1	12/12/2021 04:02 PM
Potassium	13	0.69	2.5		mg/L	5	12/14/2021 11:36 AM
Sodium	1400	34	50		mg/L	100	12/14/2021 11:53 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:**	OW-05D-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 10:45:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211212A**	QC Batch: **90470**				PrepDate:	**12/2/2021**	Analyst: **CEI**
Boron	1.1	0.035	0.10		mg/L	1	12/12/2021 04:07 PM
Calcium	200	0.18	0.50		mg/L	1	12/12/2021 04:07 PM
Magnesium	31	0.017	0.10		mg/L	1	12/12/2021 04:07 PM
Potassium	17	0.69	2.5		mg/L	5	12/14/2021 11:56 AM
Sodium	1300	34	50		mg/L	100	12/14/2021 12:00 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-05M-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 10:03:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-006		

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_211212A** QC Batch: **90470** PrepDate: **12/2/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1.1	0.035	0.10		mg/L	1	12/12/2021 04:11 PM
Calcium	150	0.18	0.50		mg/L	1	12/12/2021 04:11 PM
Magnesium	24	0.017	0.10		mg/L	1	12/12/2021 04:11 PM
Potassium	15	0.69	2.5		mg/L	5	12/14/2021 12:03 PM
Sodium	1400	34	50		mg/L	100	12/14/2021 12:08 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
Lab Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048188-007

Client Sample ID: OW-05S-Q421
Collection Date: 12/1/2021 9:19:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_211212A** QC Batch: **90470** PrepDate: **12/2/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	0.34	0.035	0.10		mg/L	1	12/12/2021 04:16 PM
Calcium	430	0.90	2.5		mg/L	5	12/19/2021 06:42 PM
Magnesium	69	0.017	0.10		mg/L	1	12/12/2021 04:16 PM
Potassium	17	0.69	2.5		mg/L	5	12/14/2021 12:11 PM
Sodium	660	8.5	12		mg/L	25	12/14/2021 12:15 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: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID	LCS1-90470	SampType:	LCS	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/2/2021	RunNo:	158833
Client ID:	LCSW	Batch ID:	90470	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/12/2021	SeqNo:	4461208

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4.831	0.10	5.000	0	96.6	85	115				
Calcium	9.261	0.50	10.00	0	92.6	85	115				
Magnesium	9.966	0.10	10.00	0	99.7	85	115				

Sample ID	N048186-001C-MS1	SampType:	MS	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/2/2021	RunNo:	158833
Client ID:	ZZZZZZ	Batch ID:	90470	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/12/2021	SeqNo:	4461212

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5.031	0.10	5.000	0.1237	98.1	75	125				
Calcium	83.522	0.50	10.00	72.02	115	75	125				
Magnesium	36.129	0.10	10.00	24.87	113	75	125				

Sample ID	N048186-001C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/2/2021	RunNo:	158833
Client ID:	ZZZZZZ	Batch ID:	90470	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/12/2021	SeqNo:	4461213

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5.044	0.10	5.000	0.1237	98.4	75	125	5.031	0.258	20	
Calcium	84.059	0.50	10.00	72.02	120	75	125	83.52	0.641	20	
Magnesium	36.157	0.10	10.00	24.87	113	75	125	36.13	0.0780	20	

Sample ID	MB-90470	SampType:	MBLK	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/2/2021	RunNo:	158833
Client ID:	PBW	Batch ID:	90470	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/12/2021	SeqNo:	4461224

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.10									
Calcium	0.222	0.50									
Magnesium	0.039	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: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID	MB-90470	SampType:	MBLK	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/2/2021	RunNo:	158873
Client ID:	PBW	Batch ID:	90470	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/14/2021	SeqNo:	4463630

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

Sample ID	LCS2-90470	SampType:	LCS	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/2/2021	RunNo:	158873
Client ID:	LCSW	Batch ID:	90470	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/14/2021	SeqNo:	4463631

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19.288	0.50	20.00	0	96.4	85	115				
Sodium	19.301	0.50	20.00	0	96.5	85	115				

Sample ID	N048188-001C-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/2/2021	RunNo:	158873
Client ID:	ZZZZZZ	Batch ID:	90470	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/14/2021	SeqNo:	4463634

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	34.411	2.5	20.00	13.47	105	75	125				

Sample ID	N048188-001C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/2/2021	RunNo:	158873
Client ID:	ZZZZZZ	Batch ID:	90470	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/14/2021	SeqNo:	4463636

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	35.377	2.5	20.00	13.47	110	75	125	34.41	2.77	20	

Sample ID	N048188-001C-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/2/2021	RunNo:	158873
Client ID:	ZZZZZZ	Batch ID:	90470	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/14/2021	SeqNo:	4463642

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1381.522	50	20.00	1381	0.568	75	125				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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID	N048188-001C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	mg/L	Prep Date:	12/2/2021	RunNo:	158873
Client ID:	ZZZZZZ	Batch ID:	90470	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/14/2021	SeqNo:	4463643

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1437.814	50	20.00	1381	282	75	125	1382	3.99	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: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID **N048186-001C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date:	RunNo: **158833**
Client ID: **ZZZZZZ**	Batch ID: **90470**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/12/2021**	SeqNo: **4461211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5.085	0.10	5.000	0.1237	99.2	80	120				
Calcium	85.788	0.50	10.00	72.02	138	80	120				S
Magnesium	36.130	0.10	10.00	24.87	113	80	120				

Sample ID **N048188-001C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date: **12/2/2021**	RunNo: **158873**
Client ID: **ZZZZZZ**	Batch ID: **90470**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/14/2021**	SeqNo: **4463635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	124.470	2.5	100.0	13.47	111	80	120				

Sample ID **N048188-001C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date:	RunNo: **158873**
Client ID: **ZZZZZZ**	Batch ID: **90470**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/14/2021**	SeqNo: **4463641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3463.825	50	2000	1381	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
Lab Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048188-001

Client Sample ID: CW-01D-Q421
Collection Date: 12/1/2021 12:56:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90482**			PrepDate:		**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 03:02 PM
Barium	20	0.083	1.0		µg/L	1	12/5/2021 03:02 PM
Manganese	ND	0.026	0.50		µg/L	1	12/5/2021 03:02 PM
Molybdenum	24	0.12	0.50		µg/L	1	12/5/2021 03:02 PM
Selenium	7.6	0.044	0.50		µg/L	1	12/5/2021 03:02 PM
Vanadium	2.4	0.067	1.0		µg/L	1	12/10/2021 12:14 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
Lab Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048188-002

Client Sample ID: CW-01M-Q421
Collection Date: 12/1/2021 11:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90482**			PrepDate:		**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 04:07 PM
Barium	74	0.083	1.0		µg/L	1	12/5/2021 04:07 PM
Manganese	0.92	0.026	0.50		µg/L	1	12/5/2021 04:07 PM
Molybdenum	17	0.12	0.50		µg/L	1	12/5/2021 04:07 PM
Selenium	4.1	0.044	0.50		µg/L	1	12/5/2021 04:07 PM
Vanadium	2.2	0.067	1.0		µg/L	1	12/10/2021 12:44 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-04D-Q421
Lab Order:	N048188	**Collection Date:**	12/1/2021 2:52:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048188-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90482**			PrepDate:		**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 04:19 PM
Barium	30	0.083	1.0		µg/L	1	12/5/2021 04:19 PM
Manganese	95	0.026	0.50		µg/L	1	12/5/2021 04:19 PM
Molybdenum	24	0.12	0.50		µg/L	1	12/5/2021 04:19 PM
Selenium	3.5	0.044	0.50		µg/L	1	12/5/2021 04:19 PM
Vanadium	5.3	0.067	1.0		µg/L	1	12/10/2021 12:50 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
Lab Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048188-004

Client Sample ID: CW-04M-Q421
Collection Date: 12/1/2021 2:17:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90482**			PrepDate:		**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 04:31 PM
Barium	98	0.083	1.0		µg/L	1	12/5/2021 04:31 PM
Manganese	ND	0.026	0.50		µg/L	1	12/5/2021 04:31 PM
Molybdenum	10	0.12	0.50		µg/L	1	12/5/2021 04:31 PM
Selenium	3.2	0.044	0.50		µg/L	1	12/5/2021 04:31 PM
Vanadium	3.2	0.067	1.0		µg/L	1	12/10/2021 12:56 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
Lab Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048188-005

Client Sample ID: OW-05D-Q421
Collection Date: 12/1/2021 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90482**			PrepDate:		**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 04:42 PM
Barium	28	0.083	1.0		µg/L	1	12/5/2021 04:42 PM
Manganese	ND	0.026	0.50		µg/L	1	12/5/2021 04:42 PM
Molybdenum	29	0.12	0.50		µg/L	1	12/5/2021 04:42 PM
Selenium	9.3	0.044	0.50		µg/L	1	12/5/2021 04:42 PM
Vanadium	2.4	0.067	1.0		µg/L	1	12/10/2021 01:13 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
Lab Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048188-006

Client Sample ID: OW-05M-Q421
Collection Date: 12/1/2021 10:03:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90482**			PrepDate:		**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 04:54 PM
Barium	31	0.083	1.0		µg/L	1	12/5/2021 04:54 PM
Manganese	ND	0.026	0.50		µg/L	1	12/5/2021 04:54 PM
Molybdenum	26	0.12	0.50		µg/L	1	12/5/2021 04:54 PM
Selenium	9.2	0.044	0.50		µg/L	1	12/5/2021 04:54 PM
Vanadium	1.8	0.067	1.0		µg/L	1	12/10/2021 01:19 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
Lab Order: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048188-007

Client Sample ID: OW-05S-Q421
Collection Date: 12/1/2021 9:19:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90482**			PrepDate:		**12/2/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 05:18 PM
Barium	130	0.083	1.0		µg/L	1	12/5/2021 05:18 PM
Manganese	ND	0.026	0.50		µg/L	1	12/5/2021 05:18 PM
Molybdenum	7.6	0.12	0.50		µg/L	1	12/5/2021 05:18 PM
Selenium	2.4	0.044	0.50		µg/L	1	12/5/2021 05:18 PM
Vanadium	2.0	0.067	1.0		µg/L	1	12/10/2021 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: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90482** SampType: **MBLK** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/2/2021** RunNo: **158713**
Client ID: **PBW** Batch ID: **90482** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/5/2021** SeqNo: **4455817**

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									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-90482** SampType: **LCS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/2/2021** RunNo: **158713**
Client ID: **LCSW** Batch ID: **90482** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/5/2021** SeqNo: **4455818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.532	0.10	10.00	0	95.3	85	115				
Barium	9.405	1.0	10.00	0	94.0	85	115				
Manganese	99.731	0.50	100.0	0	99.7	85	115				
Molybdenum	10.029	0.50	10.00	0	100	85	115				
Selenium	9.714	0.50	10.00	0	97.1	85	115				

Sample ID **N048188-001C-MS** SampType: **MS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/2/2021** RunNo: **158713**
Client ID: **ZZZZZZ** Batch ID: **90482** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/5/2021** SeqNo: **4455824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.305	0.10	10.00	0	83.1	75	125				
Barium	29.913	1.0	10.00	20.17	97.4	75	125				
Manganese	91.986	0.50	100.0	0.2983	91.7	75	125				
Molybdenum	34.886	0.50	10.00	23.86	110	75	125				
Selenium	17.174	0.50	10.00	7.576	96.0	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: N048188
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048188-001C-MSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158713
Client ID:	ZZZZZZ	Batch ID:	90482	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455826

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.377	0.10	10.00	0	83.8	75	125	8.305	0.854	20	
Barium	29.943	1.0	10.00	20.17	97.7	75	125	29.91	0.102	20	
Manganese	92.065	0.50	100.0	0.2983	91.8	75	125	91.99	0.0860	20	
Molybdenum	35.728	0.50	10.00	23.86	119	75	125	34.89	2.38	20	
Selenium	16.770	0.50	10.00	7.576	91.9	75	125	17.17	2.38	20	

Sample ID	MB-90482	SampType:	MBLK	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158811
Client ID:	PBW	Batch ID:	90482	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459612

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	0.124	1.0									

Sample ID	LCS-90482	SampType:	LCS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158811
Client ID:	LCSW	Batch ID:	90482	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459613

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.193	1.0	10.00	0	102	85	115				

Sample ID	N048188-001C-MS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158811
Client ID:	ZZZZZZ	Batch ID:	90482	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459617

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	11.670	1.0	10.00	2.368	93.0	75	125				

Sample ID	N048188-001C-MSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/2/2021	RunNo:	158811
Client ID:	ZZZZZZ	Batch ID:	90482	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459618

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	11.866	1.0	10.00	2.368	95.0	75	125	11.67	1.66	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

ND48188

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y / N
Address: Roseville, CA 95661	Email: [redacted]	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: [redacted]@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: [signature]		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact ✓
Title: Field Tech 12/1/21	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present ✓
Signature: Date: 12/1/21	Sampled By: Nara Tey		Global ID:	Regulatory	5. IR number 3
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			Specify State:	6. Method of Cooling: Ice
Project Name: PG&E Topock - IM3	Signature: [signature] Date: 12/1/21				Sample Temp: 4.6°C/4.9°C
Project Number: 30110373.4Q21GW					Courier: ASSET
					Tracking No.:

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Boron, Barium, Calcium, Potassium, Magnesium, Manganese, Sodium, Vanadium (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium (500mL poly)	Total Dissolved Solids (SM2540C); 4°C (1 liter poly)	Chloride, Fluoride, Sulfate (EPA300.0); 4°C (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B); 4°C (1 liter poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048188-01	CW-01D-Q421	12/1/2021	12:56		X	X	X	X	X	X	X	X	E	4	P	BNS	
2	-02	CW-01M-Q421	12/1/2021	11:53		X	X	X	X	X	X	X	X	E	4	P	BNS	
3	-03	CW-04D-Q421	12/1/2021	14:52		X	X	X	X	X	X	X	X	E	4	P	BNS	
4	-04	CW-04M-Q421	12/1/2021	14:17		X	X	X	X	X	X	X	X	E	4	P	BNS	
5	-05	OW-05D-Q421	12/1/2021	10:45		X	X	X	X	X	X	X	X	E	4	P	BNS	
6	-06	OW-05M-Q421	12/1/2021	10:03		X	X	X	X	X	X	X	X	E	4	P	BNS	
7	-07	OW-05S-Q421	12/1/2021	9:19		X	X	X	X	X	X	X	X	E	4	P	BNS	
8	-08	EB-722-Q421	12/1/2021	15:10										E	1	P	BNS	
9																		
10																		
11																		
12																		
13																		
14																		
15																		

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
Nara Tey	12/1/21 16:11	Jonas Deacla	12/1/21 16:11
Jonas Deacla	12/1/21 16:25	Yolanda Rodriguez	12/1/21 1925

Turn Around Time (TAT)

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

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	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:	12/1/2021	Workorder:	N048188
Rep sample Temp (Deg C):	4.6/4.9	IR Gun ID:	3
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:

For:

Checklist Completed By: YR GGarcia 12/2/2021

Reviewed By: MBC 12/8/2021

Subject: RE: PG&E Topock - IM3, 30110373.4Q21GW (ASSETLabs No. N048188)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 12/6/2021, 3:23 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: Tina Rice <Tina.Rice@critigen.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "rustico.aquino@assetlaboratoriesph.com" <rustico.aquino@assetlaboratoriesph.com>, "giselle@assetlaboratories.com" <giselle@assetlaboratories.com>

Yes, please log it in for Cr6 analysis by 218.6

Thanks,
Laura

From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, December 6, 2021 4:21 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: Tina Rice <Tina.Rice@critigen.com>; maryann.balilu@assetlaboratoriesph.com; rustico.aquino@assetlaboratoriesph.com; giselle@assetlaboratories.com
Subject: PG&E Topock - IM3, 30110373.4Q21GW (ASSETLabs No. N048188)

Hi Laura,

Please confirm if sample 8 on the attached COC should be analyzed for Cr 6+ by 218.6.

--
Thanks,

Yoandra Rodriguez
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 | F: 702.307.2691
California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436

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ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048188

Client ID: ARCUS02

Project: PG&E Topock - IM3, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/1/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048188-001A	CW-01D-Q421	12/1/2021 12:56:00 PM	12/15/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048188-001B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048188-001C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048188-001D			12/15/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/15/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/15/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048188-002A	CW-01M-Q421	12/1/2021 11:53:00 AM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048188-002B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048188-002C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048188-002D			12/15/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048188

Client ID: ARCUS02

Project: PG&E Topock - IM3, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/1/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048188-002D	CW-01M-Q421	12/1/2021 11:53:00 AM	12/15/2021	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/15/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048188-003A	CW-04D-Q421	12/1/2021 2:52:00 PM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048188-003B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048188-003C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048188-003D			12/15/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/15/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/15/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048188-004A	CW-04M-Q421	12/1/2021 2:17:00 PM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048188-004B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048188-004C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048188

Client ID: ARCUS02

Project: PG&E Topock - IM3, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/1/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048188-004C	CW-04M-Q421	12/1/2021 2:17:00 PM	12/15/2021	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048188-004D			12/15/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/15/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/15/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048188-005A	OW-05D-Q421	12/1/2021 10:45:00 AM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048188-005B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048188-005C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048188-005D			12/15/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/15/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/15/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048188

Client ID: ARCUS02

Project: PG&E Topock - IM3, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/1/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048188-005D	OW-05D-Q421	12/1/2021 10:45:00 AM	12/15/2021	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048188-006A	OW-05M-Q421	12/1/2021 10:03:00 AM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048188-006B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048188-006C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048188-006D			12/15/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/15/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/15/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048188-007A	OW-05S-Q421	12/1/2021 9:19:00 AM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048188-007B			12/15/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048188-007C			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/15/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/15/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048188

Client ID: ARCUS02

Project: PG&E Topock - IM3, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/1/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048188-007D	OW-05S-Q421	12/1/2021 9:19:00 AM	12/15/2021	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/15/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/15/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/15/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048188-008A	EB-722-Q421	12/1/2021 3:10:00 PM	12/15/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048188-009A	FOLDER	12/15/2021	12/15/2021		Folder	Folder	☐	☐	☐	LAB
			12/15/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/15/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: NARA TEP

06-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NO3F		
N048188-001B / CW-01D-Q421	Groundwater	12/1/2021 12:56:00 PM	8OZP	1		
N048188-002B / CW-01M-Q421	Groundwater	12/1/2021 11:53:00 AM	8OZP	1		
N048188-003B / CW-04D-Q421	Groundwater	12/1/2021 2:52:00 PM	8OZP	1		
N048188-004B / CW-04M-Q421	Groundwater	12/1/2021 2:17:00 PM	8OZP	1		
N048188-005B / OW-05D-Q421	Groundwater	12/1/2021 10:45:00 AM	8OZP	1		
N048188-006B / OW-05M-Q421	Groundwater	12/1/2021 10:03:00 AM	8OZP	1		
N048188-007B / OW-05S-Q421	Groundwater	12/1/2021 9:19:00 AM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48188A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555436439

	Date/Time		Date/Time
Relinquished by: YRJ	12/6/2021 1630	**Received by:**	
Relinquished by:		**Received by:**	

December 18, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048208

RE: PG&E Topock - PCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 02, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET Laboratories - Las Vegas.

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.

Subcontracted Analyses:

Ammonia and Nitrate/Nitrite were subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (2.6 ug/L) and hexavalent chromium (0 ug/L) for sample N048208-001 (MW-49-365-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (2.2 ug/L) and hexavalent chromium (0 ug/L) for sample N048208-003 (MW-49-275-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 300.0:

Dilution was necessary due to precipitation of samples upon the addition of eluent.

Method Blank (MB) has detect greater than 1/2 the reporting limit for Sulfate. However, samples results were greater than 5x the Method Blank detection therefore reanalysis of the samples was not necessary.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Nitrite in QC samples N048208-013DMS and N048208-013DMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) is outside recovery criteria for Iron in QC sample N048208-013C-MS possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (2.6 ug/L) and hexavalent chromium (0 ug/L) for sample N048208-001 (MW-49-365-Q421) 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 2.4 and 1.8 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (2.2 ug/L) and hexavalent chromium (0 ug/L) for sample N048208-003 (MW-49-275-Q421) 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 2.1 and 2.1 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N048208-013C-MS and N048208-013C-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N048208-013C-MS and N048208-013C-MSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Method Blank (MB) has detect greater than 1/2 the reporting limit for Arsenic. However, samples results for this analyte were either none-detect (ND) or greater than 5x the Method Blank detection therefore reanalysis of the samples was not necessary.

Analytical Comments for SM 5310C:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N048208-013F-MS/MSD at lower dilutions possibly due to matrix interference. QC samples were further diluted and recovery passed criteria. Thus, sample reference N048208-013F and MS/MSD were reported at 50x dilution. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048208
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048208-001A	MW-49-365-Q421	Groundwater	12/2/2021 10:22:00 AM	12/2/2021	12/18/2021
N048208-001B	MW-49-365-Q421	Groundwater	12/2/2021 10:22:00 AM	12/2/2021	12/18/2021
N048208-002A	MW-49-365-EB-Q421	Groundwater	12/2/2021 9:30:00 AM	12/2/2021	12/18/2021
N048208-003A	MW-49-275-Q421	Groundwater	12/2/2021 11:16:00 AM	12/2/2021	12/18/2021
N048208-003B	MW-49-275-Q421	Groundwater	12/2/2021 11:16:00 AM	12/2/2021	12/18/2021
N048208-004A	MW-49-275-EB-Q421	Groundwater	12/2/2021 10:45:00 AM	12/2/2021	12/18/2021
N048208-005A	MW-49-135-Q421	Groundwater	12/2/2021 12:04:00 PM	12/2/2021	12/18/2021
N048208-005B	MW-49-135-Q421	Groundwater	12/2/2021 12:04:00 PM	12/2/2021	12/18/2021
N048208-006A	MW-49-135-EB-Q421	Groundwater	12/2/2021 11:30:00 AM	12/2/2021	12/18/2021
N048208-007A	MW-29-Q421	Groundwater	12/2/2021 12:48:00 PM	12/2/2021	12/18/2021
N048208-007B	MW-29-Q421	Groundwater	12/2/2021 12:48:00 PM	12/2/2021	12/18/2021
N048208-008A	MW-29-EB-Q421	Groundwater	12/2/2021 12:20:00 PM	12/2/2021	12/18/2021
N048208-009A	EB-723-Q421	Groundwater	12/2/2021 1:15:00 PM	12/2/2021	12/18/2021
N048208-010A	MW-76-039-Q421	Groundwater	12/2/2021 10:43:00 AM	12/2/2021	12/18/2021
N048208-010B	MW-76-039-Q421	Groundwater	12/2/2021 10:43:00 AM	12/2/2021	12/18/2021
N048208-010C	MW-76-039-Q421	Groundwater	12/2/2021 10:43:00 AM	12/2/2021	12/18/2021
N048208-010D	MW-76-039-Q421	Groundwater	12/2/2021 10:43:00 AM	12/2/2021	12/18/2021
N048208-010E	MW-76-039-Q421	Groundwater	12/2/2021 10:43:00 AM	12/2/2021	12/18/2021
N048208-010F	MW-76-039-Q421	Groundwater	12/2/2021 10:43:00 AM	12/2/2021	12/18/2021
N048208-011A	MW-76-156-Q421	Groundwater	12/2/2021 10:01:00 AM	12/2/2021	12/18/2021
N048208-011B	MW-76-156-Q421	Groundwater	12/2/2021 10:01:00 AM	12/2/2021	12/18/2021
N048208-011C	MW-76-156-Q421	Groundwater	12/2/2021 10:01:00 AM	12/2/2021	12/18/2021
N048208-011D	MW-76-156-Q421	Groundwater	12/2/2021 10:01:00 AM	12/2/2021	12/18/2021
N048208-011E	MW-76-156-Q421	Groundwater	12/2/2021 10:01:00 AM	12/2/2021	12/18/2021
N048208-011F	MW-76-156-Q421	Groundwater	12/2/2021 10:01:00 AM	12/2/2021	12/18/2021
N048208-012A	MW-76-181-Q421	Groundwater	12/2/2021 11:25:00 AM	12/2/2021	12/18/2021
N048208-012B	MW-76-181-Q421	Groundwater	12/2/2021 11:25:00 AM	12/2/2021	12/18/2021
N048208-012C	MW-76-181-Q421	Groundwater	12/2/2021 11:25:00 AM	12/2/2021	12/18/2021
N048208-012D	MW-76-181-Q421	Groundwater	12/2/2021 11:25:00 AM	12/2/2021	12/18/2021

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048208
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048208-012E	MW-76-181-Q421	Groundwater	12/2/2021 11:25:00 AM	12/2/2021	12/18/2021
N048208-012F	MW-76-181-Q421	Groundwater	12/2/2021 11:25:00 AM	12/2/2021	12/18/2021
N048208-013A	MW-76-218-Q421	Groundwater	12/2/2021 12:11:00 PM	12/2/2021	12/18/2021
N048208-013B	MW-76-218-Q421	Groundwater	12/2/2021 12:11:00 PM	12/2/2021	12/18/2021
N048208-013C	MW-76-218-Q421	Groundwater	12/2/2021 12:11:00 PM	12/2/2021	12/18/2021
N048208-013D	MW-76-218-Q421	Groundwater	12/2/2021 12:11:00 PM	12/2/2021	12/18/2021
N048208-013E	MW-76-218-Q421	Groundwater	12/2/2021 12:11:00 PM	12/2/2021	12/18/2021
N048208-013F	MW-76-218-Q421	Groundwater	12/2/2021 12:11:00 PM	12/2/2021	12/18/2021
N048208-014A	MW-77-046-Q421	Groundwater	12/2/2021 3:21:00 PM	12/2/2021	12/18/2021
N048208-014B	MW-77-046-Q421	Groundwater	12/2/2021 3:21:00 PM	12/2/2021	12/18/2021
N048208-014C	MW-77-046-Q421	Groundwater	12/2/2021 3:21:00 PM	12/2/2021	12/18/2021
N048208-014D	MW-77-046-Q421	Groundwater	12/2/2021 3:21:00 PM	12/2/2021	12/18/2021
N048208-015A	MW-77-102-Q421	Groundwater	12/2/2021 1:26:00 PM	12/2/2021	12/18/2021
N048208-015B	MW-77-102-Q421	Groundwater	12/2/2021 1:26:00 PM	12/2/2021	12/18/2021
N048208-015C	MW-77-102-Q421	Groundwater	12/2/2021 1:26:00 PM	12/2/2021	12/18/2021
N048208-015D	MW-77-102-Q421	Groundwater	12/2/2021 1:26:00 PM	12/2/2021	12/18/2021
N048208-016A	MW-77-158-Q421	Groundwater	12/2/2021 2:34:00 PM	12/2/2021	12/18/2021
N048208-016B	MW-77-158-Q421	Groundwater	12/2/2021 2:34:00 PM	12/2/2021	12/18/2021
N048208-016C	MW-77-158-Q421	Groundwater	12/2/2021 2:34:00 PM	12/2/2021	12/18/2021
N048208-016D	MW-77-158-Q421	Groundwater	12/2/2021 2:34:00 PM	12/2/2021	12/18/2021
N048208-017A	MW-937-Q421	Groundwater	12/2/2021 2:44:00 PM	12/2/2021	12/18/2021
N048208-017B	MW-937-Q421	Groundwater	12/2/2021 2:44:00 PM	12/2/2021	12/18/2021
N048208-017C	MW-937-Q421	Groundwater	12/2/2021 2:44:00 PM	12/2/2021	12/18/2021
N048208-017D	MW-937-Q421	Groundwater	12/2/2021 2:44:00 PM	12/2/2021	12/18/2021
N048208-018A	MW-77-187-Q421	Groundwater	12/2/2021 2:03:00 PM	12/2/2021	12/18/2021
N048208-018B	MW-77-187-Q421	Groundwater	12/2/2021 2:03:00 PM	12/2/2021	12/18/2021
N048208-018C	MW-77-187-Q421	Groundwater	12/2/2021 2:03:00 PM	12/2/2021	12/18/2021
N048208-018D	MW-77-187-Q421	Groundwater	12/2/2021 2:03:00 PM	12/2/2021	12/18/2021
N048208-019A	EB-724-Q421	Groundwater	12/2/2021 3:40:00 PM	12/2/2021	12/18/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 10:22:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/3/2021 07:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	2.6	0.035	1.0		µg/L	1	12/5/2021 06:05 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-EB-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 9:30:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 01:08 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:**	MW-49-275-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 11:16:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/3/2021 07:35 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	2.2	0.035	1.0		µg/L	1	12/5/2021 06:17 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:**	MW-49-275-EB-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 10:45:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 01:46 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:**	MW-49-135-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 12:04:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A** QC Batch: **R158651**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	6.1	0.13	1.0		µg/L	5	12/3/2021 07:54 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211205A** QC Batch: **90505**				PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	7.3	0.035	1.0		µg/L	1	12/5/2021 06:29 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:**	MW-49-135-EB-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 11:30:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 02:24 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:**	MW-29-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 12:48:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A** QC Batch: **R158651**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 03:10 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211205A** QC Batch: **90505**				PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/5/2021 06:41 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:**	MW-29-EB-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 12:20:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 03:29 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:**	EB-723-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 1:15:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 03:48 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:**	MW-76-039-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 10:43:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	130	0.50	4.0		µg/L	20	12/3/2021 08:13 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	140	0.035	1.0		µg/L	1	12/5/2021 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-76-156-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 10:01:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	4.0	0.13	1.0		µg/L	5	12/3/2021 08:51 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	4.5	0.035	1.0		µg/L	1	12/5/2021 07:17 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:**	MW-76-181-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 11:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1500	5.0	40		µg/L	200	12/3/2021 12:03 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211210A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	1500	0.88	25		µg/L	25	12/10/2021 01:43 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:**	MW-76-218-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 12:11:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	270	1.3	10		µg/L	50	12/3/2021 11:34 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	280	0.18	5.0		µg/L	5	12/5/2021 07:46 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:**	MW-77-046-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 3:21:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211206B**	QC Batch: **R158696**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/6/2021 05:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/5/2021 08:58 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:**	MW-77-102-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 1:26:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	0.67	0.025	0.20		µg/L	1	12/3/2021 05:23 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/5/2021 09:10 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:**	MW-77-158-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 2:34:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	7.1	0.13	1.0		µg/L	5	12/3/2021 09:10 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	7.7	0.035	1.0		µg/L	1	12/5/2021 09:22 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:**	MW-937-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 2:44:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	6.9	0.13	1.0		µg/L	5	12/3/2021 09:28 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	7.9	0.035	1.0		µg/L	1	12/5/2021 09:45 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-77-187-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 2:03:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	2.5	0.13	1.0		µg/L	5	12/3/2021 10:00 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	3.1	0.035	1.0		µg/L	1	12/5/2021 09:57 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:**	EB-724-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 3:40:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203A**	QC Batch: **R158651**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/3/2021 10:19 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: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158651	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158651		
Client ID:	PBW	Batch ID:	R158651	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452883		
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-R158651	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158651		
Client ID:	LCSW	Batch ID:	R158651	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452884		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.761	0.20	5.000	0	95.2	90	110						

Sample ID	N048208-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158651		
Client ID:	ZZZZZZ	Batch ID:	R158651	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452886		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	522.910	10	250.0	271.7	100	90	110						

Sample ID	N048208-013AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158651		
Client ID:	ZZZZZZ	Batch ID:	R158651	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452887		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	524.360	10	250.0	271.7	101	90	110	522.9	0.277	20			

Sample ID	N048208-012ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158651		
Client ID:	ZZZZZZ	Batch ID:	R158651	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452889		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1532.420	40						1523	0.621	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: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048208-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452893**

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

Sample ID **N048208-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.998	0.20	1.000	0	99.8	90	110				

Sample ID **N048208-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.016	0.20	1.000	0	102	90	110				

Sample ID **N048208-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452902**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.976	0.20	1.000	0	97.6	90	110				

Sample ID **N048208-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.955	0.20	1.000	0	95.5	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: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048208-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.588	0.20	1.000	0.6745	91.3	90	110				

Sample ID **N048208-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2461.240	40	1000	1523	93.8	90	110				

Sample ID **N048208-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.991	0.20	1.000	0	99.1	90	110				

Sample ID **N048208-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452914**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.901	1.0	5.000	0	98.0	90	110				

Sample ID **N048208-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.181	1.0	5.000	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
Work Order: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048208-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.740	1.0	5.000	6.122	92.4	90	110				

Sample ID **N048208-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452920**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	230.204	4.0	100.0	131.5	98.7	90	110				

Sample ID **N048208-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.900	1.0	5.000	4.041	97.2	90	110				

Sample ID **N048208-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.989	1.0	5.000	7.086	98.0	90	110				

Sample ID **N048208-017AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158651**
Client ID: **ZZZZZZ**	Batch ID: **R158651**	TestNo: **EPA 218.6**		Analysis Date: **12/3/2021**	SeqNo: **4452928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.882	1.0	5.000	6.912	99.4	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: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048208-018AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158651
Client ID:	ZZZZZZ	Batch ID:	R158651	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452930

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.244	1.0	5.000	2.457	95.7	90	110				

Sample ID	N048208-019AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158651
Client ID:	ZZZZZZ	Batch ID:	R158651	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452932

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.965	0.20	1.000	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		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R158696	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	158696	
Client ID:	LCSW	Batch ID:	R158696	TestNo:	EPA 218.6			Analysis Date:	12/6/2021			SeqNo:	4455021	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		4.980	0.20	5.000	0	99.6	90	110						

Sample ID	MB-R158696	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	158696	
Client ID:	PBW	Batch ID:	R158696	TestNo:	EPA 218.6			Analysis Date:	12/6/2021			SeqNo:	4455022	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		ND	0.20											

Sample ID	N048208-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	158696	
Client ID:	ZZZZZZ	Batch ID:	R158696	TestNo:	EPA 218.6			Analysis Date:	12/6/2021			SeqNo:	4455024	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		4.919	1.0	5.000	0	98.4	90	110						

Sample ID	N048208-014AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	158696	
Client ID:	ZZZZZZ	Batch ID:	R158696	TestNo:	EPA 218.6			Analysis Date:	12/6/2021			SeqNo:	4455025	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		4.714	1.0	5.000	0	94.3	90	110	4.918	4.26	20			

Sample ID	N048225-002ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	158696	
Client ID:	ZZZZZZ	Batch ID:	R158696	TestNo:	EPA 218.6			Analysis Date:	12/6/2021			SeqNo:	4455030	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		0.446	0.20						0.4681	4.95	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: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90505	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713
Client ID:	PBW	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455760

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

Sample ID	LCS-90505	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713
Client ID:	LCSW	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455761

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.201	1.0	10.00	0	102	85	115				

Sample ID	N048208-013CMS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455788

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	282.037	5.0	10.00	282.8	-7.67	75	125				S

Sample ID	N048208-013CMSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455790

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	282.290	5.0	10.00	282.8	-5.13	75	125	282.0	0.0899	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: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	N048208-013C-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	158713
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455786

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	284.762	5.0	10.00	282.8	19.6	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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-76-039-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 10:43:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211203A** QC Batch: **R158667**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.015	2.5		mg/L	5	12/3/2021 09:56 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211203A** QC Batch: **R158667**				PrepDate:			Analyst: **RAB**
Sulfate	190	1.2	10		mg/L	20	12/3/2021 12:21 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:**	MW-76-156-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 10:01:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211203A**	QC Batch: **R158667**			PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/3/2021 10:12 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211203A**	QC Batch: **R158667**			PrepDate:			Analyst: **RAB**
Sulfate	780	6.1	50		mg/L	100	12/3/2021 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	**Client Sample ID:**	MW-76-181-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 11:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211203A**	QC Batch: **R158667**			PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.029	5.0		mg/L	10	12/3/2021 10:28 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211203A**	QC Batch: **R158667**			PrepDate:			Analyst: **RAB**
Sulfate	870	6.1	50		mg/L	100	12/3/2021 01:40 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:**	MW-76-218-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 12:11:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211203A** QC Batch: **R158667**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.058	10		mg/L	20	12/3/2021 02:55 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211203A** QC Batch: **R158667**				PrepDate:			Analyst: **RAB**
Sulfate	880	6.1	50		mg/L	100	12/3/2021 01:56 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: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_NO2PGE

Sample ID	MB-R158667_NO2	SampType:	MBLK	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	158667
Client ID:	PBW	Batch ID:	R158667	TestNo:	EPA 300.0			Analysis Date:	12/3/2021	SeqNo:	4453826

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

Sample ID	LCS-R158667_NO2	SampType:	LCS	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	158667
Client ID:	LCSW	Batch ID:	R158667	TestNo:	EPA 300.0			Analysis Date:	12/3/2021	SeqNo:	4453827

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	1.290	0.50	1.250	0	103	90	110				

Sample ID	N048208-010DDUP	SampType:	DUP	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	158667
Client ID:	ZZZZZZ	Batch ID:	R158667	TestNo:	EPA 300.0			Analysis Date:	12/3/2021	SeqNo:	4453831

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	ND	2.5						0	0	20	

Sample ID	N048208-013DMS	SampType:	MS	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	158667
Client ID:	ZZZZZZ	Batch ID:	R158667	TestNo:	EPA 300.0			Analysis Date:	12/3/2021	SeqNo:	4453837

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	47.444	10	25.00	0	190	80	120				S

Sample ID	N048208-013DMSD	SampType:	MSD	TestCode:	300_W_NO2P	Units:	mg/L	Prep Date:		RunNo:	158667
Client ID:	ZZZZZZ	Batch ID:	R158667	TestNo:	EPA 300.0			Analysis Date:	12/3/2021	SeqNo:	4453838

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	46.244	10	25.00	0	185	80	120	47.44	2.56	20	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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R158667_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	158667
Client ID:	PBW	Batch ID:	R158667	TestNo:	EPA 300.0			Analysis Date:	12/3/2021	SeqNo:	4453951

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.313	0.50									

Sample ID	LCS-R158667_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	158667
Client ID:	LCSW	Batch ID:	R158667	TestNo:	EPA 300.0			Analysis Date:	12/3/2021	SeqNo:	4453952

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.046	0.50	4.000	0	101	90	110				

Sample ID	N048208-010DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	158667
Client ID:	ZZZZZZ	Batch ID:	R158667	TestNo:	EPA 300.0			Analysis Date:	12/3/2021	SeqNo:	4453956

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	191.470	10						192.4	0.507	20	

Sample ID	N048208-013DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	158667
Client ID:	ZZZZZZ	Batch ID:	R158667	TestNo:	EPA 300.0			Analysis Date:	12/3/2021	SeqNo:	4453960

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1326.780	50	400.0	875.0	113	80	120				

Sample ID	N048208-013DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	158667
Client ID:	ZZZZZZ	Batch ID:	R158667	TestNo:	EPA 300.0			Analysis Date:	12/3/2021	SeqNo:	4453961

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1314.030	50	400.0	875.0	110	80	120	1327	0.966	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:**	MW-76-039-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 10:43:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/9/2021 05:53 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:**	MW-76-156-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 10:01:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/9/2021 06:08 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:**	MW-76-181-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 11:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/9/2021 06:24 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:**	MW-76-218-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 12:11:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	4.2	50		mg/L	50	12/9/2021 10:48 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:**	MW-77-046-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 3:21:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.5	0.084	1.0		mg/L	1	12/9/2021 06:55 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:**	MW-77-102-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 1:26:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/9/2021 07:41 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:**	MW-77-158-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 2:34:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/9/2021 07:57 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:**	MW-937-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 2:44:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/9/2021 08:13 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:**	MW-77-187-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 2:03:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211209A**	QC Batch: **R158784**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/9/2021 08:28 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: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID **MB-R158784**	SampType: **MBLK**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **PBW**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID **LCS-R158784**	SampType: **LCS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **LCSW**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.653	1.0	5.000	0	93.1	85	115				

Sample ID **N048208-013F-MS**	SampType: **MS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **ZZZZZZ**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	239.145	50	250.0	0	95.7	75	125				

Sample ID **N048208-013F-MSD**	SampType: **MSD**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158784**
Client ID: **ZZZZZZ**	Batch ID: **R158784**	TestNo: **SM 5310C**		Analysis Date: **12/9/2021**	SeqNo: **4458060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	239.125	50	250.0	0	95.6	75	125	239.1	0.00836	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:**	MW-76-039-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 10:43:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**				PrepDate:	**12/5/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/5/2021 07:07 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:**	MW-76-156-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 10:01:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**				PrepDate:	**12/5/2021**	Analyst: **DJ**
Iron	58	13	20		µg/L	1	12/5/2021 10:34 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:**	MW-76-181-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 11:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**				PrepDate:	**12/5/2021**	Analyst: **DJ**
Iron	52	13	20		µg/L	1	12/5/2021 10:39 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:**	MW-76-218-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 12:11:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**				PrepDate:	**12/5/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/5/2021 07:22 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:**	MW-77-046-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 3:21:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**				PrepDate:	**12/5/2021**	Analyst: **DJ**
Iron	940	13	20		µg/L	1	12/5/2021 08:23 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:**	MW-77-102-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 1:26:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**			PrepDate:	**12/5/2021**		Analyst: **DJ**
Iron	39	13	20		µg/L	1	12/5/2021 08:28 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:**	MW-77-158-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 2:34:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**			PrepDate:	**12/5/2021**		Analyst: **DJ**
Iron	48	13	20		µg/L	1	12/5/2021 08:33 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:**	MW-937-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 2:44:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**			PrepDate:	**12/5/2021**		Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/5/2021 10:43 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:**	MW-77-187-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 2:03:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**				PrepDate:	**12/5/2021**	Analyst: **DJ**
Iron	50	13	20		µg/L	1	12/5/2021 08:43 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: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-90517	SampType:	MBLK	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158643
Client ID:	PBW	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452422

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

Sample ID	N048208-013CMS	SampType:	MS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158643
Client ID:	ZZZZZZ	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452434

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	125.720	20	100.0	0	126	75	125				S

Sample ID	N048208-013CMSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158643
Client ID:	ZZZZZZ	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452435

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	112.018	20	100.0	0	112	75	125	125.7	11.5	20	

Sample ID	N048222-008CMS	SampType:	MS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158643
Client ID:	ZZZZZZ	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452453

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	650.226	20	100.0	536.9	113	75	125				

Sample ID	N048222-008CMSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158643
Client ID:	ZZZZZZ	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452454

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	642.499	20	100.0	536.9	106	75	125	650.2	1.20	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: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	LCS-90517	SampType:	LCS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158643
Client ID:	LCSW	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452464

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	98.932	20	100.0	0	98.9	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: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N048208-013C-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:		RunNo:	158643
Client ID:	ZZZZZZ	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452433

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	154.115	20	100.0	0	154	80	120				S

Sample ID	N048222-008C-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:		RunNo:	158643
Client ID:	ZZZZZZ	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452452

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	640.961	20	100.0	536.9	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	**Client Sample ID:**	MW-76-039-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 10:43:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**				PrepDate:	**12/3/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 07:05 PM
Barium	39	0.083	1.0		µg/L	1	12/5/2021 07:05 PM
Manganese	10	0.026	0.50		µg/L	1	12/5/2021 07:05 PM
Molybdenum	27	0.12	0.50		µg/L	1	12/5/2021 07:05 PM
Selenium	2.8	0.044	0.50		µg/L	1	12/5/2021 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-76-156-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 10:01:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:		**12/3/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 07:17 PM
Barium	47	0.083	1.0		µg/L	1	12/5/2021 07:17 PM
Manganese	92	0.026	0.50		µg/L	1	12/5/2021 07:17 PM
Molybdenum	31	0.12	0.50		µg/L	1	12/5/2021 07:17 PM
Selenium	1.1	0.044	0.50		µg/L	1	12/5/2021 07:17 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:**	MW-76-181-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 11:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:		**12/3/2021**	Analyst: **CEI**
Arsenic	1.5	0.050	0.10		µg/L	1	12/5/2021 07:28 PM
Barium	67	0.083	1.0		µg/L	1	12/5/2021 07:28 PM
Manganese	89	0.026	0.50		µg/L	1	12/5/2021 07:28 PM
Molybdenum	27	0.12	0.50		µg/L	1	12/5/2021 07:28 PM
Selenium	1.7	0.044	0.50		µg/L	1	12/10/2021 01:37 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:**	MW-76-218-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 12:11:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:		**12/3/2021**	Analyst: **CEI**
Arsenic	3.9	0.050	0.10		µg/L	1	12/5/2021 07:40 PM
Barium	66	0.083	1.0		µg/L	1	12/5/2021 07:40 PM
Manganese	280	0.13	2.5		µg/L	5	12/5/2021 07:46 PM
Molybdenum	68	0.12	0.50		µg/L	1	12/5/2021 07:40 PM
Selenium	1.0	0.044	0.50		µg/L	1	12/5/2021 07:40 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:**	MW-77-046-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 3:21:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:		**12/3/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 08:58 PM
Barium	95	0.083	1.0		µg/L	1	12/5/2021 08:58 PM
Manganese	420	0.13	2.5		µg/L	5	12/5/2021 09:04 PM
Molybdenum	95	0.12	0.50		µg/L	1	12/5/2021 08:58 PM
Selenium	3.0	0.044	0.50		µg/L	1	12/5/2021 08:58 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:**	MW-77-102-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 1:26:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:		**12/3/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 09:10 PM
Barium	40	0.083	1.0		µg/L	1	12/5/2021 09:10 PM
Manganese	20	0.026	0.50		µg/L	1	12/5/2021 09:10 PM
Molybdenum	4.4	0.12	0.50		µg/L	1	12/5/2021 09:10 PM
Selenium	ND	0.044	0.50		µg/L	1	12/5/2021 09:10 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:**	MW-77-158-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 2:34:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:		**12/3/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 09:22 PM
Barium	43	0.083	1.0		µg/L	1	12/5/2021 09:22 PM
Manganese	60	0.026	0.50		µg/L	1	12/5/2021 09:22 PM
Molybdenum	32	0.12	0.50		µg/L	1	12/5/2021 09:22 PM
Selenium	0.53	0.044	0.50		µg/L	1	12/5/2021 09:22 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:**	MW-937-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 2:44:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:		**12/3/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 09:45 PM
Barium	44	0.083	1.0		µg/L	1	12/5/2021 09:45 PM
Manganese	62	0.026	0.50		µg/L	1	12/5/2021 09:45 PM
Molybdenum	33	0.12	0.50		µg/L	1	12/5/2021 09:45 PM
Selenium	0.78	0.044	0.50		µg/L	1	12/5/2021 09:45 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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-77-187-Q421
Lab Order:	N048208	**Collection Date:**	12/2/2021 2:03:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048208-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:		**12/3/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 09:57 PM
Barium	40	0.083	1.0		µg/L	1	12/5/2021 09:57 PM
Manganese	50	0.026	0.50		µg/L	1	12/5/2021 09:57 PM
Molybdenum	250	0.60	2.5		µg/L	5	12/5/2021 10:03 PM
Selenium	0.81	0.044	0.50		µg/L	1	12/5/2021 09:57 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: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90505**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/3/2021**	RunNo: **158713**
Client ID: **PBW**	Batch ID: **90505**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/5/2021**	SeqNo: **4455848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.061	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-90505**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/3/2021**	RunNo: **158713**
Client ID: **LCSW**	Batch ID: **90505**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/5/2021**	SeqNo: **4455849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.658	0.10	10.00	0	96.6	85	115				
Barium	9.458	1.0	10.00	0	94.6	85	115				
Manganese	98.136	0.50	100.0	0	98.1	85	115				
Molybdenum	10.313	0.50	10.00	0	103	85	115				
Selenium	9.303	0.50	10.00	0	93.0	85	115				

Sample ID **N048208-013CMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/3/2021**	RunNo: **158713**
Client ID: **ZZZZZZ**	Batch ID: **90505**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/5/2021**	SeqNo: **4455875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	71.994	1.0	10.00	65.62	63.8	75	125				S
Molybdenum	75.934	0.50	10.00	67.62	83.1	75	125				
Selenium	10.142	0.50	10.00	0.9969	91.4	75	125				

Sample ID **N048208-013CMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/3/2021**	RunNo: **158713**
Client ID: **ZZZZZZ**	Batch ID: **90505**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/5/2021**	SeqNo: **4455876**

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: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048208-013CMS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713	
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455876	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Manganese	363.328	2.5	100.0	278.8	84.6	75	125					

Sample ID	N048208-013CMSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713	
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455877	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Barium	72.872	1.0	10.00	65.62	72.6	75	125	71.99	1.21	20	S	
Molybdenum	77.050	0.50	10.00	67.62	94.3	75	125	75.93	1.46	20		
Selenium	9.824	0.50	10.00	0.9969	88.3	75	125	10.14	3.18	20		

Sample ID	N048208-013CMSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713	
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455878	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Manganese	362.593	2.5	100.0	278.8	83.8	75	125	363.3	0.203	20		

Sample ID	N048208-013CMSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158937	
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2021	SeqNo:	4466954	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	3.675	0.10	10.00	3.925	-2.50	75	125	3.959	7.44	20	S	

Sample ID	N048208-013CMS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158937	
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2021	SeqNo:	4466957	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	3.959	0.10	10.00	3.925	0.343	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: N048208
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048208-013C-PS	SampType:	PS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:		RunNo:	158713
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455869

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.114	0.10	10.00	3.925	102	80	120				
Barium	71.577	1.0	10.00	65.62	59.6	80	120				S
Molybdenum	76.491	0.50	10.00	67.62	88.7	80	120				
Selenium	10.306	0.50	10.00	0.9969	93.1	80	120				

Sample ID	N048208-013C-PS	SampType:	PS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:		RunNo:	158713
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455874

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	365.099	2.5	100.0	278.8	86.3	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		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us: N048208
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: [illegible] daniel.moore2@arcadis.com	Address:	Geotracker	RWQCB ✓	1. Chilled
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: JohnTran		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Field tech	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 12/2/21	Sampled By: Nara Tey		Global ID:	Regulatory	5. IR number 3
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			Specify State:	6. Method of Cooling: Ice
Project Name: PG&E Topock - PCM	Signature: Date: 12/2/21				Sample Temp: 4.2°C/3.8°C
Project Number: 30110373.4Q21GW					Courier: ASSET
					Tracking No.:

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Barium, Iron, Manganese (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium (500mL poly)	Total Organic Carbon (SM5310C); H2SO4 (3x40 mL VOA)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048208-01	MW-49-365-Q421	12/2/2021	10:22		X			X			E	2	P	BNS	
2	-02	MW-49-365-EB-Q421	12/2/2021	9:30		X						E	1	P	BNS	
3	-03	MW-49-275-Q421	12/2/2021	11:16		X			X			E	2	P	BNS	
4	-04	MW-49-275-EB-Q421	12/2/2021	10:45		X						E	1	P	BNS	
5	-05	MW-49-135-Q421	12/2/2021	12:04		X			X			E	2	P	BNS	
6	-06	MW-49-135-EB-Q421	12/2/2021	11:30		X						E	1	P	BNS	
7	-07	MW-29-Q421	12/2/2021	12:48		X			X			E	2	P	BNS	
8	-08	MW-29-EB-Q421	12/2/2021	12:20		X						E	1	P	BNS	
9	-09	EB-723-Q421	12/2/2021	13:15		X						E	1	P	BNS	
10																
11																
12																
13																
14																
15																

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Nara Tey	12/2/21 16:50	Jonas Peada	12/2/21 16:50
Jonas Peada	12/2/21 1910	Jonas Peada	12/2/21 1910
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished 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
- [x] E = Routine 5-7 Workdays

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

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www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Others ✓ (Specify: RWQCB)
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RWQCB ✓
Address: Roseville, CA 95661	Email: [redacted]	Address:	Sample Receipt Condition: 1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mblo[redacted]@pivox.com P.O.#	2. Headspace
Submitted By: [signature]		Phone: 949-727-1400, ext 200 Fax:	3. Container Intact ✓
Title: Field tech	Phone: 916-786-3302 Fax:	Global ID:	4. Seal Present ✓
Signature: [signature] Date: 12/2/21	Sampled By: Nara Tey		5. IR number 3
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		6. Method of Cooling: Ice
Project Name: PG&E Topock - PCM	Signature: [signature] Date: 12/2/21		Sample Temp: 1.2°C / 3.8°C
Project Number: 30110373.4Q21GW			Courier: ASSET
			Tracking No.:

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Barium, Iron, Molybdenum, Selenium (500mL poly)	Nitrite, sulfate (EPA 300.0) (1 L poly)	Ammonia as Nitrogen (SM4500NH3); H2SO4 (1 L poly)	Total Organic Carbon (SM5310C); H2SO4 (3x40 mL VOA)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048208-10	MW-76-039-Q421	12/2/2021	10:43		X	X	X	X	X	X	X	X	E	8	P	BNS	
2	-11	MW-76-156-Q421	12/2/2021	10:01		X	X	X	X	X	X	X	X	E	8	P	BNS	
3	-12	MW-76-181-Q421	12/2/2021	11:25		X	X	X	X	X	X	X	X	E	8	P	BNS	
4	-13	MW-76-218-Q421	12/2/2021	12:11		X	X	X	X	X	X	X	X	E	11	P	BNS	MS/MSD
5	-14	MW-77-046-Q421	12/2/2021	15:21		X	X	X	X	X			X	E	6	P	BNS	
	-15	MW-77-102-Q421	12/2/2021	13:26		X	X	X	X	X			X	E	6	P	BNS	
7	-16	MW-77-158-Q421	12/2/2021	14:34		X	X	X	X	X			X	E	6	P	BNS	
8	-17	MW-937-Q421	12/2/2021	14:44		X	X	X	X	X			X	E	6	P	BNS	
9	-18	MW-77-187-Q421	12/2/2021	14:03		X	X	X	X	X			X	E	6	P	BNS	
10	-19	EB-724-Q421	12/2/2021	15:40		X								E	1	P	BNS	
11																		
12																		
13																		
14																		

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Nara Tey	12/2/21 16:50	Jonas Deady	12/2/21 16:50
Jonas Deady	12/2/21 19:10	Jonas Deady	12/2/21 19:10

Turn Around Time (TAT)

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

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
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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:	B	(NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	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:	12/2/2021	Workorder:	N048208
Rep sample Temp (Deg C):	4.2/3.8	IR Gun ID:	3
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:

For:

Checklist Completed By: YR GGarcia 12/6/2021

Reviewed By: MBC 12/8/2021

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048208

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/2/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048208-001A	MW-49-365-Q421	12/2/2021 10:22:00 AM	12/16/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-001B			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048208-002A	MW-49-365-EB-Q421	12/2/2021 9:30:00 AM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-003A	MW-49-275-Q421	12/2/2021 11:16:00 AM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-003B			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048208-004A	MW-49-275-EB-Q421	12/2/2021 10:45:00 AM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-005A	MW-49-135-Q421	12/2/2021 12:04:00 PM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-005B			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048208-006A	MW-49-135-EB-Q421	12/2/2021 11:30:00 AM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-007A	MW-29-Q421	12/2/2021 12:48:00 PM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-007B			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048208-008A	MW-29-EB-Q421	12/2/2021 12:20:00 PM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-009A	EB-723-Q421	12/2/2021 1:15:00 PM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-010A	MW-76-039-Q421	12/2/2021 10:43:00 AM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-010B			12/16/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☑	☐	☑	WW
N048208-010C			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048208

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/2/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048208-010C	MW-76-039-Q421	12/2/2021 10:43:00 AM	12/16/2021	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048208-010D			12/16/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/16/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048208-010E			12/16/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			12/16/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048208-010F			12/16/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048208-011A	MW-76-156-Q421	12/2/2021 10:01:00 AM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-011B			12/16/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☑	☐	☑	WW
N048208-011C			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048208-011D			12/16/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/16/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048208-011E			12/16/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			12/16/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048208-011F			12/16/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048208-012A	MW-76-181-Q421	12/2/2021 11:25:00 AM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048208

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/2/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048208-012B	MW-76-181-Q421	12/2/2021 11:25:00 AM	12/16/2021	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☑	☐	☑	WW
N048208-012C			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048208-012D			12/16/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/16/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048208-012E			12/16/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
			12/16/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☐	☑	SUB
N048208-012F			12/16/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048208-013A	MW-76-218-Q421	12/2/2021 12:11:00 PM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☑	☐	WW
N048208-013B			12/16/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☑	☑	☑	WW
N048208-013C			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/16/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☑	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
N048208-013D			12/16/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☑	☐	WW
			12/16/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☑	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048208

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/2/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048208-013E	MW-76-218-Q421	12/2/2021 12:11:00 PM	12/16/2021	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☑	☑	SUB
			12/16/2021		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	☐	☑	☑	SUB
N048208-013F			12/16/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☑	☐	VW
N048208-014A	MW-77-046-Q421	12/2/2021 3:21:00 PM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-014B			12/16/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048208-014C			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048208-014D			12/16/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048208-015A	MW-77-102-Q421	12/2/2021 1:26:00 PM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-015B			12/16/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048208-015C			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048208-015D			12/16/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048208-016A	MW-77-158-Q421	12/2/2021 2:34:00 PM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048208

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/2/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048208-016B	MW-77-158-Q421	12/2/2021 2:34:00 PM	12/16/2021	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048208-016C			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048208-016D			12/16/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048208-017A	MW-937-Q421	12/2/2021 2:44:00 PM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-017B			12/16/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048208-017C			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048208-017D			12/16/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048208-018A	MW-77-187-Q421	12/2/2021 2:03:00 PM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-018B			12/16/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048208-018C			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048208

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/2/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048208-018C	MW-77-187-Q421	12/2/2021 2:03:00 PM	12/16/2021	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048208-018D			12/16/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048208-019A	EB-724-Q421	12/2/2021 3:40:00 PM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048208-020A	FOLDER	12/16/2021	12/16/2021		Folder	Folder	☐	☐	☐	LAB
			12/16/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/16/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Nara Tep

06-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3D	SM4500-NO3F	
N048208-010E / MW-76-039-Q421	Groundwater	12/2/2021 10:43:00 AM	16OZP	1	1	
N048208-011E / MW-76-156-Q421	Groundwater	12/2/2021 10:01:00 AM	16OZP	1	1	
N048208-012E / MW-76-181-Q421	Groundwater	12/2/2021 11:25:00 AM	16OZP	1	1	
N048208-013E / MW-76-218-Q421	Groundwater	12/2/2021 12:11:00 PM	16OZP	1	1	(MS/MSD)
N048208-014B / MW-77-046-Q421	Groundwater	12/2/2021 3:21:00 PM	8OZP		1	
N048208-015B / MW-77-102-Q421	Groundwater	12/2/2021 1:26:00 PM	8OZP		1	
N048208-016B / MW-77-158-Q421	Groundwater	12/2/2021 2:34:00 PM	8OZP		1	
N048208-017B / MW-937-Q421	Groundwater	12/2/2021 2:44:00 PM	8OZP		1	
N048208-018B / MW-77-187-Q421	Groundwater	12/2/2021 2:03:00 PM	8OZP		1	

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48208A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite and Ammonia by SM4500NH3D. EDD requirement Labspec7 edata.

GSO #: 555436439

	Date/Time		Date/Time
Relinquished by: YRJ	12/6/2021 1630	**Received by:**	
Relinquished by:		**Received by:**	

December 18, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048209

RE: PG&E Topock - RCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 02, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048209

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 218.6:

Dilution was necessary for sample N048209-002 due to matrix interference. Sample was analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Sample was reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N048208-013C-MS and N048208-013C-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Arsenic in QC samples N048208-013C-MS and N048208-013C-MSD possibly due to matrix interference. Post Spike (PS) passed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Method Blank (MB) has detect greater than 1/2 the reporting limit for Arsenic. However, samples results for this analyte were either none-detect (ND) or greater than 5x the Method Blank detection therefore reanalysis of the samples was not necessary.

ASSET Laboratories

Date: *18-Dec-21*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048209
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048209-001A	MW-15-Q421	Groundwater	12/2/2021 8:28:00 AM	12/2/2021	12/18/2021
N048209-001B	MW-15-Q421	Groundwater	12/2/2021 8:28:00 AM	12/2/2021	12/18/2021
N048209-002A	MW-68BR-280-Q421	Groundwater	12/2/2021 2:44:00 PM	12/2/2021	12/18/2021
N048209-002B	MW-68BR-280-Q421	Groundwater	12/2/2021 2:44:00 PM	12/2/2021	12/18/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-15-Q421
Lab Order:	N048209	**Collection Date:**	12/2/2021 8:28:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048209-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211203B**	QC Batch: **R158652**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	13	0.050	0.40		µg/L	2	12/3/2021 11:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	13	0.035	1.0		µg/L	1	12/5/2021 10:09 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:**	MW-68BR-280-Q421
Lab Order:	N048209	**Collection Date:**	12/2/2021 2:44:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048209-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211203B**	QC Batch: **R158652**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/4/2021 03:40 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/5/2021 10:21 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: N048209
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R158652	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652
Client ID:	LCSW	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452941

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.839	0.20	5.000	0	96.8	90	110				

Sample ID	MB-R158652	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652
Client ID:	PBW	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452942

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

Sample ID	N048209-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652
Client ID:	ZZZZZZ	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452944

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	22.713	0.40	10.00	12.88	98.3	90	110				

Sample ID	N048209-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652
Client ID:	ZZZZZZ	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/3/2021	SeqNo:	4452945

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	22.390	0.40	10.00	12.88	95.1	90	110	22.71	1.43	20	

Sample ID	N048199-002ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158652
Client ID:	ZZZZZZ	Batch ID:	R158652	TestNo:	EPA 218.6			Analysis Date:	12/4/2021	SeqNo:	4452948

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.327	0.20						2.361	1.44	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: N048209
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048186-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158652**
Client ID: **ZZZZZZ** Batch ID: **R158652** TestNo: **EPA 218.6** Analysis Date: **12/4/2021** SeqNo: **4452962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.715	1.0	5.000	0	94.3	90	110				

Sample ID **N048186-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158652**
Client ID: **ZZZZZZ** Batch ID: **R158652** TestNo: **EPA 218.6** Analysis Date: **12/4/2021** SeqNo: **4452966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.917	1.0	5.000	0	98.3	90	110				

Sample ID **N048186-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158652**
Client ID: **ZZZZZZ** Batch ID: **R158652** TestNo: **EPA 218.6** Analysis Date: **12/4/2021** SeqNo: **4452968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.881	1.0	5.000	0	97.6	90	110				

Sample ID **N048209-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158652**
Client ID: **ZZZZZZ** Batch ID: **R158652** TestNo: **EPA 218.6** Analysis Date: **12/4/2021** SeqNo: **4452970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.848	1.0	5.000	0	97.0	90	110				

Sample ID **N048210-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158652**
Client ID: **ZZZZZZ** Batch ID: **R158652** TestNo: **EPA 218.6** Analysis Date: **12/4/2021** SeqNo: **4452972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2085.840	40	1000	1181	90.5	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: N048209
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90505	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713
Client ID:	PBW	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455760

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

Sample ID	LCS-90505	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713
Client ID:	LCSW	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455761

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.201	1.0	10.00	0	102	85	115				

Sample ID	N048208-013CMS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455788

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	282.037	5.0	10.00	282.8	-7.67	75	125				S

Sample ID	N048208-013CMSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455790

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	282.290	5.0	10.00	282.8	-5.13	75	125	282.0	0.0899	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: N048209
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID **N048208-013C-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:				RunNo: **158713**			
Client ID: **ZZZZZZ**	Batch ID: **90505**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/5/2021**				SeqNo: **4455786**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	284.762	5.0	10.00	282.8	19.6	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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-15-Q421
Lab Order:	N048209	**Collection Date:**	12/2/2021 8:28:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048209-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Arsenic	1.2	0.050	0.10		µg/L	1	12/5/2021 10:09 PM
Manganese	ND	0.026	0.50		µg/L	1	12/5/2021 10:09 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:**	MW-68BR-280-Q421
Lab Order:	N048209	**Collection Date:**	12/2/2021 2:44:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048209-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211205A**	QC Batch: **90505**			PrepDate:	**12/3/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/5/2021 10:21 PM
Manganese	60	0.026	0.50		µg/L	1	12/5/2021 10:21 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048209
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	MB-90505	SampType:	MBLK	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713
Client ID:	PBW	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455848

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.061	0.10									
Manganese	ND	0.50									

Sample ID	LCS-90505	SampType:	LCS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713
Client ID:	LCSW	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455849

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.658	0.10	10.00	0	96.6	85	115				
Manganese	98.136	0.50	100.0	0	98.1	85	115				

Sample ID	N048208-013CMS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455876

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	363.328	2.5	100.0	278.8	84.6	75	125				

Sample ID	N048208-013CMSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158713
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455878

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	362.593	2.5	100.0	278.8	83.8	75	125	363.3	0.203	20	

Sample ID	N048208-013CMSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158937
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2021	SeqNo:	4466954

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	3.675	0.10	10.00	3.925	-2.50	75	125	3.959	7.44	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: N048209
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048208-013CMS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/3/2021	RunNo:	158937
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2021	SeqNo:	4466957

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	3.959	0.10	10.00	3.925	0.343	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: N048209
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048208-013C-PS	SampType:	PS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:		RunNo:	158713
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455869

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.114	0.10	10.00	3.925	102	80	120				

Sample ID	N048208-013C-PS	SampType:	PS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:		RunNo:	158713
Client ID:	ZZZZZZ	Batch ID:	90505	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4455874

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	365.099	2.5	100.0	278.8	86.3	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

N048209

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us#
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
			Geotracker	RWQCB ✓	1. Chilled ✓
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com dmoore@arcadis.com	Address:	Labspec	CalTrans	2. Headspace
			Others ✓	LEVEL III	3. Container Intact ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Specify: RWQCB	LEVEL IV	4. Seal Present ✓
Submitted By:				Regulatory	5. IR number 3
Title: Field tech	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Global ID:	Specify State:	6. Method of Cooling: Ice
Signature: Date: 12/2/21	Sampled By: Nara Tep				Sample Temp: 4.2°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

Project Name: PG&E Topock - RCM

Project Number: 30110373.4Q21GW

Signature: Date: 12/2/21

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

Courier: ASSET

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Barium, Iron, Molybdenum, Selenium (500mL poly)	Nitrite, sulfate (EPA 300.0) (1 L poly)	Ammonia as Nitrogen (SM4500NH3); H2SO4 (1 L poly)	Total Organic Carbon (SM5310C); H2SO4 (3x40 mL VOA)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048209-01	MW-15-Q421	12/2/2021	8:28		X		X	X					E	2	P	BNS	
2	-02	MW-68BR-280-Q421	12/2/2021	14:44		X		X	X					E	2	P	BNS	
3		~~EB-723-Q421~~	~~12/2/2021~~	~~13:15~~		~~X~~								~~E~~	~~1~~	~~P~~	~~BNS~~	①
4																		
5																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Nara Tep	12/2/21 16:50	Jonas Deada	12/2/21 16:50
Jonas Deada	12/2/21 19:10	Jonas Deada	12/2/21 19:10

Turn Around Time (TAT)

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

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	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:	12/2/2021	Workorder:	N048209
Rep sample Temp (Deg C):	4.2	IR Gun ID:	3

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:

For:

Checklist Completed By: YR GGarcia 12/6/2021 Reviewed By: MBC 12/6/2021

ASSET Laboratories

WORK ORDER Summary

03-Dec-21

WorkOrder: N048209

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/2/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048209-001A	MW-15-Q421	12/2/2021 8:28:00 AM	12/16/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048209-001B			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048209-002A	MW-68BR-280-Q421	12/2/2021 2:44:00 PM	12/16/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048209-002B			12/16/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/16/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048209-003A	FOLDER	12/16/2021	12/16/2021		Folder	Folder	☐	☐	☐	LAB
			12/16/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/16/2021		Folder	Folder	☐	☐	☐	LAB

December 22, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048222

RE: PG&E Topock - PCM, 30110373.4Q21GW

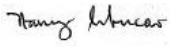
Attention: Dan Bush

Enclosed are the results for sample(s) received on December 03, 2021 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,



Nancy Sibucao
Laboratory Director

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 ASSET 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:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Sample N048222-008 required initial dilution due to matrix. Sample has color.

Because the results for total dissolved chromium (11 ug/L) and hexavalent chromium (8.0 ug/L) for sample N048222-07 (MW-36-100-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (2.6 ug/L) and hexavalent chromium (0 ug/L) for sample N048222-010 (MW-30-050-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) is outside recovery criteria for Iron in QC sample N048208-013C-MS possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Barium in QC

samples N048222-008CMS and N048222-008CMSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Because the results for total dissolved chromium (11 ug/L) and hexavalent chromium (8.0 ug/L) for sample N048222-07 (MW-36-100-Q421) 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 11 and 9.7 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (2.6 ug/L) and hexavalent chromium (0 ug/L) for sample N048222-010 (MW-30-050-Q421) 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 2.7 and 0.21 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Analytical Comments for SM 5310C:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N048222-008D-MS/MSD at 1x dilution possibly due to matrix interference. QC samples were diluted and recovery passed criteria. Thus sample reference N048222-008D and MS/MSD were reported at 5x dilution. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048222
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048222-001A	MW-36-020-Q421	Groundwater	12/3/2021 10:00:00 AM	12/3/2021	12/22/2021
N048222-001B	MW-36-020-Q421	Groundwater	12/3/2021 10:00:00 AM	12/3/2021	12/22/2021
N048222-001C	MW-36-020-Q421	Groundwater	12/3/2021 10:00:00 AM	12/3/2021	12/22/2021
N048222-001D	MW-36-020-Q421	Groundwater	12/3/2021 10:00:00 AM	12/3/2021	12/22/2021
N048222-002A	MW-36-040-Q421	Groundwater	12/3/2021 9:35:00 AM	12/3/2021	12/22/2021
N048222-002B	MW-36-040-Q421	Groundwater	12/3/2021 9:35:00 AM	12/3/2021	12/22/2021
N048222-002C	MW-36-040-Q421	Groundwater	12/3/2021 9:35:00 AM	12/3/2021	12/22/2021
N048222-002D	MW-36-040-Q421	Groundwater	12/3/2021 9:35:00 AM	12/3/2021	12/22/2021
N048222-003A	MW-931-Q421	Groundwater	12/3/2021 9:45:00 AM	12/3/2021	12/22/2021
N048222-003B	MW-931-Q421	Groundwater	12/3/2021 9:45:00 AM	12/3/2021	12/22/2021
N048222-003C	MW-931-Q421	Groundwater	12/3/2021 9:45:00 AM	12/3/2021	12/22/2021
N048222-003D	MW-931-Q421	Groundwater	12/3/2021 9:45:00 AM	12/3/2021	12/22/2021
N048222-004A	MW-36-050-Q421	Groundwater	12/3/2021 8:54:00 AM	12/3/2021	12/22/2021
N048222-004B	MW-36-050-Q421	Groundwater	12/3/2021 8:54:00 AM	12/3/2021	12/22/2021
N048222-004C	MW-36-050-Q421	Groundwater	12/3/2021 8:54:00 AM	12/3/2021	12/22/2021
N048222-004D	MW-36-050-Q421	Groundwater	12/3/2021 8:54:00 AM	12/3/2021	12/22/2021
N048222-005A	MW-36-070-Q421	Groundwater	12/3/2021 9:30:00 AM	12/3/2021	12/22/2021
N048222-005B	MW-36-070-Q421	Groundwater	12/3/2021 9:30:00 AM	12/3/2021	12/22/2021
N048222-005C	MW-36-070-Q421	Groundwater	12/3/2021 9:30:00 AM	12/3/2021	12/22/2021
N048222-005D	MW-36-070-Q421	Groundwater	12/3/2021 9:30:00 AM	12/3/2021	12/22/2021
N048222-006A	MW-36-090-Q421	Groundwater	12/3/2021 9:01:00 AM	12/3/2021	12/22/2021
N048222-006B	MW-36-090-Q421	Groundwater	12/3/2021 9:01:00 AM	12/3/2021	12/22/2021
N048222-006C	MW-36-090-Q421	Groundwater	12/3/2021 9:01:00 AM	12/3/2021	12/22/2021
N048222-006D	MW-36-090-Q421	Groundwater	12/3/2021 9:01:00 AM	12/3/2021	12/22/2021
N048222-007A	MW-36-100-Q421	Groundwater	12/3/2021 8:22:00 AM	12/3/2021	12/22/2021
N048222-007B	MW-36-100-Q421	Groundwater	12/3/2021 8:22:00 AM	12/3/2021	12/22/2021
N048222-007C	MW-36-100-Q421	Groundwater	12/3/2021 8:22:00 AM	12/3/2021	12/22/2021
N048222-007D	MW-36-100-Q421	Groundwater	12/3/2021 8:22:00 AM	12/3/2021	12/22/2021
N048222-008A	MW-30-030-Q421	Groundwater	12/3/2021 10:40:00 AM	12/3/2021	12/22/2021

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048222
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048222-008B	MW-30-030-Q421	Groundwater	12/3/2021 10:40:00 AM	12/3/2021	12/22/2021
N048222-008C	MW-30-030-Q421	Groundwater	12/3/2021 10:40:00 AM	12/3/2021	12/22/2021
N048222-008D	MW-30-030-Q421	Groundwater	12/3/2021 10:40:00 AM	12/3/2021	12/22/2021
N048222-009A	MW-30-030-EB-Q421	Groundwater	12/3/2021 10:15:00 AM	12/3/2021	12/22/2021
N048222-010A	MW-30-050-Q421	Groundwater	12/3/2021 10:21:00 AM	12/3/2021	12/22/2021
N048222-010B	MW-30-050-Q421	Groundwater	12/3/2021 10:21:00 AM	12/3/2021	12/22/2021
N048222-010C	MW-30-050-Q421	Groundwater	12/3/2021 10:21:00 AM	12/3/2021	12/22/2021
N048222-010D	MW-30-050-Q421	Groundwater	12/3/2021 10:21:00 AM	12/3/2021	12/22/2021
N048222-011A	EB-726-Q421	Groundwater	12/3/2021 10:30:00 AM	12/3/2021	12/22/2021
N048222-012A	EB-725-Q421	Groundwater	12/3/2021 10:55:00 AM	12/3/2021	12/22/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-020-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 10:00:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211206A**	QC Batch: **R158695**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/6/2021 11:33 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211208D**	QC Batch: **90519**			PrepDate:	**12/5/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/8/2021 09:34 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:**	MW-36-040-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:35:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211206A**	QC Batch: **R158695**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/6/2021 12:11 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211208D**	QC Batch: **90519**			PrepDate:	**12/5/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/8/2021 09:46 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:**	MW-931-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:45:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211206A** QC Batch: **R158695**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/6/2021 12:29 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211208D** QC Batch: **90519**				PrepDate:	**12/5/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/8/2021 09:58 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:**	MW-36-050-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 8:54:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211206A** QC Batch: **R158695**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/6/2021 12:48 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211208D** QC Batch: **90519**				PrepDate:	**12/5/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/8/2021 10:10 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:**	MW-36-070-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:30:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211206A**	QC Batch: **R158695**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/6/2021 01:07 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211208D**	QC Batch: **90519**			PrepDate:	**12/5/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/8/2021 10:39 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:**	MW-36-090-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:01:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211206A** QC Batch: **R158695**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/6/2021 01:26 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211208D** QC Batch: **90519**				PrepDate:	**12/5/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/8/2021 10:51 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:**	MW-36-100-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 8:22:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211206A** QC Batch: **R158695**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	8.0	0.025	0.20		µg/L	1	12/6/2021 11:04 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211208D** QC Batch: **90519**				PrepDate:	**12/5/2021**		Analyst: **CEI**
Chromium	11	0.035	1.0		µg/L	1	12/8/2021 11:03 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:**	MW-30-030-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 10:40:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211206A**	QC Batch: **R158695**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/6/2021 10:35 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211208D**	QC Batch: **90519**			PrepDate:	**12/5/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/8/2021 11:15 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:**	MW-30-030-EB-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 10:15:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211206A**	QC Batch: **R158695**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/6/2021 02:04 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:**	MW-30-050-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 10:21:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211206A**	QC Batch: **R158695**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/6/2021 02:32 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211208D**	QC Batch: **90519**			PrepDate:	**12/5/2021**		Analyst: **CEI**
Chromium	2.6	0.035	1.0		µg/L	1	12/9/2021 01:07 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:**	EB-726-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 10:30:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211206A**	QC Batch: **R158695**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/6/2021 02:53 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:**	EB-725-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 10:55:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211206A**	QC Batch: **R158695**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/6/2021 03:12 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: N048222
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158695	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158695		
Client ID:	PBW	Batch ID:	R158695	TestNo:	EPA 218.6			Analysis Date:	12/6/2021	SeqNo:	4454974		
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-R158695	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158695		
Client ID:	LCSW	Batch ID:	R158695	TestNo:	EPA 218.6			Analysis Date:	12/6/2021	SeqNo:	4454975		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.890	0.20	5.000	0	97.8	90	110						

Sample ID	N048222-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158695		
Client ID:	ZZZZZZ	Batch ID:	R158695	TestNo:	EPA 218.6			Analysis Date:	12/6/2021	SeqNo:	4454977		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.851	1.0	5.000	0	97.0	90	110						

Sample ID	N048222-008AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158695		
Client ID:	ZZZZZZ	Batch ID:	R158695	TestNo:	EPA 218.6			Analysis Date:	12/6/2021	SeqNo:	4454978		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.848	1.0	5.000	0	97.0	90	110	4.851	0.0619	20			

Sample ID	N048222-007ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158695		
Client ID:	ZZZZZZ	Batch ID:	R158695	TestNo:	EPA 218.6			Analysis Date:	12/6/2021	SeqNo:	4454980		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	8.055	0.20						8.034	0.265	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: N048222
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048222-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158695
Client ID:	ZZZZZZ	Batch ID:	R158695	TestNo:	EPA 218.6			Analysis Date:	12/6/2021	SeqNo:	4454981

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.121	0.20	5.000	8.034	102	90	110				

Sample ID	N048222-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158695
Client ID:	ZZZZZZ	Batch ID:	R158695	TestNo:	EPA 218.6			Analysis Date:	12/6/2021	SeqNo:	4454983

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.013	0.20	1.000	0	101	90	110				

Sample ID	N048222-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158695
Client ID:	ZZZZZZ	Batch ID:	R158695	TestNo:	EPA 218.6			Analysis Date:	12/6/2021	SeqNo:	4454987

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	90	110				

Sample ID	N048222-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158695
Client ID:	ZZZZZZ	Batch ID:	R158695	TestNo:	EPA 218.6			Analysis Date:	12/6/2021	SeqNo:	4454989

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

Sample ID	N048222-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158695
Client ID:	ZZZZZZ	Batch ID:	R158695	TestNo:	EPA 218.6			Analysis Date:	12/6/2021	SeqNo:	4454991

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	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: N048222
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048222-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158695**
Client ID: **ZZZZZZ**	Batch ID: **R158695**	TestNo: **EPA 218.6**		Analysis Date: **12/6/2021**	SeqNo: **4454993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.027	0.20	1.000	0	103	90	110				

Sample ID **N048222-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158695**
Client ID: **ZZZZZZ**	Batch ID: **R158695**	TestNo: **EPA 218.6**		Analysis Date: **12/6/2021**	SeqNo: **4454995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.996	0.20	1.000	0	99.6	90	110				

Sample ID **N048222-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158695**
Client ID: **ZZZZZZ**	Batch ID: **R158695**	TestNo: **EPA 218.6**		Analysis Date: **12/6/2021**	SeqNo: **4454999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.990	0.20	1.000	0	99.0	90	110				

Sample ID **N048222-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158695**
Client ID: **ZZZZZZ**	Batch ID: **R158695**	TestNo: **EPA 218.6**		Analysis Date: **12/6/2021**	SeqNo: **4455001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.039	0.20	1.000	0	104	90	110				

Sample ID **N048222-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158695**
Client ID: **ZZZZZZ**	Batch ID: **R158695**	TestNo: **EPA 218.6**		Analysis Date: **12/6/2021**	SeqNo: **4455003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.988	0.20	1.000	0	98.8	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: N048222
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048222-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158695
Client ID:	ZZZZZZ	Batch ID:	R158695	TestNo:	EPA 218.6			Analysis Date:	12/6/2021	SeqNo:	4455005

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.986	0.20	1.000	0	98.6	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: N048222
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90519	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158803
Client ID:	PBW	Batch ID:	90519	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/8/2021	SeqNo:	4458821

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

Sample ID	LCS-90519	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158803
Client ID:	LCSW	Batch ID:	90519	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/8/2021	SeqNo:	4458822

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.900	1.0	10.00	0	99.0	85	115				

Sample ID	N048222-008CMS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158803
Client ID:	ZZZZZZ	Batch ID:	90519	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/9/2021	SeqNo:	4458848

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.526	1.0	10.00	0.5403	89.9	75	125				

Sample ID	N048222-008CMSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158803
Client ID:	ZZZZZZ	Batch ID:	90519	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/9/2021	SeqNo:	4458851

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.484	1.0	10.00	0.5403	89.4	75	125	9.526	0.443	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:**	MW-36-020-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 10:00:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211210A**	QC Batch: **R158818**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.6	0.084	1.0		mg/L	1	12/10/2021 01:08 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:**	MW-36-040-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:35:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211210A**	QC Batch: **R158818**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	2.3	0.084	1.0		mg/L	1	12/10/2021 01:24 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:**	MW-931-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:45:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211210A**	QC Batch: **R158818**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	2.3	0.084	1.0		mg/L	1	12/10/2021 01:39 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:**	MW-36-050-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 8:54:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211210A**	QC Batch: **R158818**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.3	0.084	1.0		mg/L	1	12/10/2021 01:55 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:**	MW-36-070-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:30:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211210A**	QC Batch: **R158818**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/10/2021 02:41 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:**	MW-36-090-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:01:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211210A**	QC Batch: **R158818**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/10/2021 02:57 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:**	MW-36-100-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 8:22:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211210A**	QC Batch: **R158818**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/10/2021 03:12 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:**	MW-30-030-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 10:40:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211210A**	QC Batch: **R158818**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	11	0.42	5.0		mg/L	5	12/10/2021 05:48 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:**	MW-30-050-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 10:21:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211210A**	QC Batch: **R158818**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	1.0	0.084	1.0		mg/L	1	12/10/2021 03:28 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: N048222
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID **MB-R158818**	SampType: **MBLK**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158818**
Client ID: **PBW**	Batch ID: **R158818**	TestNo: **SM 5310C**		Analysis Date: **12/10/2021**	SeqNo: **4460293**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID **LCS-R158818**	SampType: **LCS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158818**
Client ID: **LCSW**	Batch ID: **R158818**	TestNo: **SM 5310C**		Analysis Date: **12/10/2021**	SeqNo: **4460294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.795	1.0	5.000	0	95.9	85	115				

Sample ID **N048222-008D-MS**	SampType: **MS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158818**
Client ID: **ZZZZZZ**	Batch ID: **R158818**	TestNo: **SM 5310C**		Analysis Date: **12/10/2021**	SeqNo: **4460318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	33.966	5.0	25.00	10.61	93.4	75	125				

Sample ID **N048222-008D-MSD**	SampType: **MSD**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158818**
Client ID: **ZZZZZZ**	Batch ID: **R158818**	TestNo: **SM 5310C**		Analysis Date: **12/10/2021**	SeqNo: **4460319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	34.161	5.0	25.00	10.61	94.2	75	125	33.97	0.572	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:**	MW-36-020-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 10:00:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**				PrepDate:	**12/5/2021**	Analyst: **DJ**
Iron	1000	13	20		µg/L	1	12/5/2021 08:48 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:**	MW-36-040-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:35:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**			PrepDate:	**12/5/2021**		Analyst: **DJ**
Iron	320	13	20		µg/L	1	12/5/2021 08:53 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:**	MW-931-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:45:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**				PrepDate:	**12/5/2021**	Analyst: **DJ**
Iron	310	13	20		µg/L	1	12/5/2021 09:20 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-050-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 8:54:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**			PrepDate:	**12/5/2021**		Analyst: **DJ**
Iron	150	13	20		µg/L	1	12/5/2021 09:24 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:**	MW-36-070-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:30:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**			PrepDate:	**12/5/2021**		Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/5/2021 09:28 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:**	MW-36-090-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:01:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**				PrepDate:	**12/5/2021**	Analyst: **DJ**
Iron	35	13	20		µg/L	1	12/5/2021 09:32 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:**	MW-36-100-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 8:22:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**				PrepDate:	**12/5/2021**	Analyst: **DJ**
Iron	260	13	20		µg/L	1	12/5/2021 09:37 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:**	MW-30-030-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 10:40:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**				PrepDate:	**12/5/2021**	Analyst: **DJ**
Iron	540	13	20		µg/L	1	12/5/2021 09:42 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:**	MW-30-050-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 10:21:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211205A**	QC Batch: **90517**				PrepDate:	**12/5/2021**	Analyst: **DJ**
Iron	38	13	20		µg/L	1	12/5/2021 10:26 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: N048222
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-90517	SampType:	MBLK	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158643
Client ID:	PBW	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452422

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

Sample ID	N048208-013CMS	SampType:	MS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158643
Client ID:	ZZZZZZ	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452434

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	125.720	20	100.0	0	126	75	125				S

Sample ID	N048208-013CMSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158643
Client ID:	ZZZZZZ	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452435

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	112.018	20	100.0	0	112	75	125	125.7	11.5	20	

Sample ID	N048222-008CMS	SampType:	MS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158643
Client ID:	ZZZZZZ	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452453

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	650.226	20	100.0	536.9	113	75	125				

Sample ID	N048222-008CMSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158643
Client ID:	ZZZZZZ	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452454

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	642.499	20	100.0	536.9	106	75	125	650.2	1.20	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: N048222
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	LCS-90517	SampType:	LCS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158643
Client ID:	LCSW	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452464

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	98.932	20	100.0	0	98.9	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: N048222
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N048208-013C-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:		RunNo:	158643
Client ID:	ZZZZZZ	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452433

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	154.115	20	100.0	0	154	80	120				S

Sample ID	N048222-008C-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	µg/L	Prep Date:		RunNo:	158643
Client ID:	ZZZZZZ	Batch ID:	90517	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/5/2021	SeqNo:	4452452

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	640.961	20	100.0	536.9	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	**Client Sample ID:**	MW-36-020-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 10:00:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216B**	QC Batch: **90519**			PrepDate:		**12/5/2021**	Analyst: **CEI**
Arsenic	0.48	0.050	0.10		µg/L	1	12/16/2021 05:27 PM
Barium	120	0.083	1.0		µg/L	1	12/8/2021 09:34 PM
Manganese	290	0.13	2.5		µg/L	5	12/8/2021 09:40 PM
Molybdenum	17	0.12	0.50		µg/L	1	12/8/2021 09:34 PM
Selenium	ND	0.044	0.50		µg/L	1	12/8/2021 09:34 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:**	MW-36-040-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:35:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211208D**	QC Batch: **90519**			PrepDate:		**12/5/2021**	Analyst: **CEI**
Arsenic	5.0	0.050	0.10		µg/L	1	12/8/2021 09:46 PM
Barium	41	0.083	1.0		µg/L	1	12/8/2021 09:46 PM
Manganese	110	0.026	0.50		µg/L	1	12/8/2021 09:46 PM
Molybdenum	3.5	0.12	0.50		µg/L	1	12/8/2021 09:46 PM
Selenium	ND	0.044	0.50		µg/L	1	12/8/2021 09:46 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
Lab Order: N048222
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048222-003

Client Sample ID: MW-931-Q421
Collection Date: 12/3/2021 9:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211208D**	QC Batch: **90519**			PrepDate:		**12/5/2021**	Analyst: **CEI**
Arsenic	5.2	0.050	0.10		µg/L	1	12/8/2021 09:58 PM
Barium	40	0.083	1.0		µg/L	1	12/8/2021 09:58 PM
Manganese	110	0.026	0.50		µg/L	1	12/8/2021 09:58 PM
Molybdenum	3.3	0.12	0.50		µg/L	1	12/8/2021 09:58 PM
Selenium	ND	0.044	0.50		µg/L	1	12/8/2021 09:58 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:**	MW-36-050-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 8:54:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211208D**	QC Batch: **90519**			PrepDate:	**12/5/2021**		Analyst: **CEI**
Arsenic	5.2	0.050	0.10		µg/L	1	12/8/2021 10:10 PM
Barium	25	0.083	1.0		µg/L	1	12/8/2021 10:10 PM
Manganese	220	0.13	2.5		µg/L	5	12/8/2021 10:33 PM
Molybdenum	4.1	0.12	0.50		µg/L	1	12/8/2021 10:10 PM
Selenium	ND	0.044	0.50		µg/L	1	12/8/2021 10:10 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:**	MW-36-070-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:30:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211208D**	QC Batch: **90519**			PrepDate:	**12/5/2021**		Analyst: **CEI**
Arsenic	2.2	0.050	0.10		µg/L	1	12/8/2021 10:39 PM
Barium	33	0.083	1.0		µg/L	1	12/8/2021 10:39 PM
Manganese	210	0.13	2.5		µg/L	5	12/8/2021 10:45 PM
Molybdenum	4.9	0.12	0.50		µg/L	1	12/8/2021 10:39 PM
Selenium	ND	0.044	0.50		µg/L	1	12/8/2021 10:39 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:**	MW-36-090-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 9:01:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211208D**	QC Batch: **90519**			PrepDate:	**12/5/2021**		Analyst: **CEI**
Arsenic	1.6	0.050	0.10		µg/L	1	12/8/2021 10:51 PM
Barium	36	0.083	1.0		µg/L	1	12/8/2021 10:51 PM
Manganese	72	0.026	0.50		µg/L	1	12/8/2021 10:51 PM
Molybdenum	14	0.12	0.50		µg/L	1	12/8/2021 10:51 PM
Selenium	ND	0.044	0.50		µg/L	1	12/8/2021 10:51 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:**	MW-36-100-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 8:22:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216B**	QC Batch: **90519**				PrepDate:	**12/5/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/16/2021 12:39 PM
Barium	43	0.083	1.0		µg/L	1	12/8/2021 11:03 PM
Manganese	230	0.13	2.5		µg/L	5	12/8/2021 11:09 PM
Molybdenum	19	0.12	0.50		µg/L	1	12/8/2021 11:03 PM
Selenium	ND	0.044	0.50		µg/L	1	12/8/2021 11:03 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
Lab Order: N048222
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048222-008

Client Sample ID: MW-30-030-Q421
Collection Date: 12/3/2021 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211216B**	QC Batch: **90519**			PrepDate:		**12/5/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/16/2021 12:45 PM
Barium	250	0.42	5.0		µg/L	5	12/8/2021 11:21 PM
Manganese	180	0.13	2.5		µg/L	5	12/8/2021 11:21 PM
Molybdenum	48	0.12	0.50		µg/L	1	12/8/2021 11:15 PM
Selenium	0.54	0.044	0.50		µg/L	1	12/8/2021 11:15 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:**	MW-30-050-Q421
Lab Order:	N048222	**Collection Date:**	12/3/2021 10:21:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048222-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216B**	QC Batch: **90519**			PrepDate:		**12/5/2021**	Analyst: **CEI**
Arsenic	2.7	0.050	0.10		µg/L	1	12/16/2021 12:51 PM
Barium	21	0.083	1.0		µg/L	1	12/9/2021 01:07 AM
Manganese	260	0.13	2.5		µg/L	5	12/9/2021 01:13 AM
Molybdenum	4.9	0.12	0.50		µg/L	1	12/9/2021 01:07 AM
Selenium	ND	0.044	0.50		µg/L	1	12/9/2021 01:07 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
Work Order: N048222
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90519**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/5/2021**	RunNo: **158803**
Client ID: **PBW**	Batch ID: **90519**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/8/2021**	SeqNo: **4458916**

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									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-90519**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/5/2021**	RunNo: **158803**
Client ID: **LCSW**	Batch ID: **90519**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/8/2021**	SeqNo: **4458917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.345	0.10	10.00	0	103	85	115				
Barium	10.053	1.0	10.00	0	101	85	115				
Manganese	97.727	0.50	100.0	0	97.7	85	115				
Molybdenum	10.266	0.50	10.00	0	103	85	115				
Selenium	9.166	0.50	10.00	0	91.7	85	115				

Sample ID **N048222-008CMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/5/2021**	RunNo: **158803**
Client ID: **ZZZZZZ**	Batch ID: **90519**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/9/2021**	SeqNo: **4458943**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	60.263	0.50	10.00	48.25	120	75	125				
Selenium	10.478	0.50	10.00	0.5402	99.4	75	125				

Sample ID **N048222-008CMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/5/2021**	RunNo: **158803**
Client ID: **ZZZZZZ**	Batch ID: **90519**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/9/2021**	SeqNo: **4458944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	280.059	5.0	10.00	250.4	296	75	125				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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048222
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048222-008CMS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158803
Client ID:	ZZZZZZ	Batch ID:	90519	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/9/2021	SeqNo:	4458944

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	286.890	2.5	100.0	184.2	103	75	125				

Sample ID	N048222-008CMSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158803
Client ID:	ZZZZZZ	Batch ID:	90519	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/9/2021	SeqNo:	4458946

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	60.048	0.50	10.00	48.25	118	75	125	60.26	0.358	20	
Selenium	11.135	0.50	10.00	0.5402	106	75	125	10.48	6.08	20	

Sample ID	N048222-008CMSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158803
Client ID:	ZZZZZZ	Batch ID:	90519	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/9/2021	SeqNo:	4458949

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	267.282	5.0	10.00	250.4	169	75	125	280.1	4.67	20	S
Manganese	285.796	2.5	100.0	184.2	102	75	125	286.9	0.382	20	

Sample ID	N048222-008CMS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158803
Client ID:	ZZZZZZ	Batch ID:	90519	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/9/2021	SeqNo:	4473684

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.340	0.10	10.00	0.09241	122	75	125				

Sample ID	N048222-008CMSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/5/2021	RunNo:	158803
Client ID:	ZZZZZZ	Batch ID:	90519	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/9/2021	SeqNo:	4473685

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.822	0.10	10.00	0.09241	117	75	125	12.34	4.28	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: N048222
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	N048222-008C-PS	SampType:	PS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:		RunNo:	158803
Client ID:	ZZZZZZ	Batch ID:	90519	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/8/2021	SeqNo:	4458940

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	58.726	0.50	10.00	48.25	105	80	120				
Selenium	10.106	0.50	10.00	0.5402	95.7	80	120				

Sample ID	N048222-008C-PS	SampType:	PS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:		RunNo:	158803
Client ID:	ZZZZZZ	Batch ID:	90519	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/9/2021	SeqNo:	4458941

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	265.275	5.0	10.00	250.4	149	80	120				S
Manganese	283.681	2.5	100.0	184.2	99.5	80	120				

Sample ID	N048222-008C-PS	SampType:	PS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:		RunNo:	158803
Client ID:	ZZZZZZ	Batch ID:	90519	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/8/2021	SeqNo:	4473683

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.830	0.10	10.00	0.09241	117	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		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact Us:
Nevada 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

N048222

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email:	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: nbloes@arcadis.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By:	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact X
Title: Fieldtech			Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 12/3/21	Sampled By: Nana 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			Specify State:	6. Method of Cooling: ICE
Project Name: PG&E Topock - PCM	Signature: Date: 12/3/21				Sample Temp: 0.6°C
Project Number: 30110373.4Q21GW					Courier: ASSET Tracking No.:

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Barium, Iron, Manganese (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium (500mL poly)	Total Organic Carbon (SM5310C); H2SO4 (3x40 mL VOA)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048222-01	MW-36-020-Q421	12/3/2021	10:00		X	X	X	X	X	X	E	6	P	BNS	
2	-02	MW-36-040-Q421	12/3/2021	9:35		X	X	X	X	X	X	E	6	P	BNS	
3	-03	MW-931-Q421	12/3/2021	9:45		X	X	X	X	X	X	E	6	P	BNS	
4	-04	MW-36-050-Q421	12/3/2021	8:54		X	X	X	X	X	X	E	6	P	BNS	
5	-05	MW-36-070-Q421	12/3/2021	9:30		X	X	X	X	X	X	E	6	P	BNS	
6	-06	MW-36-090-Q421	12/3/2021	9:01		X	X	X	X	X	X	E	6	P	BNS	
7	-07	MW-36-100-Q421	12/3/2021	8:22		X	X	X	X	X	X	E	6	P	BNS	
8	-08	MW-30-030-Q421	12/3/2021	10:40		X	X	X	X	X	X	E	9	P	BNS	MS/MSD
9	-09	MW-30-030-EB-Q421	12/3/2021	10:15		X						E	1	P	BNS	
10	-10	MW-30-050-Q421	12/3/2021	10:21		X	X	X	X	X	X	E	6	P	BNS	
11																
12																
13																
14	-11	EB-726-Q421	12/3/2021	10:30								E	1	P	BNS	
15	-12	EB-725-Q421	12/3/2021	10:55								E	1	P	BNS	

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Nana Tep	12/3/21 1138	MEAPPIN	12/3/21 @ 1138
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
MEAPPIN	12/3/21 @ 1359	Yeandra Rodriguez	12/3/21 1359
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished 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
- [x] E = Routine 5-7 Workdays

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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 subscribed to 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:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	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:	12/3/2021	Workorder:	N048222
Rep sample Temp (Deg C):	0.6	IR Gun ID:	3
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:

For:

Checklist Completed By: YR GGarcia 12/6/2021

Reviewed By: MBC 12/9/2021

Subject: RE: PG&E Topock - PCM, 30110373.4Q21GW (ASSET Labs No. N048222)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 12/9/2021, 11:15 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: Tina Rice <Tina.Rice@critigen.com>, "giselle@assetlaboratories.com" <giselle@assetlaboratories.com>, "rustico.aquino@assetlaboratoriesph.com" <rustico.aquino@assetlaboratoriesph.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Hi Yoandra,
Yes, they should be analyzed for Cr6.

Thanks,
Laura

From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Thursday, December 9, 2021 12:36 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: Tina Rice <Tina.Rice@critigen.com>; giselle@assetlaboratories.com; rustico.aquino@assetlaboratoriesph.com; maryann.balilu@assetlaboratoriesph.com
Subject: PG&E Topock - PCM, 30110373.4Q21GW (ASSET Labs No. N048222)

Hi Laura,

Please confirm if samples 11 and 12 on the attached COC should be analyzed for Cr 6+.

--
Thanks,

Yoandra Rodriguez
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 | F: 702.307.2691
California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436

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ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048222

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/3/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048222-001A	MW-36-020-Q421	12/3/2021 10:00:00 AM	12/17/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048222-001B			12/17/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048222-001C			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048222-001D			12/17/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048222-002A	MW-36-040-Q421	12/3/2021 9:35:00 AM	12/17/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048222-002B			12/17/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048222-002C			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048222-002D			12/17/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048222-003A	MW-931-Q421	12/3/2021 9:45:00 AM	12/17/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048222-003B			12/17/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048222-003C			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048222

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/3/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048222-003C	MW-931-Q421	12/3/2021 9:45:00 AM	12/17/2021	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048222-003D			12/17/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048222-004A	MW-36-050-Q421	12/3/2021 8:54:00 AM	12/17/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048222-004B			12/17/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048222-004C			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048222-004D			12/17/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048222-005A	MW-36-070-Q421	12/3/2021 9:30:00 AM	12/17/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048222-005B			12/17/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048222-005C			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048222-005D			12/17/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048222-006A	MW-36-090-Q421	12/3/2021 9:01:00 AM	12/17/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048222-006B			12/17/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048222

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/3/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048222-006C	MW-36-090-Q421	12/3/2021 9:01:00 AM	12/17/2021	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048222-006D			12/17/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048222-007A	MW-36-100-Q421	12/3/2021 8:22:00 AM	12/17/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048222-007B			12/17/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048222-007C			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048222-007D			12/17/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048222-008A	MW-30-030-Q421	12/3/2021 10:40:00 AM	12/17/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☑	☐	WW
N048222-008B			12/17/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☑	☑	SUB
N048222-008C			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/17/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☑	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW

ASSET Laboratories

WORK ORDER Summary

06-Dec-21

WorkOrder: N048222

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/3/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048222-008D	MW-30-030-Q421	12/3/2021 10:40:00 AM	12/17/2021	Groundwater	SM 5310C	TOTAL ORGANIC CARBON	☐	☑	☐	VW
N048222-009A	MW-30-030-EB-Q421	12/3/2021 10:15:00 AM	12/17/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048222-010A	MW-30-050-Q421	12/3/2021 10:21:00 AM	12/17/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048222-010B			12/17/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048222-010C			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/17/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/17/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048222-010D			12/17/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048222-011A	EB-726-Q421	12/3/2021 10:30:00 AM	12/17/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048222-012A	EB-725-Q421	12/3/2021 10:55:00 AM	12/17/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048222-013A	FOLDER	12/17/2021	12/17/2021		Folder	Folder	☐	☐	☐	LAB
			12/17/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/17/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: ~~nana tep~~ Nara Tep

06-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NO3F		
N048222-001B / MW-36-020-Q421	Groundwater	12/3/2021 10:00:00 AM	8OZP	1		
N048222-002B / MW-36-040-Q421	Groundwater	12/3/2021 9:35:00 AM	8OZP	1		
N048222-003B / MW-931-Q421	Groundwater	12/3/2021 9:45:00 AM	8OZP	1		
N048222-004B / MW-36-050-Q421	Groundwater	12/3/2021 8:54:00 AM	8OZP	1		
N048222-005B / MW-36-070-Q421	Groundwater	12/3/2021 9:30:00 AM	8OZP	1		
N048222-006B / MW-36-090-Q421	Groundwater	12/3/2021 9:01:00 AM	8OZP	1		
N048222-007B / MW-36-100-Q421	Groundwater	12/3/2021 8:22:00 AM	8OZP	1		
N048222-008B / MW-30-030-Q421	Groundwater	12/3/2021 10:40:00 AM	8OZP	1	(MS/MSD)	
N048222-010B / MW-30-050-Q421	Groundwater	12/3/2021 10:21:00 AM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48222A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555436439

	Date/Time		Date/Time
Relinquished by: YRJ	12/6/2021 1630	**Received by:**	
Relinquished by:		**Received by:**	

December 22, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048258

RE: PG&E Topock - PCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 07, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET Laboratories - Las Vegas.

ASSET Laboratories **Date:** *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - PCM, 30110373.4Q21GW
Lab Order:	N048258

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.

Subcontracted Analyses:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Chromium in QC sample N048258-001C-MSD possibly due to matrix interference. Post Spike (PS) passed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Manganese in QC samples N048258-001C-MS and N048258-001C-MSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *22-Dec-21*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048258
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048258-001A	MW-89-183-Q421	Groundwater	12/6/2021 11:25:00 AM	12/7/2021	12/22/2021
N048258-001B	MW-89-183-Q421	Groundwater	12/6/2021 11:25:00 AM	12/7/2021	12/22/2021
N048258-001C	MW-89-183-Q421	Groundwater	12/6/2021 11:25:00 AM	12/7/2021	12/22/2021
N048258-002A	MW-89-273-Q421	Groundwater	12/6/2021 12:07:00 PM	12/7/2021	12/22/2021
N048258-002B	MW-89-273-Q421	Groundwater	12/6/2021 12:07:00 PM	12/7/2021	12/22/2021
N048258-002C	MW-89-273-Q421	Groundwater	12/6/2021 12:07:00 PM	12/7/2021	12/22/2021
N048258-003A	MW-40D-Q421	Groundwater	12/6/2021 1:40:00 PM	12/7/2021	12/22/2021
N048258-003B	MW-40D-Q421	Groundwater	12/6/2021 1:40:00 PM	12/7/2021	12/22/2021
N048258-003C	MW-40D-Q421	Groundwater	12/6/2021 1:40:00 PM	12/7/2021	12/22/2021
N048258-004A	MW-40S-Q421	Groundwater	12/6/2021 12:50:00 PM	12/7/2021	12/22/2021
N048258-004B	MW-40S-Q421	Groundwater	12/6/2021 12:50:00 PM	12/7/2021	12/22/2021
N048258-004C	MW-40S-Q421	Groundwater	12/6/2021 12:50:00 PM	12/7/2021	12/22/2021
N048258-005A	MW-920-Q421	Groundwater	12/6/2021 1:00:00 PM	12/7/2021	12/22/2021
N048258-005B	MW-920-Q421	Groundwater	12/6/2021 1:00:00 PM	12/7/2021	12/22/2021
N048258-005C	MW-920-Q421	Groundwater	12/6/2021 1:00:00 PM	12/7/2021	12/22/2021
N048258-006A	EB-728-Q421	Groundwater	12/6/2021 2:15:00 PM	12/7/2021	12/22/2021

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-89-183-Q421
Lab Order:	N048258	**Collection Date:**	12/6/2021 11:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048258-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A**	QC Batch: **R158761**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	0.98	0.025	0.20		µg/L	1	12/8/2021 09:57 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	1.2	0.035	1.0		µg/L	1	12/10/2021 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: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-89-273-Q421
Lab Order:	N048258	**Collection Date:**	12/6/2021 12:07:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048258-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A**	QC Batch: **R158761**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	0.52	0.025	0.20		µg/L	1	12/8/2021 10:17 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	1.4	0.035	1.0		µg/L	1	12/10/2021 03:51 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: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-Q421
Lab Order:	N048258	**Collection Date:**	12/6/2021 1:40:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048258-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A** QC Batch: **R158761**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	45	0.50	4.0		µg/L	20	12/8/2021 10:36 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211210B** QC Batch: **90567**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	41	0.035	1.0		µg/L	1	12/10/2021 04:02 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: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-Q421
Lab Order:	N048258	**Collection Date:**	12/6/2021 12:50:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048258-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A** QC Batch: **R158761**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	43	0.13	1.0		µg/L	5	12/8/2021 10:55 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP8_211210B** QC Batch: **90567**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	45	0.035	1.0		µg/L	1	12/10/2021 04:15 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: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q421
Lab Order:	N048258	**Collection Date:**	12/6/2021 1:00:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048258-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A** QC Batch: **R158761**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	42	0.13	1.0		µg/L	5	12/8/2021 11:33 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211210B** QC Batch: **90567**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	44	0.035	1.0		µg/L	1	12/10/2021 04:26 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: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	EB-728-Q421
Lab Order:	N048258	**Collection Date:**	12/6/2021 2:15:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048258-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A**	QC Batch: **R158761**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/8/2021 11:52 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
Work Order: N048258
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	**MB-R158761**	SampType:	**MBLK**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:		RunNo:	**158761**
Client ID:	**PBW**	Batch ID:	**R158761**	TestNo:	**EPA 218.6**			Analysis Date:	**12/8/2021**	SeqNo:	**4457406**

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-R158761**	SampType:	**LCS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:		RunNo:	**158761**
Client ID:	**LCSW**	Batch ID:	**R158761**	TestNo:	**EPA 218.6**			Analysis Date:	**12/8/2021**	SeqNo:	**4457407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.874	0.20	5.000	0	97.5	90	110				

Sample ID	**N048258-001AMS**	SampType:	**MS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:		RunNo:	**158761**
Client ID:	**ZZZZZZ**	Batch ID:	**R158761**	TestNo:	**EPA 218.6**			Analysis Date:	**12/8/2021**	SeqNo:	**4457409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.959	0.20	1.000	0.9840	97.5	90	110				

Sample ID	**N048258-002AMS**	SampType:	**MS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:		RunNo:	**158761**
Client ID:	**ZZZZZZ**	Batch ID:	**R158761**	TestNo:	**EPA 218.6**			Analysis Date:	**12/8/2021**	SeqNo:	**4457411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.479	0.20	1.000	0.5167	96.2	90	110				

Sample ID	**N048258-003AMS**	SampType:	**MS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:		RunNo:	**158761**
Client ID:	**ZZZZZZ**	Batch ID:	**R158761**	TestNo:	**EPA 218.6**			Analysis Date:	**12/8/2021**	SeqNo:	**4457413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	143.300	4.0	100.0	45.35	98.0	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: N048258
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048258-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	67.619	1.0	25.00	43.05	98.3	90	110				

Sample ID **N048258-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457419**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	66.522	1.0	25.00	42.42	96.4	90	110				

Sample ID **N048258-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.955	0.20	1.000	0	95.5	90	110				

Sample ID **N048260-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.281	0.20	5.000	2.223	101	90	110				

Sample ID **N048260-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.986	0.20	1.000	0	98.6	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: N048258
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048275-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID **N048275-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110	1.059	0.405	20	

Sample ID **N048258-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.045	0.20						0.9840	5.99	20	

Sample ID **N048275-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.022	0.20	1.000	0	102	90	110				

Sample ID **N048275-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.952	0.20	1.000	0	95.2	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: N048258
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048275-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.998	0.20	1.000	0	99.8	90	110				

Sample ID **N048275-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457441**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.171	0.20	1.000	0.1918	97.9	90	110				

Sample ID **N048275-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457443**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.177	0.20	1.000	0.1967	98.0	90	110				

Sample ID **N048275-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.004	0.20	1.000	0	100	90	110				

Sample ID **N048260-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.398	0.20	1.000	0.4479	95.0	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: N048258
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048260-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.138	0.20	1.000	1.096	104	90	110				

Sample ID **N048260-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.197	0.20	1.000	1.171	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: N048258
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90567	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2021	RunNo:	158813
Client ID:	PBW	Batch ID:	90567	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459741

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.116	1.0									

Sample ID	LCS-90567	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2021	RunNo:	158813
Client ID:	LCSW	Batch ID:	90567	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459742

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.051	1.0	10.00	0	101	85	115				

Sample ID	N048258-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2021	RunNo:	158813
Client ID:	ZZZZZZ	Batch ID:	90567	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459748

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.732	1.0	10.00	1.231	75.0	75	125				

Sample ID	N048258-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2021	RunNo:	158813
Client ID:	ZZZZZZ	Batch ID:	90567	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459750

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.644	1.0	10.00	1.231	74.1	75	125	8.732	1.01	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: N048258
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	**N048258-001C-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **158813**
Client ID:	**ZZZZZZ**	Batch ID: **90567**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/10/2021**	SeqNo: **4459746**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.427	1.0	10.00	1.231	82.0	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	**Client Sample ID:**	MW-89-183-Q421
Lab Order:	N048258	**Collection Date:**	12/6/2021 11:25:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048258-001		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211210B** QC Batch: **90567** PrepDate: **12/8/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/10/2021 02:45 PM
Manganese	ND	0.026	0.50		µg/L	1	12/10/2021 02:45 PM
Molybdenum	7.0	0.12	0.50		µg/L	1	12/10/2021 02:45 PM
Selenium	2.5	0.044	0.50		µg/L	1	12/10/2021 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-89-273-Q421
Lab Order:	N048258	**Collection Date:**	12/6/2021 12:07:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048258-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	3.5	0.050	0.10		µg/L	1	12/10/2021 03:51 PM
Manganese	1.8	0.026	0.50		µg/L	1	12/10/2021 03:51 PM
Molybdenum	32	0.12	0.50		µg/L	1	12/10/2021 03:51 PM
Selenium	3.7	0.044	0.50		µg/L	1	12/10/2021 03:51 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: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-Q421
Lab Order:	N048258	**Collection Date:**	12/6/2021 1:40:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048258-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/10/2021 04:02 PM
Manganese	ND	0.026	0.50		µg/L	1	12/10/2021 04:02 PM
Molybdenum	35	0.12	0.50		µg/L	1	12/10/2021 04:02 PM
Selenium	1.1	0.044	0.50		µg/L	1	12/10/2021 04:02 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:**	MW-40S-Q421
Lab Order:	N048258	**Collection Date:**	12/6/2021 12:50:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048258-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	4.3	0.050	0.10		µg/L	1	12/10/2021 04:15 PM
Manganese	ND	0.026	0.50		µg/L	1	12/10/2021 04:15 PM
Molybdenum	32	0.12	0.50		µg/L	1	12/10/2021 04:15 PM
Selenium	11	0.044	0.50		µg/L	1	12/10/2021 04:15 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: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q421
Lab Order:	N048258	**Collection Date:**	12/6/2021 1:00:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048258-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	4.6	0.050	0.10		µg/L	1	12/10/2021 04:26 PM
Manganese	ND	0.026	0.50		µg/L	1	12/10/2021 04:26 PM
Molybdenum	31	0.12	0.50		µg/L	1	12/10/2021 04:26 PM
Selenium	11	0.044	0.50		µg/L	1	12/10/2021 04:26 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: N048258
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **MB-90567**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158813**
Client ID: **PBW**	Batch ID: **90567**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/10/2021**	SeqNo: **4459820**

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

Sample ID **LCS-90567**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158813**
Client ID: **LCSW**	Batch ID: **90567**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/10/2021**	SeqNo: **4459821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.416	0.10	10.00	0	104	85	115				
Manganese	96.736	0.50	100.0	0	96.7	85	115				
Molybdenum	9.973	0.50	10.00	0	99.7	85	115				
Selenium	9.316	0.50	10.00	0	93.2	85	115				

Sample ID **N048258-001C-MS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158813**
Client ID: **ZZZZZZ**	Batch ID: **90567**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/10/2021**	SeqNo: **4459827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.095	0.10	10.00	0	80.9	75	125				
Manganese	72.672	0.50	100.0	0	72.7	75	125				S
Molybdenum	15.735	0.50	10.00	6.952	87.8	75	125				
Selenium	10.453	0.50	10.00	2.549	79.0	75	125				

Sample ID **N048258-001C-MSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158813**
Client ID: **ZZZZZZ**	Batch ID: **90567**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/10/2021**	SeqNo: **4459829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.581	0.10	10.00	0	85.8	75	125	8.095	5.83	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: N048258
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **N048258-001C-MSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158813**
Client ID: **ZZZZZZ**	Batch ID: **90567**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/10/2021**	SeqNo: **4459829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	71.218	0.50	100.0	0	71.2	75	125	72.67	2.02	20	S
Molybdenum	15.672	0.50	10.00	6.952	87.2	75	125	15.73	0.399	20	
Selenium	10.205	0.50	10.00	2.549	76.6	75	125	10.45	2.40	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: N048258
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	**N048258-001C-PS**	SampType: **PS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date:	RunNo: **158813**
Client ID:	**ZZZZZZ**	Batch ID: **90567**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/10/2021**	SeqNo: **4459825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.063	0.10	10.00	0	80.6	80	120				
Manganese	78.078	0.50	100.0	0	78.1	80	120				S
Molybdenum	16.893	0.50	10.00	6.952	99.4	80	120				
Selenium	10.788	0.50	10.00	2.549	82.4	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		

N048258

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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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:	12/7/2021	Workorder:	N048258
Rep sample Temp (Deg C):	2.3	IR Gun ID:	3
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 By: GGJ GGarcia 12/8/2021

Reviewed By: MBC 12/8/2021

ASSET Laboratories

WORK ORDER Summary

08-Dec-21

WorkOrder: N048258

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/7/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048258-001A	MW-89-183-Q421	12/6/2021 11:25:00 AM	12/21/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048258-001B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048258-001C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048258-002A	MW-89-273-Q421	12/6/2021 12:07:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048258-002B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048258-002C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048258-003A	MW-40D-Q421	12/6/2021 1:40:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048258-003B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048258-003C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048258-004A	MW-40S-Q421	12/6/2021 12:50:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048258-004B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048258-004C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048258-005A	MW-920-Q421	12/6/2021 1:00:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-21

WorkOrder: N048258

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/7/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048258-005B	MW-920-Q421	12/6/2021 1:00:00 PM	12/21/2021	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048258-005C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048258-006A	EB-728-Q421	12/6/2021 2:15:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048258-007A	FOLDER	12/21/2021	12/21/2021		Folder	Folder	☐	☐	☐	LAB
			12/21/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/21/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Reggie Tep

08-Dec-21

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**SM4500-NO3F**		
N048258-001B / MW-89-183-Q421	Groundwater	12/6/2021 11:25:00 AM	8OZP	1		
N048258-002B / MW-89-273-Q421	Groundwater	12/6/2021 12:07:00 PM	8OZP	1		
N048258-003B / MW-40D-Q421	Groundwater	12/6/2021 1:40:00 PM	8OZP	1		
N048258-004B / MW-40S-Q421	Groundwater	12/6/2021 12:50:00 PM	8OZP	1		
N048258-005B / MW-920-Q421	Groundwater	12/6/2021 1:00:00 PM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48258A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT

Please analyse for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555475881

		Date/Time			Date/Time
Relinquished by:	GGarcia	12/8/2021 16:30	**Received by:**		
Relinquished by:			**Received by:**		

December 22, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048259

RE: PG&E Topock - PCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 06, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET Laboratories - Las Vegas.

ASSET Laboratories **Date:** *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - PCM, 30110373.4Q21GW
Lab Order:	N048259

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.

Subcontracted Analyses:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N048259-005 due to matrix interference. Sample was analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Sample was reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Chromium in QC sample N048258-001C-MSD possibly due to matrix interference. Post Spike (PS) passed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *22-Dec-21*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048259
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048259-001A	MW-35-060-Q421	Groundwater	12/6/2021 11:13:00 AM	12/6/2021	12/22/2021
N048259-001B	MW-35-060-Q421	Groundwater	12/6/2021 11:13:00 AM	12/6/2021	12/22/2021
N048259-001C	MW-35-060-Q421	Groundwater	12/6/2021 11:13:00 AM	12/6/2021	12/22/2021
N048259-002A	MW-35-135-Q421	Groundwater	12/6/2021 11:52:00 AM	12/6/2021	12/22/2021
N048259-002B	MW-35-135-Q421	Groundwater	12/6/2021 11:52:00 AM	12/6/2021	12/22/2021
N048259-002C	MW-35-135-Q421	Groundwater	12/6/2021 11:52:00 AM	12/6/2021	12/22/2021
N048259-003A	MW-47-055-Q421	Groundwater	12/6/2021 12:46:00 PM	12/6/2021	12/22/2021
N048259-003B	MW-47-055-Q421	Groundwater	12/6/2021 12:46:00 PM	12/6/2021	12/22/2021
N048259-004A	MW-47-115-Q421	Groundwater	12/6/2021 1:25:00 PM	12/6/2021	12/22/2021
N048259-004B	MW-47-115-Q421	Groundwater	12/6/2021 1:25:00 PM	12/6/2021	12/22/2021
N048259-005A	TW-04-Q421	Groundwater	12/6/2021 2:37:00 PM	12/6/2021	12/22/2021
N048259-005B	TW-04-Q421	Groundwater	12/6/2021 2:37:00 PM	12/6/2021	12/22/2021
N048259-006A	EB-727-Q421	Groundwater	12/6/2021 3:10:00 PM	12/6/2021	12/22/2021

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q421
Lab Order:	N048259	**Collection Date:**	12/6/2021 11:13:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048259-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211207A** QC Batch: **R158700**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	20	0.13	1.0		µg/L	5	12/7/2021 12:29 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211210B** QC Batch: **90567**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	20	0.035	1.0		µg/L	1	12/10/2021 05:06 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: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q421
Lab Order:	N048259	**Collection Date:**	12/6/2021 11:52:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048259-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211207A** QC Batch: **R158700**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	26	0.13	1.0		µg/L	5	12/7/2021 11:13 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211210B** QC Batch: **90567**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	25	0.035	1.0		µg/L	1	12/10/2021 05:18 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: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-055-Q421
Lab Order:	N048259	**Collection Date:**	12/6/2021 12:46:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048259-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211207A** QC Batch: **R158700**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	17	0.13	1.0		µg/L	5	12/7/2021 12:48 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP8_211210B** QC Batch: **90567**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	18	0.035	1.0		µg/L	1	12/10/2021 05:30 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: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-115-Q421
Lab Order:	N048259	**Collection Date:**	12/6/2021 1:25:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048259-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211207A** QC Batch: **R158700**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	17	0.13	1.0		µg/L	5	12/7/2021 11:41 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211210B** QC Batch: **90567**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	17	0.035	1.0		µg/L	1	12/10/2021 05:41 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: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-Q421
Lab Order:	N048259	**Collection Date:**	12/6/2021 2:37:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048259-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211207A**	QC Batch: **R158700**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	9.1	0.13	1.0		µg/L	5	12/7/2021 01:25 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	9.3	0.035	1.0		µg/L	1	12/10/2021 05:53 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: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	EB-727-Q421
Lab Order:	N048259	**Collection Date:**	12/6/2021 3:10:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048259-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211207A**	QC Batch: **R158700**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/7/2021 01:44 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: N048259
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158700	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158700		
Client ID:	PBW	Batch ID:	R158700	TestNo:	EPA 218.6			Analysis Date:	12/7/2021	SeqNo:	4455189		
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-R158700	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158700		
Client ID:	LCSW	Batch ID:	R158700	TestNo:	EPA 218.6			Analysis Date:	12/7/2021	SeqNo:	4455190		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.803	0.20	5.000	0	96.1	90	110						

Sample ID	N048259-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158700		
Client ID:	ZZZZZZ	Batch ID:	R158700	TestNo:	EPA 218.6			Analysis Date:	12/7/2021	SeqNo:	4455194		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	50.640	1.0	25.00	26.05	98.4	90	110						

Sample ID	N048259-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158700		
Client ID:	ZZZZZZ	Batch ID:	R158700	TestNo:	EPA 218.6			Analysis Date:	12/7/2021	SeqNo:	4455195		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	50.352	1.0	25.00	26.05	97.2	90	110	50.64	0.570	20			

Sample ID	N048259-004ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158700		
Client ID:	ZZZZZZ	Batch ID:	R158700	TestNo:	EPA 218.6			Analysis Date:	12/7/2021	SeqNo:	4455197		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	16.855	1.0						17.17	1.87	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: N048259
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048259-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158700**
Client ID: **ZZZZZZ**	Batch ID: **R158700**	TestNo: **EPA 218.6**		Analysis Date: **12/7/2021**	SeqNo: **4455198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	41.070	1.0	25.00	17.17	95.6	90	110				

Sample ID **N048259-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158700**
Client ID: **ZZZZZZ**	Batch ID: **R158700**	TestNo: **EPA 218.6**		Analysis Date: **12/7/2021**	SeqNo: **4455202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	44.674	1.0	25.00	20.24	97.7	90	110				

Sample ID **N048259-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158700**
Client ID: **ZZZZZZ**	Batch ID: **R158700**	TestNo: **EPA 218.6**		Analysis Date: **12/7/2021**	SeqNo: **4455204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.314	1.0	25.00	17.19	100	90	110				

Sample ID **N048259-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158700**
Client ID: **ZZZZZZ**	Batch ID: **R158700**	TestNo: **EPA 218.6**		Analysis Date: **12/7/2021**	SeqNo: **4455206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.072	1.0	5.000	9.123	99.0	90	110				

Sample ID **N048259-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158700**
Client ID: **ZZZZZZ**	Batch ID: **R158700**	TestNo: **EPA 218.6**		Analysis Date: **12/7/2021**	SeqNo: **4455208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.977	0.20	1.000	0	97.7	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: N048259
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90567	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2021	RunNo:	158813
Client ID:	PBW	Batch ID:	90567	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459741

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.116	1.0									

Sample ID	LCS-90567	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2021	RunNo:	158813
Client ID:	LCSW	Batch ID:	90567	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459742

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.051	1.0	10.00	0	101	85	115				

Sample ID	N048258-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2021	RunNo:	158813
Client ID:	ZZZZZZ	Batch ID:	90567	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459748

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.732	1.0	10.00	1.231	75.0	75	125				

Sample ID	N048258-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2021	RunNo:	158813
Client ID:	ZZZZZZ	Batch ID:	90567	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459750

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.644	1.0	10.00	1.231	74.1	75	125	8.732	1.01	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: N048259
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID **N048258-001C-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:				RunNo: **158813**			
Client ID: **ZZZZZZ**	Batch ID: **90567**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/10/2021**				SeqNo: **4459746**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.427	1.0	10.00	1.231	82.0	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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q421
Lab Order:	N048259	**Collection Date:**	12/6/2021 11:13:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048259-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**				PrepDate:	**12/8/2021**	Analyst: **CEI**
Molybdenum	8.8	0.12	0.50		µg/L	1	12/10/2021 05:06 PM
Selenium	0.92	0.044	0.50		µg/L	1	12/16/2021 01:09 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: *22-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q421
Lab Order:	N048259	**Collection Date:**	12/6/2021 11:52:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048259-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Molybdenum	20	0.12	0.50		µg/L	1	12/10/2021 05:18 PM
Selenium	1.0	0.044	0.50		µg/L	1	12/10/2021 05:18 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: N048259
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	MB-90567	SampType:	MBLK	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/8/2021	RunNo:	158813
Client ID:	PBW	Batch ID:	90567	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459820

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

Sample ID	LCS-90567	SampType:	LCS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/8/2021	RunNo:	158813
Client ID:	LCSW	Batch ID:	90567	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459821

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	9.973	0.50	10.00	0	99.7	85	115				
Selenium	9.316	0.50	10.00	0	93.2	85	115				

Sample ID	N048258-001C-MS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/8/2021	RunNo:	158813
Client ID:	ZZZZZZ	Batch ID:	90567	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459827

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	15.735	0.50	10.00	6.952	87.8	75	125				
Selenium	10.453	0.50	10.00	2.549	79.0	75	125				

Sample ID	N048258-001C-MSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/8/2021	RunNo:	158813
Client ID:	ZZZZZZ	Batch ID:	90567	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/10/2021	SeqNo:	4459829

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	15.672	0.50	10.00	6.952	87.2	75	125	15.73	0.399	20	
Selenium	10.205	0.50	10.00	2.549	76.6	75	125	10.45	2.40	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

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD / RTNE
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker / RWQCB ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec / CalTrans
Submitted By: Riggie Tep	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Others ✓ / LEVEL III
Title: Field Technician			Specify: RWQCB / LEVEL IV
Signature: Date: 12/06/21	Sampled By: Riggie Tep		Global ID: / Regulatory / Specify State:
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 - PCM	Signature: Date: 12/06/21		
Project Number: 30110373.4Q21GW			

Sample Receipt Condition

	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	3	
6. Method of Cooling: ICE		
Sample Temp: 1.3 °C		

Courier: ASSET
Tracking No.:

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Barium, Iron, Manganese (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium (500mL poly)	Total Organic Carbon (SM5310C); H2SO4 (3x40 mL VOA)	TRUE	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048259-01	MW-35-060-Q421	12/6/2021	11:13		X	X	X	X	X			E	3	P	BNS	
2	-02	MW-35-135-Q421	12/6/2021	11:52		X	X		X	X			E	3	P	BNS	
3	-03	MW-47-055-Q421	12/6/2021	12:46		X			X				E	2	P	BNS	
4	-04	MW-47-115-Q421	12/6/2021	13:25		X			X				E	2	P	BNS	
5	-05	TW-04-Q421	12/6/2021	14:37		X			X				E	2	P	BNS	
	-06	EB-727-Q421	12/6/2021	15:10		X							E	1	P	BNS	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Riggie Tep	12/06/21 1825	Romeo Alcantara	12/06/21 1825
Romeo Alcantara	12/6/21 1830	Romeo Alcantara	12/6/21 1830
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished 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
X	E	= Routine 5-7 Workdays

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

Special Instruction:

Terms
1. All samples will be disposed of 45 days 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=30 % 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:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	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:	12/6/2021	Workorder:	N048259
Rep sample Temp (Deg C):	2.3	IR Gun ID:	3
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 By: YR YRJ 12/9/2021

Reviewed By: MBC 12/13/2021

ASSET Laboratories

WORK ORDER Summary

07-Dec-21

WorkOrder: N048259

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/6/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048259-001A	MW-35-060-Q421	12/6/2021 11:13:00 AM	12/20/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048259-001B			12/20/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	SUB
N048259-001C			12/20/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048259-002A	MW-35-135-Q421	12/6/2021 11:52:00 AM	12/20/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048259-002B			12/20/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	SUB
N048259-002C			12/20/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048259-003A	MW-47-055-Q421	12/6/2021 12:46:00 PM	12/20/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048259-003B			12/20/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048259-004A	MW-47-115-Q421	12/6/2021 1:25:00 PM	12/20/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048259-004B			12/20/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048259-005A	TW-04-Q421	12/6/2021 2:37:00 PM	12/20/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048259-005B			12/20/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048259-006A	EB-727-Q421	12/6/2021 3:10:00 PM	12/20/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048259-007A	FOLDER	12/20/2021	12/20/2021		Folder	Folder	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

07-Dec-21

WorkOrder: N048259

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/6/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048259-007A	FOLDER	12/20/2021	12/20/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/20/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Reggie Tep

08-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NO3F		
N048259-001B / MW-35-060-Q421	Groundwater	12/6/2021 11:13:00 AM	8OZP	1		
N048259-002B / MW-35-135-Q421	Groundwater	12/6/2021 11:52:00 AM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48259A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555475881

		Date/Time			Date/Time
Relinquished by:	GGarcia	12/8/2021 16:30	**Received by:**		
Relinquished by:			**Received by:**		

December 25, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048260

RE: PG&E Topock - IM3, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 07, 2021 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,

Nancy Sibucao
Laboratory Director

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CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab Order: N048260

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.

Subcontracted Analyses:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.4 ug/L) and hexavalent chromium (0.45 ug/L) for sample N048260-001 (CW-02D-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0.45 ug/L) for sample N048260-002 (MW-926-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (2.3 ug/L) and hexavalent chromium (1.1 ug/L) for sample N048260-003 (CW-02M-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (2.2 ug/L) and hexavalent chromium (1.1 ug/L) for sample N048260-004 (CW-03D-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (3.6 ug/L) and hexavalent chromium (2.2 ug/L) for sample N048260-005 (CW-03M-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N048260-001C-MS1, N048260-001C-MSD1, N048260-002C-MS2 and N048260-002C-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (1.4 ug/L) and hexavalent chromium (0.45 ug/L) for sample N048260-001 (CW-02D-Q421) 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 1.4 and 1.1 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0.45 ug/L) for sample N048260-002 (MW-926-Q421) 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 1.4 and 1.1 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (2.3 ug/L) and hexavalent chromium (1.1 ug/L) for sample N048260-003 (CW-02M-Q421) 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 2.2 and 1.4 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (2.2 ug/L) and hexavalent chromium (1.1 ug/L) for sample N048260-004 (CW-03D-Q421) 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 2.1 and 1.3 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (3.6 ug/L) and hexavalent chromium (2.2 ug/L) for sample N048260-005 (CW-03M-Q421) 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 were4.2 and 3.0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike Duplicate (MSD) is outside recovery criteria for Chromium in QC sample N048258-001C-

MSD possibly due to matrix interference. Post Spike (PS) passed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Manganese in QC samples N048258-001C-MS and N048258-001C-MSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab Order: N048260
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048260-001A	CW-02D-Q421	Groundwater	12/6/2021 2:25:00 PM	12/7/2021	12/25/2021
N048260-001B	CW-02D-Q421	Groundwater	12/6/2021 2:25:00 PM	12/7/2021	12/25/2021
N048260-001C	CW-02D-Q421	Groundwater	12/6/2021 2:25:00 PM	12/7/2021	12/25/2021
N048260-001D	CW-02D-Q421	Groundwater	12/6/2021 2:25:00 PM	12/7/2021	12/25/2021
N048260-002A	MW-926-Q421	Groundwater	12/6/2021 2:35:00 PM	12/7/2021	12/25/2021
N048260-002B	MW-926-Q421	Groundwater	12/6/2021 2:35:00 PM	12/7/2021	12/25/2021
N048260-002C	MW-926-Q421	Groundwater	12/6/2021 2:35:00 PM	12/7/2021	12/25/2021
N048260-002D	MW-926-Q421	Groundwater	12/6/2021 2:35:00 PM	12/7/2021	12/25/2021
N048260-003A	CW-02M-Q421	Groundwater	12/6/2021 1:06:00 PM	12/7/2021	12/25/2021
N048260-003B	CW-02M-Q421	Groundwater	12/6/2021 1:06:00 PM	12/7/2021	12/25/2021
N048260-003C	CW-02M-Q421	Groundwater	12/6/2021 1:06:00 PM	12/7/2021	12/25/2021
N048260-003D	CW-02M-Q421	Groundwater	12/6/2021 1:06:00 PM	12/7/2021	12/25/2021
N048260-004A	CW-03D-Q421	Groundwater	12/6/2021 11:32:00 AM	12/7/2021	12/25/2021
N048260-004B	CW-03D-Q421	Groundwater	12/6/2021 11:32:00 AM	12/7/2021	12/25/2021
N048260-004C	CW-03D-Q421	Groundwater	12/6/2021 11:32:00 AM	12/7/2021	12/25/2021
N048260-004D	CW-03D-Q421	Groundwater	12/6/2021 11:32:00 AM	12/7/2021	12/25/2021
N048260-005A	CW-03M-Q421	Groundwater	12/6/2021 12:11:00 PM	12/7/2021	12/25/2021
N048260-005B	CW-03M-Q421	Groundwater	12/6/2021 12:11:00 PM	12/7/2021	12/25/2021
N048260-005C	CW-03M-Q421	Groundwater	12/6/2021 12:11:00 PM	12/7/2021	12/25/2021
N048260-005D	CW-03M-Q421	Groundwater	12/6/2021 12:11:00 PM	12/7/2021	12/25/2021
N048260-006A	EB-729-Q421	Groundwater	12/6/2021 2:45:00 PM	12/7/2021	12/25/2021

CLIENT: ARCADIS U.S., Inc. - California
Client Sample ID: CW-02D-Q421
Lab Order: N048260
Collection Date: 12/6/2021 2:25:00 PM
Project: PG&E Topock - IM3, 30110373.4Q21GW
Matrix: GROUNDWATER
Lab ID: N048260-001

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211211B**	QC Batch: **90628**			PrepDate:	**12/11/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	12/11/2021 09:08 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: MW-926-Q421
Lab Order: N048260
Collection Date: 12/6/2021 2:35:00 PM
Project: PG&E Topock - IM3, 30110373.4Q21GW
Matrix: GROUNDWATER
Lab ID: N048260-002

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211211B** QC Batch: **90628**				PrepDate:	**12/11/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4200	50	50		mg/L	1	12/11/2021 09:08 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-02M-Q421
Lab Order: N048260
Collection Date: 12/6/2021 1:06:00 PM
Project: PG&E Topock - IM3, 30110373.4Q21GW
Matrix: GROUNDWATER
Lab ID: N048260-003

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211211B**	QC Batch: **90628**			PrepDate:	**12/11/2021**		Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	12/11/2021 09:08 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
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-004

Client Sample ID: CW-03D-Q421
Collection Date: 12/6/2021 11:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211211B**	QC Batch: **90628**				PrepDate:	**12/11/2021**	Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	12/11/2021 09:08 AM

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-005

Client Sample ID: CW-03M-Q421
Collection Date: 12/6/2021 12:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_211211B**	QC Batch: **90628**				PrepDate:	**12/11/2021**	Analyst: **CEI**
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	12/11/2021 09:08 AM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID: **LCS-90628** SampType: **LCS** TestCode: **160.1_2540C_** Units: **mg/L** Prep Date: **12/11/2021** RunNo: **158865**
Client ID: **LCSW** Batch ID: **90628** TestNo: **SM2540C** Analysis Date: **12/11/2021** SeqNo: **4463026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	983.000	10	1000	0	98.3	80	120				

Sample ID: **MB-90628** SampType: **MBLK** TestCode: **160.1_2540C_** Units: **mg/L** Prep Date: **12/11/2021** RunNo: **158865**
Client ID: **PBW** Batch ID: **90628** TestNo: **SM2540C** Analysis Date: **12/11/2021** SeqNo: **4463027**

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: **N048260-001DDUP** SampType: **DUP** TestCode: **160.1_2540C_** Units: **mg/L** Prep Date: **12/11/2021** RunNo: **158865**
Client ID: **ZZZZZZ** Batch ID: **90628** TestNo: **SM2540C** Analysis Date: **12/11/2021** SeqNo: **4463029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4095.000	50						4025	1.72	5	

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
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-001

Client Sample ID: CW-02D-Q421
Collection Date: 12/6/2021 2:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A**	QC Batch: **R158761**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	0.45	0.025	0.20		µg/L	1	12/8/2021 06:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	1.4	0.035	1.0		µg/L	1	12/10/2021 06:16 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: MW-926-Q421
Lab Order: N048260
Collection Date: 12/6/2021 2:35:00 PM
Project: PG&E Topock - IM3, 30110373.4Q21GW
Matrix: GROUNDWATER
Lab ID: N048260-002

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A**	QC Batch: **R158761**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	0.45	0.025	0.20		µg/L	1	12/8/2021 06:24 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	1.5	0.035	1.0		µg/L	1	12/10/2021 06:28 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
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-003

Client Sample ID: CW-02M-Q421
Collection Date: 12/6/2021 1:06:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A** QC Batch: **R158761**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1.1	0.025	0.20		µg/L	1	12/8/2021 06:43 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211210B** QC Batch: **90567**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	2.3	0.035	1.0		µg/L	1	12/10/2021 06:40 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-03D-Q421
Lab Order:	N048260	**Collection Date:**	12/6/2021 11:32:00 AM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048260-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A** QC Batch: **R158761**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1.2	0.025	0.20		µg/L	1	12/8/2021 07:21 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211210B** QC Batch: **90567**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	2.2	0.035	1.0		µg/L	1	12/10/2021 08:07 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-03M-Q421
Lab Order:	N048260	**Collection Date:**	12/6/2021 12:11:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048260-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A**	QC Batch: **R158761**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	2.2	0.025	0.20		µg/L	1	12/8/2021 01:45 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	3.6	0.035	1.0		µg/L	1	12/10/2021 08:19 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:**	EB-729-Q421
Lab Order:	N048260	**Collection Date:**	12/6/2021 2:45:00 PM
Project:	PG&E Topock - IM3, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048260-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211208A**	QC Batch: **R158761**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/8/2021 02:04 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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R158761**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **PBW**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457406**

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-R158761**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **LCSW**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.874	0.20	5.000	0	97.5	90	110				

Sample ID: **N048258-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.959	0.20	1.000	0.9840	97.5	90	110				

Sample ID: **N048258-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.479	0.20	1.000	0.5167	96.2	90	110				

Sample ID: **N048258-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	143.300	4.0	100.0	45.35	98.0	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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048258-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	67.619	1.0	25.00	43.05	98.3	90	110				

Sample ID: **N048258-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457419**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	66.522	1.0	25.00	42.42	96.4	90	110				

Sample ID: **N048258-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.955	0.20	1.000	0	95.5	90	110				

Sample ID: **N048260-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.281	0.20	5.000	2.223	101	90	110				

Sample ID: **N048260-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.986	0.20	1.000	0	98.6	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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048275-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID: **N048275-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110	1.059	0.405	20	

Sample ID: **N048258-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.045	0.20						0.9840	5.99	20	

Sample ID: **N048275-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.022	0.20	1.000	0	102	90	110				

Sample ID: **N048275-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.952	0.20	1.000	0	95.2	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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048275-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.998	0.20	1.000	0	99.8	90	110				

Sample ID: **N048275-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457441**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.171	0.20	1.000	0.1918	97.9	90	110				

Sample ID: **N048275-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457443**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.177	0.20	1.000	0.1967	98.0	90	110				

Sample ID: **N048275-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.004	0.20	1.000	0	100	90	110				

Sample ID: **N048260-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.398	0.20	1.000	0.4479	95.0	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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048260-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.459	0.20	1.000	0.4469	101	90	110				

Sample ID: **N048260-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.138	0.20	1.000	1.096	104	90	110				

Sample ID: **N048260-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158761**
Client ID: **ZZZZZZ**	Batch ID: **R158761**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.197	0.20	1.000	1.171	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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **MB-90567**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158813**
Client ID: **PBW**	Batch ID: **90567**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/10/2021**	SeqNo: **4459741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.116	1.0									

Sample ID: **LCS-90567**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158813**
Client ID: **LCSW**	Batch ID: **90567**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/10/2021**	SeqNo: **4459742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.051	1.0	10.00	0	101	85	115				

Sample ID: **N048258-001C-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158813**
Client ID: **ZZZZZZ**	Batch ID: **90567**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/10/2021**	SeqNo: **4459748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.732	1.0	10.00	1.231	75.0	75	125				

Sample ID: **N048258-001C-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158813**
Client ID: **ZZZZZZ**	Batch ID: **90567**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/10/2021**	SeqNo: **4459750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.644	1.0	10.00	1.231	74.1	75	125	8.732	1.01	20	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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **N048258-001C-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **158813**
Client ID: **ZZZZZZ** Batch ID: **90567** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/10/2021** SeqNo: **4459746**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.427	1.0	10.00	1.231	82.0	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
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-001

Client Sample ID: CW-02D-Q421
Collection Date: 12/6/2021 2:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211209G**	QC Batch: **R158774**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	64	1.2	5.0		mg/L	1	12/9/2021 05:05 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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-002

Client Sample ID: MW-926-Q421
Collection Date: 12/6/2021 2:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211209G**	QC Batch: **R158774**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	64	1.2	5.0		mg/L	1	12/9/2021 05:05 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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-003

Client Sample ID: CW-02M-Q421
Collection Date: 12/6/2021 1:06:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211209G**	QC Batch: **R158774**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	63	1.2	5.0		mg/L	1	12/9/2021 05:05 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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-004

Client Sample ID: CW-03D-Q421
Collection Date: 12/6/2021 11:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211209G**	QC Batch: **R158774**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	70	1.2	5.0		mg/L	1	12/9/2021 05:05 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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-005

Client Sample ID: CW-03M-Q421
Collection Date: 12/6/2021 12:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_211209G**	QC Batch: **R158774**			PrepDate:			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	52	1.2	5.0		mg/L	1	12/9/2021 05:05 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
Work Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID: **LCS-R158774**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158774**
Client ID: **LCSW**	Batch ID: **R158774**	TestNo: **SM 2320 B**		Analysis Date: **12/9/2021**	SeqNo: **4457753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	100.209	5.0	100.0	0	100	85	115				

Sample ID: **MB-R158774**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158774**
Client ID: **PBW**	Batch ID: **R158774**	TestNo: **SM 2320 B**		Analysis Date: **12/9/2021**	SeqNo: **4457754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID: **N048260-001DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158774**
Client ID: **ZZZZZZ**	Batch ID: **R158774**	TestNo: **SM 2320 B**		Analysis Date: **12/9/2021**	SeqNo: **4457756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	63.674	5.0						63.67	0	30	

Sample ID: **N048260-002DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158774**
Client ID: **ZZZZZZ**	Batch ID: **R158774**	TestNo: **SM 2320 B**		Analysis Date: **12/9/2021**	SeqNo: **4457758**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	162.839	5.0	100.0	63.67	99.2	75	125				

Sample ID: **N048260-002DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **158774**
Client ID: **ZZZZZZ**	Batch ID: **R158774**	TestNo: **SM 2320 B**		Analysis Date: **12/9/2021**	SeqNo: **4457759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	163.883	5.0	100.0	63.67	100	75	125	162.8	0.639	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
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-001

Client Sample ID: CW-02D-Q421
Collection Date: 12/6/2021 2:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208B** QC Batch: **R158734**				PrepDate:			Analyst: **RAB**
Chloride	2200	33	250		mg/L	500	12/8/2021 05:04 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208A** QC Batch: **R158728**				PrepDate:			Analyst: **RAB**
Fluoride	2.1	0.064	0.50		mg/L	5	12/8/2021 10:45 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208A** QC Batch: **R158728**				PrepDate:			Analyst: **RAB**
Sulfate	510	3.0	25		mg/L	50	12/8/2021 01:23 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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-002

Client Sample ID: MW-926-Q421
Collection Date: 12/6/2021 2:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208B** QC Batch: **R158734**				PrepDate:			Analyst: **RAB**
Chloride	2200	33	250		mg/L	500	12/8/2021 05:36 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208A** QC Batch: **R158728**				PrepDate:			Analyst: **RAB**
Fluoride	1.9	0.064	0.50		mg/L	5	12/8/2021 11:01 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208A** QC Batch: **R158728**				PrepDate:			Analyst: **RAB**
Sulfate	510	3.0	25		mg/L	50	12/8/2021 02:10 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
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-003

Client Sample ID: CW-02M-Q421
Collection Date: 12/6/2021 1:06:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208B** QC Batch: **R158734**				PrepDate:			Analyst: **RAB**
Chloride	2200	33	250		mg/L	500	12/8/2021 05:51 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208A** QC Batch: **R158728**				PrepDate:			Analyst: **RAB**
Fluoride	3.2	0.064	0.50		mg/L	5	12/8/2021 11:16 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208A** QC Batch: **R158728**				PrepDate:			Analyst: **RAB**
Sulfate	500	3.0	25		mg/L	50	12/8/2021 02:42 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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-004

Client Sample ID: CW-03D-Q421
Collection Date: 12/6/2021 11:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208B** QC Batch: **R158734**				PrepDate:			Analyst: **RAB**
Chloride	2200	33	250		mg/L	500	12/8/2021 06:39 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208A** QC Batch: **R158728**				PrepDate:			Analyst: **RAB**
Fluoride	2.4	0.064	0.50		mg/L	5	12/8/2021 11:32 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208A** QC Batch: **R158728**				PrepDate:			Analyst: **RAB**
Sulfate	500	3.0	25		mg/L	50	12/8/2021 02:58 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
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-005

Client Sample ID: CW-03M-Q421
Collection Date: 12/6/2021 12:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208B** QC Batch: **R158734**				PrepDate:			Analyst: **RAB**
Chloride	2200	33	250		mg/L	500	12/8/2021 06:55 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208A** QC Batch: **R158728**				PrepDate:			Analyst: **RAB**
Fluoride	4.2	0.064	0.50		mg/L	5	12/8/2021 11:48 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_211208A** QC Batch: **R158728**				PrepDate:			Analyst: **RAB**
Sulfate	520	3.0	25		mg/L	50	12/8/2021 03:13 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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID: **LCS-R158734_CL** SampType: **LCS** TestCode: **300_W_CLPG** Units: **mg/L** Prep Date: RunNo: **158734**
Client ID: **LCSW** Batch ID: **R158734** TestNo: **EPA 300.0** Analysis Date: **12/8/2021** SeqNo: **4456999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.069	0.50	2.000	0	103	90	110				

Sample ID: **MB-R158734_CL** SampType: **MBLK** TestCode: **300_W_CLPG** Units: **mg/L** Prep Date: RunNo: **158734**
Client ID: **PBW** Batch ID: **R158734** TestNo: **EPA 300.0** Analysis Date: **12/8/2021** SeqNo: **4457000**

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

Sample ID: **N048260-001DDUP** SampType: **DUP** TestCode: **300_W_CLPG** Units: **mg/L** Prep Date: RunNo: **158734**
Client ID: **ZZZZZZ** Batch ID: **R158734** TestNo: **EPA 300.0** Analysis Date: **12/8/2021** SeqNo: **4457002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2197.600	250						2225	1.23	20	

Sample ID: **N048260-003DMS** SampType: **MS** TestCode: **300_W_CLPG** Units: **mg/L** Prep Date: RunNo: **158734**
Client ID: **ZZZZZZ** Batch ID: **R158734** TestNo: **EPA 300.0** Analysis Date: **12/8/2021** SeqNo: **4457005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3263.500	250	1000	2232	103	80	120				

Sample ID: **N048260-003DMSD** SampType: **MSD** TestCode: **300_W_CLPG** Units: **mg/L** Prep Date: RunNo: **158734**
Client ID: **ZZZZZZ** Batch ID: **R158734** TestNo: **EPA 300.0** Analysis Date: **12/8/2021** SeqNo: **4457006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3262.000	250	1000	2232	103	80	120	3264	0.0460	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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID: **MB-R158728_F**	SampType: **MBLK**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **158728**
Client ID: **PBW**	Batch ID: **R158728**	TestNo: **EPA 300.0**		Analysis Date: **12/8/2021**	SeqNo: **4456686**

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

Sample ID: **LCS-R158728_F**	SampType: **LCS**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **158728**
Client ID: **LCSW**	Batch ID: **R158728**	TestNo: **EPA 300.0**		Analysis Date: **12/8/2021**	SeqNo: **4456687**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.261	0.10	1.250	0	101	90	110				

Sample ID: **N048260-004DMS**	SampType: **MS**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **158728**
Client ID: **ZZZZZZ**	Batch ID: **R158728**	TestNo: **EPA 300.0**		Analysis Date: **12/8/2021**	SeqNo: **4456693**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	8.628	0.50	6.250	2.438	99.0	80	120				

Sample ID: **N048260-004DMSD**	SampType: **MSD**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **158728**
Client ID: **ZZZZZZ**	Batch ID: **R158728**	TestNo: **EPA 300.0**		Analysis Date: **12/8/2021**	SeqNo: **4456694**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	8.963	0.50	6.250	2.438	104	80	120	8.628	3.80	20	

Sample ID: **N048260-003DDUP**	SampType: **DUP**	TestCode: **300_W_FPGE**	Units: **mg/L**	Prep Date:	RunNo: **158728**
Client ID: **ZZZZZZ**	Batch ID: **R158728**	TestNo: **EPA 300.0**		Analysis Date: **12/8/2021**	SeqNo: **4456695**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	3.103	0.50						3.250	4.63	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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID: **MB-R158728_SO4**	SampType: **MBLK**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **158728**
Client ID: **PBW**	Batch ID: **R158728**	TestNo: **EPA 300.0**		Analysis Date: **12/8/2021**	SeqNo: **4456705**

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

Sample ID: **LCS-R158728_SO4**	SampType: **LCS**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **158728**
Client ID: **LCSW**	Batch ID: **R158728**	TestNo: **EPA 300.0**		Analysis Date: **12/8/2021**	SeqNo: **4456706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.187	0.50	4.000	0	105	90	110				

Sample ID: **N048260-001DMS**	SampType: **MS**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **158728**
Client ID: **ZZZZZZ**	Batch ID: **R158728**	TestNo: **EPA 300.0**		Analysis Date: **12/8/2021**	SeqNo: **4456710**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	714.760	25	200.0	509.4	103	80	120				

Sample ID: **N048260-001DMSD**	SampType: **MSD**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **158728**
Client ID: **ZZZZZZ**	Batch ID: **R158728**	TestNo: **EPA 300.0**		Analysis Date: **12/8/2021**	SeqNo: **4456711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	712.285	25	200.0	509.4	101	80	120	714.8	0.347	20	

Sample ID: **N048260-002DDUP**	SampType: **DUP**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **158728**
Client ID: **ZZZZZZ**	Batch ID: **R158728**	TestNo: **EPA 300.0**		Analysis Date: **12/8/2021**	SeqNo: **4456713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	494.665	25						506.2	2.31	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
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-001

Client Sample ID: CW-02D-Q421
Collection Date: 12/6/2021 2:25:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_211219A** QC Batch: **90633** PrepDate: **12/10/2021** Analyst: **DJ**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1.0	0.035	0.10		mg/L	1	12/19/2021 03:30 PM
Calcium	100	0.18	0.50		mg/L	1	12/19/2021 03:30 PM
Magnesium	5.2	0.017	0.10		mg/L	1	12/21/2021 10:44 AM
Potassium	14	0.69	2.5		mg/L	5	12/21/2021 03:39 PM
Sodium	1500	34	50		mg/L	100	12/21/2021 03:43 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
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-002

Client Sample ID: MW-926-Q421
Collection Date: 12/6/2021 2:35:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_211219A** QC Batch: **90633** PrepDate: **12/10/2021** Analyst: **DJ**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	0.97	0.035	0.10		mg/L	1	12/19/2021 04:02 PM
Calcium	95	0.18	0.50		mg/L	1	12/19/2021 04:02 PM
Magnesium	4.9	0.017	0.10		mg/L	1	12/21/2021 11:07 AM
Potassium	10	0.69	2.5		mg/L	5	12/21/2021 03:46 PM
Sodium	1600	68	100		mg/L	200	12/21/2021 03:55 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
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-003

Client Sample ID: CW-02M-Q421
Collection Date: 12/6/2021 1:06:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211219A**	QC Batch: **90633**				PrepDate:	**12/10/2021**	Analyst: **DJ**
Boron	1.1	0.035	0.10		mg/L	1	12/19/2021 04:05 PM
Calcium	140	0.18	0.50		mg/L	1	12/19/2021 04:05 PM
Magnesium	9.8	0.017	0.10		mg/L	1	12/21/2021 11:12 AM
Potassium	15	0.69	2.5		mg/L	5	12/21/2021 04:29 PM
Sodium	1500	34	50		mg/L	100	12/21/2021 04:33 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
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-004

Client Sample ID: CW-03D-Q421
Collection Date: 12/6/2021 11:32:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_211219A** QC Batch: **90633** PrepDate: **12/10/2021** Analyst: **DJ**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	0.89	0.035	0.10		mg/L	1	12/19/2021 04:09 PM
Calcium	73	0.18	0.50		mg/L	1	12/19/2021 04:09 PM
Magnesium	4.6	0.017	0.10		mg/L	1	12/21/2021 11:17 AM
Potassium	11	0.69	2.5		mg/L	5	12/21/2021 04:36 PM
Sodium	1500	34	50		mg/L	100	12/21/2021 04:41 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
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-005

Client Sample ID: CW-03M-Q421
Collection Date: 12/6/2021 12:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211219A**	QC Batch: **90633**				PrepDate:	**12/10/2021**	Analyst: **DJ**
Boron	1.2	0.035	0.10		mg/L	1	12/19/2021 04:13 PM
Calcium	150	0.18	0.50		mg/L	1	12/19/2021 04:13 PM
Magnesium	11	0.017	0.10		mg/L	1	12/21/2021 11:27 AM
Potassium	13	0.69	2.5		mg/L	5	12/21/2021 04:44 PM
Sodium	1500	34	50		mg/L	100	12/21/2021 04:48 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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID: **MB-90633** SampType: **MBLK** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **12/10/2021** RunNo: **159013**
Client ID: **PBW** Batch ID: **90633** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2021** SeqNo: **4471060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.10									
Calcium	ND	0.50									

Sample ID: **N048260-001C-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **12/10/2021** RunNo: **159013**
Client ID: **ZZZZZZ** Batch ID: **90633** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2021** SeqNo: **4471065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5.244	0.10	5.000	1.013	84.6	75	125				
Calcium	101.509	0.50	10.00	99.64	18.7	75	125				S

Sample ID: **N048260-001C-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **12/10/2021** RunNo: **159013**
Client ID: **ZZZZZZ** Batch ID: **90633** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2021** SeqNo: **4471066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5.281	0.10	5.000	1.013	85.4	75	125	5.244	0.711	20	
Calcium	101.608	0.50	10.00	99.64	19.7	75	125	101.5	0.0975	20	S

Sample ID: **LCS1-90633** SampType: **LCS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **12/10/2021** RunNo: **159013**
Client ID: **LCSW** Batch ID: **90633** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2021** SeqNo: **4471099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4.965	0.10	5.000	0	99.3	85	115				
Calcium	9.765	0.50	10.00	0	97.6	85	115				

Sample ID: **MB-90633** SampType: **MBLK** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **12/10/2021** RunNo: **159075**
Client ID: **PBW** Batch ID: **90633** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/21/2021** SeqNo: **4473567**

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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID: **MB-90633**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date: **12/10/2021**	RunNo: **159075**
Client ID: **PBW**	Batch ID: **90633**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/21/2021**	SeqNo: **4473567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	0.044	0.10									

Sample ID: **LCS1-90633**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date: **12/10/2021**	RunNo: **159075**
Client ID: **LCSW**	Batch ID: **90633**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/21/2021**	SeqNo: **4473568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	9.342	0.10	10.00	0	93.4	85	115				

Sample ID: **N048260-001C-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date: **12/10/2021**	RunNo: **159075**
Client ID: **ZZZZZZ**	Batch ID: **90633**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/21/2021**	SeqNo: **4473572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	12.946	0.10	10.00	5.186	77.6	75	125				

Sample ID: **N048260-001C-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date: **12/10/2021**	RunNo: **159075**
Client ID: **ZZZZZZ**	Batch ID: **90633**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/21/2021**	SeqNo: **4473573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	12.842	0.10	10.00	5.186	76.6	75	125	12.95	0.811	20	

Sample ID: **MB-90633**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **mg/L**	Prep Date: **12/10/2021**	RunNo: **159082**
Client ID: **PBW**	Batch ID: **90633**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/21/2021**	SeqNo: **4473691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	0.50									
Sodium	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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID: **N048260-002C-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: RunNo: **159082**
Client ID: **ZZZZZZ** Batch ID: **90633** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/21/2021** SeqNo: **4473703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	30.537	2.5	20.00	10.21	102	75	125				

Sample ID: **N048260-002C-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: RunNo: **159082**
Client ID: **ZZZZZZ** Batch ID: **90633** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/21/2021** SeqNo: **4473704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1777.988	100	20.00	1622	781	75	125				S

Sample ID: **N048260-002C-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **12/10/2021** RunNo: **159082**
Client ID: **ZZZZZZ** Batch ID: **90633** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/21/2021** SeqNo: **4473705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	27.673	2.5	20.00	10.21	87.3	75	125	30.54	9.84	20	

Sample ID: **N048260-002C-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **12/10/2021** RunNo: **159082**
Client ID: **ZZZZZZ** Batch ID: **90633** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/21/2021** SeqNo: **4473706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1508.708	100	20.00	1622	-565	75	125	1778	16.4	20	S

Sample ID: **LCS2-90633** SampType: **LCS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: **12/10/2021** RunNo: **159082**
Client ID: **LCSW** Batch ID: **90633** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/21/2021** SeqNo: **4473723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19.992	0.50	20.00	0	100	85	115				
Sodium	19.967	0.50	20.00	0	99.8	85	115				

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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPM

Sample ID: **N048260-001C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: RunNo: **159013**
Client ID: **ZZZZZZ** Batch ID: **90633** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2021** SeqNo: **4471064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4.996	0.10	5.000	1.013	79.7	80	120				S
Calcium	96.138	0.50	10.00	99.64	-35.0	80	120				S

Sample ID: **N048260-001C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: RunNo: **159075**
Client ID: **ZZZZZZ** Batch ID: **90633** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/21/2021** SeqNo: **4473571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	12.637	0.10	10.00	5.186	74.5	80	120				S

Sample ID: **N048260-002C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: RunNo: **159082**
Client ID: **ZZZZZZ** Batch ID: **90633** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/21/2021** SeqNo: **4473699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	99.930	2.5	100.0	10.21	89.7	80	120				

Sample ID: **N048260-002C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **mg/L** Prep Date: RunNo: **159082**
Client ID: **ZZZZZZ** Batch ID: **90633** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/21/2021** SeqNo: **4473700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	5654.173	100	4000	1622	101	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
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-001

Client Sample ID: CW-02D-Q421
Collection Date: 12/6/2021 2:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/10/2021 06:16 PM
Barium	17	0.083	1.0		µg/L	1	12/10/2021 06:16 PM
Manganese	0.89	0.026	0.50		µg/L	1	12/10/2021 06:16 PM
Molybdenum	14	0.12	0.50		µg/L	1	12/10/2021 06:16 PM
Selenium	4.1	0.044	0.50		µg/L	1	12/10/2021 06:16 PM
Vanadium	3.7	0.067	1.0		µg/L	1	12/10/2021 06:16 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: MW-926-Q421
Lab Order: N048260
Collection Date: 12/6/2021 2:35:00 PM
Project: PG&E Topock - IM3, 30110373.4Q21GW
Matrix: GROUNDWATER
Lab ID: N048260-002

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/10/2021 06:28 PM
Barium	17	0.083	1.0		µg/L	1	12/10/2021 06:28 PM
Manganese	1.0	0.026	0.50		µg/L	1	12/10/2021 06:28 PM
Molybdenum	14	0.12	0.50		µg/L	1	12/10/2021 06:28 PM
Selenium	4.3	0.044	0.50		µg/L	1	12/10/2021 06:28 PM
Vanadium	3.7	0.067	1.0		µg/L	1	12/10/2021 06:28 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-02M-Q421
Lab Order: N048260
Collection Date: 12/6/2021 1:06:00 PM
Project: PG&E Topock - IM3, 30110373.4Q21GW
Matrix: GROUNDWATER
Lab ID: N048260-003

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/10/2021 06:40 PM
Barium	66	0.083	1.0		µg/L	1	12/10/2021 06:40 PM
Manganese	0.75	0.026	0.50		µg/L	1	12/10/2021 06:40 PM
Molybdenum	14	0.12	0.50		µg/L	1	12/10/2021 06:40 PM
Selenium	3.4	0.044	0.50		µg/L	1	12/10/2021 06:40 PM
Vanadium	3.5	0.067	1.0		µg/L	1	12/10/2021 06:40 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
Lab Order: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW
Lab ID: N048260-004

Client Sample ID: CW-03D-Q421
Collection Date: 12/6/2021 11:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**				PrepDate:	**12/8/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/10/2021 08:07 PM
Barium	19	0.083	1.0		µg/L	1	12/10/2021 08:07 PM
Manganese	5.5	0.026	0.50		µg/L	1	12/10/2021 08:07 PM
Molybdenum	13	0.12	0.50		µg/L	1	12/10/2021 08:07 PM
Selenium	3.9	0.044	0.50		µg/L	1	12/10/2021 08:07 PM
Vanadium	2.3	0.067	1.0		µg/L	1	12/10/2021 08:07 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-03M-Q421
Lab Order: N048260
Collection Date: 12/6/2021 12:11:00 PM
Project: PG&E Topock - IM3, 30110373.4Q21GW
Matrix: GROUNDWATER
Lab ID: N048260-005

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211210B**	QC Batch: **90567**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/10/2021 08:19 PM
Barium	34	0.083	1.0		µg/L	1	12/10/2021 08:19 PM
Manganese	2.0	0.026	0.50		µg/L	1	12/10/2021 08:19 PM
Molybdenum	37	0.12	0.50		µg/L	1	12/10/2021 08:19 PM
Selenium	2.5	0.044	0.50		µg/L	1	12/10/2021 08:19 PM
Vanadium	2.6	0.067	1.0		µg/L	1	12/10/2021 08:19 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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **MB-90567** SampType: **MBLK** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/8/2021** RunNo: **158813**
Client ID: **PBW** Batch ID: **90567** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/10/2021** SeqNo: **4459820**

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									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									
Vanadium	ND	1.0									

Sample ID: **LCS-90567** SampType: **LCS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/8/2021** RunNo: **158813**
Client ID: **LCSW** Batch ID: **90567** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/10/2021** SeqNo: **4459821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.416	0.10	10.00	0	104	85	115				
Barium	9.993	1.0	10.00	0	99.9	85	115				
Manganese	96.736	0.50	100.0	0	96.7	85	115				
Molybdenum	9.973	0.50	10.00	0	99.7	85	115				
Selenium	9.316	0.50	10.00	0	93.2	85	115				
Vanadium	10.545	1.0	10.00	0	105	85	115				

Sample ID: **N048258-001C-MS** SampType: **MS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/8/2021** RunNo: **158813**
Client ID: **ZZZZZZ** Batch ID: **90567** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/10/2021** SeqNo: **4459827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.095	0.10	10.00	0	80.9	75	125				
Barium	133.284	1.0	10.00	124.8	84.5	75	125				
Manganese	72.672	0.50	100.0	0	72.7	75	125				S
Molybdenum	15.735	0.50	10.00	6.952	87.8	75	125				
Selenium	10.453	0.50	10.00	2.549	79.0	75	125				
Vanadium	11.891	1.0	10.00	3.786	81.1	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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N048258-001C-MSD** SampType: **MSD** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/8/2021** RunNo: **158813**
Client ID: **ZZZZZZ** Batch ID: **90567** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/10/2021** SeqNo: **4459829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.581	0.10	10.00	0	85.8	75	125	8.095	5.83	20	
Barium	136.556	1.0	10.00	124.8	117	75	125	133.3	2.43	20	
Manganese	71.218	0.50	100.0	0	71.2	75	125	72.67	2.02	20	S
Molybdenum	15.672	0.50	10.00	6.952	87.2	75	125	15.73	0.399	20	
Selenium	10.205	0.50	10.00	2.549	76.6	75	125	10.45	2.40	20	
Vanadium	11.875	1.0	10.00	3.786	80.9	75	125	11.89	0.137	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: N048260
Project: PG&E Topock - IM3, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N048258-001C-PS** SampType: **PS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: RunNo: **158813**
Client ID: **ZZZZZZ** Batch ID: **90567** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/10/2021** SeqNo: **4459825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.063	0.10	10.00	0	80.6	80	120				
Barium	134.728	1.0	10.00	124.8	98.9	80	120				
Manganese	78.078	0.50	100.0	0	78.1	80	120				S
Molybdenum	16.893	0.50	10.00	6.952	99.4	80	120				
Selenium	10.788	0.50	10.00	2.549	82.4	80	120				
Vanadium	12.662	1.0	10.00	3.786	88.8	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

N048260

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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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 ✓; Specify: RWQCB
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	Address:	Global ID: Specify State:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Riggie Tap	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	
Title: Field Tech			
Signature: Date: 12/7/21	Sampled By: Riggie Tap		
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 - IM3	Signature: Date: 12/7/21		
Project Number: 30110373.4Q21GW			

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

Sample Receipt Condition (Y N)
1. Chilled ✓
2. Headspace
3. Container Intact ✓
4. Seal Present ✓
5. IR number 3
6. Method of Cooling: Ice
Sample Temp: 2.3°C / 2.1°C
Courier: ASSET
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	125 mL poly: Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4	500mL poly: Dissolved metals (SW6020) FF; HNO3 Arsenic, Boron, Barium, Calcium, Potassium, Magnesium, Manganese, Sodium, Vanadium	500mL poly: Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium,	500mL poly: Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium	1 liter poly: Total Dissolved Solids (SM2540C); 4°C	1 liter poly: Chloride, Fluoride, Sulfate (EPA300.0); 4°C	1 liter poly: Alkalinity, Total as CaCO3 (SM2320B); 4°C	TRUE	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048260-01	CW-02D-Q421	12/6/2021	14:25		X	X	X	X	X	X	X	X		E	4	P	BNS	
2	-02	MW-926-Q421	12/6/2021	14:35		X	X	X	X	X	X	X	X		S	~~4~~	P	BNS	4 MS
3	-03	CW-02M-Q421	12/6/2021	13:06		X	X	X	X	X	X	X	X		E	4	P	BNS	
4	-04	CW-03D-Q421	12/6/2021	11:32		X	X	X	X	X	X	X	X		E	4	P	BNS	
5	-05	CW-03M-Q421	12/6/2021	12:11		X	X	X	X	X	X	X	X		E	4	P	BNS	
6	-06	EB-729-Q421	12/6/2021	14:45		X									E	1	P	BNS	
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15														###	###	###	###	###	###

Relinquished by (Signature and Printed Name): Riggie Tap Date/Time: 12/7/21 1615
Received by (Signature and Printed Name): Date/Time:
Relinquished by (Signature and Printed Name): Date/Time:
Received by (Signature and Printed Name): ROMEO ALCANTARA Date/Time: 12/7/21 1901
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
- [x] E = Routine 5-7 Workdays

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days and reports will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days; surcharges will apply for rush analyses
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 analyses, 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: B (NH4)2SO4/NH4OH

Container Type: T=Tube; V=VOA; P=Pint; J=Jar; B=Tedlar; G=Glass; M=Metal; M=Metal; 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:	12/7/2021	Workorder:	N048260
Rep sample Temp (Deg C):	2.3/2.1	IR Gun ID:	3
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 By: GGJ GGarcia 12/8/2021

Reviewed By: MBC 12/13/2021

ASSET Laboratories

WORK ORDER Summary

13-Dec-21

WorkOrder: N048260

Client ID: ARCUS02

Project: PG&E Topock - IM3, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/7/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048260-001A	CW-02D-Q421	12/6/2021 2:25:00 PM	12/21/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048260-001B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048260-001C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048260-001D			12/21/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048260-002A	MW-926-Q421	12/6/2021 2:35:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048260-002B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048260-002C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048260-002D			12/21/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Dec-21

WorkOrder: N048260

Client ID: ARCUS02

Project: PG&E Topock - IM3, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/7/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048260-002D	MW-926-Q421	12/6/2021 2:35:00 PM	12/21/2021	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048260-003A	CW-02M-Q421	12/6/2021 1:06:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048260-003B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048260-003C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048260-003D			12/21/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048260-004A	CW-03D-Q421	12/6/2021 11:32:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048260-004B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048260-004C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Dec-21

WorkOrder: N048260

Client ID: ARCUS02

Project: PG&E Topock - IM3, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/7/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048260-004C	CW-03D-Q421	12/6/2021 11:32:00 AM	12/21/2021	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048260-004D			12/21/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048260-005A	CW-03M-Q421	12/6/2021 12:11:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048260-005B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048260-005C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048260-005D			12/21/2021		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2021			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2021		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2021		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Dec-21

WorkOrder: N048260

Client ID: ARCUS02

Project: PG&E Topock - IM3, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/7/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048260-005D	CW-03M-Q421	12/6/2021 12:11:00 PM	12/21/2021	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N048260-006A	EB-729-Q421	12/6/2021 2:45:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048260-007A	FOLDER	12/21/2021	12/21/2021		Folder	Folder	☐	☐	☐	LAB
			12/21/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/21/2021			QA Review	☐	☐	☐	LAB
			12/21/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Riggie Tep

08-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NO3F		
N048260-001B / CW-02D-Q421	Groundwater	12/6/2021 2:25:00 PM	8OZP	1		
N048260-002B / MW-926-Q421	Groundwater	12/6/2021 2:35:00 PM	8OZP	1		
N048260-003B / CW-02M-Q421	Groundwater	12/6/2021 1:06:00 PM	8OZP	1		
N048260-004B / CW-03D-Q421	Groundwater	12/6/2021 11:32:00 AM	8OZP	1		
N048260-005B / CW-03M-Q421	Groundwater	12/6/2021 12:11:00 PM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48260A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555475881

		Date/Time		Date/Time
Relinquished by:	YRJ	12/8/2021 1630	**Received by:**	
Relinquished by:			**Received by:**	

December 25, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048275

RE: PG&E Topock - PCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 07, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Iron in QC samples N048275-001C-MS and N048275-001C-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048275
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048275-001A	MW-39-040-Q421	Groundwater	12/7/2021 11:21:00 AM	12/7/2021	12/25/2021
N048275-001B	MW-39-040-Q421	Groundwater	12/7/2021 11:21:00 AM	12/7/2021	12/25/2021
N048275-001C	MW-39-040-Q421	Groundwater	12/7/2021 11:21:00 AM	12/7/2021	12/25/2021
N048275-001D	MW-39-040-Q421	Groundwater	12/7/2021 11:21:00 AM	12/7/2021	12/25/2021
N048275-002A	MW-39-050-Q421	Groundwater	12/7/2021 10:01:00 AM	12/7/2021	12/25/2021
N048275-002B	MW-39-050-Q421	Groundwater	12/7/2021 10:01:00 AM	12/7/2021	12/25/2021
N048275-002C	MW-39-050-Q421	Groundwater	12/7/2021 10:01:00 AM	12/7/2021	12/25/2021
N048275-002D	MW-39-050-Q421	Groundwater	12/7/2021 10:01:00 AM	12/7/2021	12/25/2021
N048275-003A	MW-39-060-Q421	Groundwater	12/7/2021 9:21:00 AM	12/7/2021	12/25/2021
N048275-003B	MW-39-060-Q421	Groundwater	12/7/2021 9:21:00 AM	12/7/2021	12/25/2021
N048275-003C	MW-39-060-Q421	Groundwater	12/7/2021 9:21:00 AM	12/7/2021	12/25/2021
N048275-003D	MW-39-060-Q421	Groundwater	12/7/2021 9:21:00 AM	12/7/2021	12/25/2021
N048275-004A	MW-39-070-Q421	Groundwater	12/7/2021 12:05:00 PM	12/7/2021	12/25/2021
N048275-004B	MW-39-070-Q421	Groundwater	12/7/2021 12:05:00 PM	12/7/2021	12/25/2021
N048275-004C	MW-39-070-Q421	Groundwater	12/7/2021 12:05:00 PM	12/7/2021	12/25/2021
N048275-004D	MW-39-070-Q421	Groundwater	12/7/2021 12:05:00 PM	12/7/2021	12/25/2021
N048275-005A	MW-39-080-Q421	Groundwater	12/7/2021 10:34:00 AM	12/7/2021	12/25/2021
N048275-005B	MW-39-080-Q421	Groundwater	12/7/2021 10:34:00 AM	12/7/2021	12/25/2021
N048275-005C	MW-39-080-Q421	Groundwater	12/7/2021 10:34:00 AM	12/7/2021	12/25/2021
N048275-005D	MW-39-080-Q421	Groundwater	12/7/2021 10:34:00 AM	12/7/2021	12/25/2021
N048275-006A	MW-932-Q421	Groundwater	12/7/2021 10:44:00 AM	12/7/2021	12/25/2021
N048275-006B	MW-932-Q421	Groundwater	12/7/2021 10:44:00 AM	12/7/2021	12/25/2021
N048275-006C	MW-932-Q421	Groundwater	12/7/2021 10:44:00 AM	12/7/2021	12/25/2021
N048275-006D	MW-932-Q421	Groundwater	12/7/2021 10:44:00 AM	12/7/2021	12/25/2021
N048275-007A	MW-39-100-Q421	Groundwater	12/7/2021 8:44:00 AM	12/7/2021	12/25/2021
N048275-007B	MW-39-100-Q421	Groundwater	12/7/2021 8:44:00 AM	12/7/2021	12/25/2021
N048275-007C	MW-39-100-Q421	Groundwater	12/7/2021 8:44:00 AM	12/7/2021	12/25/2021
N048275-007D	MW-39-100-Q421	Groundwater	12/7/2021 8:44:00 AM	12/7/2021	12/25/2021
N048275-008A	EB-730-Q421	Groundwater	12/7/2021 3:30:00 PM	12/7/2021	12/25/2021

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-001

Client Sample ID: MW-39-040-Q421
Collection Date: 12/7/2021 11:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211208A** QC Batch: **R158761**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/8/2021 02:23 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211212C** QC Batch: **90612**				PrepDate: **12/9/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/12/2021 09:20 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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-39-050-Q421
Lab Order:	N048275	**Collection Date:**	12/7/2021 10:01:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048275-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A**	QC Batch: **R158761**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/8/2021 03:20 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211212C**	QC Batch: **90612**			PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/12/2021 10:31 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
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-003

Client Sample ID: MW-39-060-Q421
Collection Date: 12/7/2021 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A** QC Batch: **R158761**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/8/2021 03:39 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211212C** QC Batch: **90612**				PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/12/2021 10:43 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
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-004

Client Sample ID: MW-39-070-Q421
Collection Date: 12/7/2021 12:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A** QC Batch: **R158761**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/8/2021 03:58 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211212C** QC Batch: **90612**				PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/12/2021 10:54 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:**	MW-39-080-Q421
Lab Order:	N048275	**Collection Date:**	12/7/2021 10:34:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048275-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A**	QC Batch: **R158761**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/8/2021 04:17 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211212C**	QC Batch: **90612**			PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/12/2021 11:06 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:**	MW-932-Q421
Lab Order:	N048275	**Collection Date:**	12/7/2021 10:44:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048275-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A**	QC Batch: **R158761**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/8/2021 04:36 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211212C**	QC Batch: **90612**			PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/12/2021 11:36 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
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-007

Client Sample ID: MW-39-100-Q421
Collection Date: 12/7/2021 8:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A** QC Batch: **R158790**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	39	0.13	1.0		µg/L	5	12/9/2021 05:30 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211212C** QC Batch: **90612**				PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	39	0.035	1.0		µg/L	1	12/12/2021 11:48 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
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-008

Client Sample ID: EB-730-Q421
Collection Date: 12/7/2021 3:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208A**	QC Batch: **R158761**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/8/2021 05:56 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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R158761** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **PBW** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457406**

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-R158761** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **LCSW** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.874	0.20	5.000	0	97.5	90	110				

Sample ID: **N048258-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.959	0.20	1.000	0.9840	97.5	90	110				

Sample ID: **N048258-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.479	0.20	1.000	0.5167	96.2	90	110				

Sample ID: **N048258-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	143.300	4.0	100.0	45.35	98.0	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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048258-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	67.619	1.0	25.00	43.05	98.3	90	110				

Sample ID: **N048258-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457419**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	66.522	1.0	25.00	42.42	96.4	90	110				

Sample ID: **N048258-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.955	0.20	1.000	0	95.5	90	110				

Sample ID: **N048260-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.281	0.20	5.000	2.223	101	90	110				

Sample ID: **N048260-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.986	0.20	1.000	0	98.6	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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048275-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID: **N048275-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110	1.059	0.405	20	

Sample ID: **N048258-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.045	0.20						0.9840	5.99	20	

Sample ID: **N048275-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.022	0.20	1.000	0	102	90	110				

Sample ID: **N048275-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.952	0.20	1.000	0	95.2	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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048275-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.998	0.20	1.000	0	99.8	90	110				

Sample ID: **N048275-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457441**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.171	0.20	1.000	0.1918	97.9	90	110				

Sample ID: **N048275-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457443**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.177	0.20	1.000	0.1967	98.0	90	110				

Sample ID: **N048275-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.004	0.20	1.000	0	100	90	110				

Sample ID: **N048260-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.398	0.20	1.000	0.4479	95.0	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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048260-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.459	0.20	1.000	0.4469	101	90	110				

Sample ID: **N048260-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.138	0.20	1.000	1.096	104	90	110				

Sample ID: **N048260-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158761**
Client ID: **ZZZZZZ** Batch ID: **R158761** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.197	0.20	1.000	1.171	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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R158790**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **PBW**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458256**

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-R158790**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **LCSW**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.918	0.20	5.000	0	98.4	90	110				

Sample ID: **N048294-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.940	0.20	1.000	0.9548	98.5	90	110				

Sample ID: **N048294-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.897	0.20	5.000	8.629	105	90	110				

Sample ID: **N048294-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.962	0.20	1.000	0	96.2	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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048294-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	74.383	1.0	25.00	49.85	98.1	90	110				

Sample ID: **N048294-003AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	73.568	1.0	25.00	49.85	94.9	90	110	74.38	1.10	20	

Sample ID: **N048294-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	542.005	10	250.0	295.9	98.5	90	110				

Sample ID: **N048294-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.958	0.20						0.9548	0.335	20	

Sample ID: **N048294-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	898.060	20	500.0	412.8	97.1	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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048294-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.005	0.20	1.000	0	100	90	110				

Sample ID: **N048294-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2202.400	40	1000	1228	97.4	90	110				

Sample ID: **N048294-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.975	0.20	1.000	0	97.5	90	110				

Sample ID: **N048294-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	229.396	4.0	100.0	130.8	98.6	90	110				

Sample ID: **N048294-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458287**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	265.724	4.0	100.0	169.1	96.6	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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048294-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	264.224	4.0	100.0	166.8	97.4	90	110				

Sample ID: **N048294-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.877	1.0	5.000	0	97.5	90	110				

Sample ID: **N048275-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.487	1.0	25.00	39.12	101	90	110				

Sample ID: **N048294-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	132.693	2.0	50.00	82.78	99.8	90	110				

Sample ID: **N048294-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	133.673	2.0	50.00	82.77	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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048294-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	117.929	2.0	50.00	68.97	97.9	90	110				

Sample ID: **N048294-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158790**
Client ID: **ZZZZZZ** Batch ID: **R158790** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	116.229	2.0	50.00	66.71	99.0	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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **MB-90612**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158883**
Client ID: **PBW**	Batch ID: **90612**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/12/2021**	SeqNo: **4464018**

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

Sample ID: **LCS-90612**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158883**
Client ID: **LCSW**	Batch ID: **90612**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/12/2021**	SeqNo: **4464019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.978	1.0	10.00	0	99.8	85	115				

Sample ID: **N048275-001CMS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158883**
Client ID: **ZZZZZZ**	Batch ID: **90612**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/12/2021**	SeqNo: **4464025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.192	1.0	10.00	0.1091	90.8	75	125				

Sample ID: **N048275-001CMSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158883**
Client ID: **ZZZZZZ**	Batch ID: **90612**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/12/2021**	SeqNo: **4464029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.324	1.0	10.00	0.1091	92.1	75	125	9.192	1.43	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:**	MW-39-040-Q421
Lab Order:	N048275	**Collection Date:**	12/7/2021 11:21:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048275-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	2.2	0.084	1.0		mg/L	1	12/11/2021 01:12 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:**	MW-39-050-Q421
Lab Order:	N048275	**Collection Date:**	12/7/2021 10:01:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048275-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	1.0	0.084	1.0		mg/L	1	12/11/2021 01:59 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:**	MW-39-060-Q421
Lab Order:	N048275	**Collection Date:**	12/7/2021 9:21:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048275-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/11/2021 02:15 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:**	MW-39-070-Q421
Lab Order:	N048275	**Collection Date:**	12/7/2021 12:05:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048275-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/11/2021 02:30 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	**Client Sample ID:**	MW-39-080-Q421
Lab Order:	N048275	**Collection Date:**	12/7/2021 10:34:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048275-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/11/2021 02:46 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:**	MW-932-Q421
Lab Order:	N048275	**Collection Date:**	12/7/2021 10:44:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048275-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/11/2021 03:01 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
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-007

Client Sample ID: MW-39-100-Q421
Collection Date: 12/7/2021 8:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/11/2021 03:48 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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID: **MB-R158819**	SampType: **MBLK**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158819**
Client ID: **PBW**	Batch ID: **R158819**	TestNo: **SM 5310C**		Analysis Date: **12/11/2021**	SeqNo: **4460656**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID: **LCS-R158819**	SampType: **LCS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158819**
Client ID: **LCSW**	Batch ID: **R158819**	TestNo: **SM 5310C**		Analysis Date: **12/11/2021**	SeqNo: **4460657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.575	1.0	5.000	0	91.5	85	115				

Sample ID: **N048275-001D-MS**	SampType: **MS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158819**
Client ID: **ZZZZZZ**	Batch ID: **R158819**	TestNo: **SM 5310C**		Analysis Date: **12/11/2021**	SeqNo: **4460659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	7.351	1.0	5.000	2.234	102	75	125				

Sample ID: **N048275-001D-MSD**	SampType: **MSD**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158819**
Client ID: **ZZZZZZ**	Batch ID: **R158819**	TestNo: **SM 5310C**		Analysis Date: **12/11/2021**	SeqNo: **4460660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	7.305	1.0	5.000	2.234	101	75	125	7.351	0.626	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:**	MW-39-040-Q421
Lab Order:	N048275	**Collection Date:**	12/7/2021 11:21:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048275-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**				PrepDate:	**12/10/2021**	Analyst: **DJ**
Iron	320	13	20		µg/L	1	12/19/2021 04:36 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:**	MW-39-050-Q421
Lab Order:	N048275	**Collection Date:**	12/7/2021 10:01:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048275-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**			PrepDate:	**12/10/2021**		Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/19/2021 05:04 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
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-003

Client Sample ID: MW-39-060-Q421
Collection Date: 12/7/2021 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**			PrepDate:	**12/10/2021**		Analyst: **DJ**
Iron	110	13	20		µg/L	1	12/19/2021 05:07 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
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-004

Client Sample ID: MW-39-070-Q421
Collection Date: 12/7/2021 12:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**				PrepDate:	**12/10/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/19/2021 05:11 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:**	MW-39-080-Q421
Lab Order:	N048275	**Collection Date:**	12/7/2021 10:34:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048275-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**			PrepDate:	**12/10/2021**		Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/19/2021 05:14 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
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-006

Client Sample ID: MW-932-Q421
Collection Date: 12/7/2021 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**			PrepDate:	**12/10/2021**		Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/19/2021 05:19 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
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-007

Client Sample ID: MW-39-100-Q421
Collection Date: 12/7/2021 8:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**			PrepDate:	**12/10/2021**		Analyst: **DJ**
Iron	29	13	20		µg/L	1	12/19/2021 05:23 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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-90634**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **12/10/2021**	RunNo: **159013**
Client ID: **PBW**	Batch ID: **90634**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2021**	SeqNo: **4471016**

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

Sample ID: **LCS-90634**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **12/10/2021**	RunNo: **159013**
Client ID: **LCSW**	Batch ID: **90634**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2021**	SeqNo: **4471017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	91.264	20	100.0	0	91.3	85	115				

Sample ID: **N048275-001C-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **159013**
Client ID: **ZZZZZZ**	Batch ID: **90634**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2021**	SeqNo: **4471023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	466.681	20	100.0	324.2	143	75	125				S

Sample ID: **N048275-001C-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **159013**
Client ID: **ZZZZZZ**	Batch ID: **90634**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2021**	SeqNo: **4471024**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	465.611	20	100.0	324.2	141	75	125	466.7	0.230	20	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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N048275-001C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **µg/L** Prep Date: RunNo: **159013**
Client ID: **ZZZZZZ** Batch ID: **90634** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2021** SeqNo: **4471022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	457.670	20	100.0	324.2	134	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		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-001

Client Sample ID: MW-39-040-Q421
Collection Date: 12/7/2021 11:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211212C**	QC Batch: **90612**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	16	0.050	0.10		µg/L	1	12/12/2021 09:20 PM
Barium	74	0.083	1.0		µg/L	1	12/12/2021 09:20 PM
Manganese	120	0.13	2.5		µg/L	5	12/12/2021 09:26 PM
Molybdenum	7.7	0.12	0.50		µg/L	1	12/12/2021 09:20 PM
Selenium	ND	0.044	0.50		µg/L	1	12/12/2021 09:20 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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-002

Client Sample ID: MW-39-050-Q421
Collection Date: 12/7/2021 10:01:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211212C**	QC Batch: **90612**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	16	0.050	0.10		µg/L	1	12/12/2021 10:31 PM
Barium	73	0.083	1.0		µg/L	1	12/12/2021 10:31 PM
Manganese	120	0.026	0.50		µg/L	1	12/12/2021 10:31 PM
Molybdenum	7.6	0.12	0.50		µg/L	1	12/12/2021 10:31 PM
Selenium	ND	0.044	0.50		µg/L	1	12/12/2021 10:31 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
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-003

Client Sample ID: MW-39-060-Q421
Collection Date: 12/7/2021 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211212C**	QC Batch: **90612**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	16	0.050	0.10		µg/L	1	12/12/2021 10:43 PM
Barium	74	0.083	1.0		µg/L	1	12/12/2021 10:43 PM
Manganese	120	0.026	0.50		µg/L	1	12/12/2021 10:43 PM
Molybdenum	7.7	0.12	0.50		µg/L	1	12/12/2021 10:43 PM
Selenium	ND	0.044	0.50		µg/L	1	12/12/2021 10:43 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
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-004

Client Sample ID: MW-39-070-Q421
Collection Date: 12/7/2021 12:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211212C**	QC Batch: **90612**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	16	0.050	0.10		µg/L	1	12/12/2021 10:54 PM
Barium	74	0.083	1.0		µg/L	1	12/12/2021 10:54 PM
Manganese	120	0.026	0.50		µg/L	1	12/12/2021 10:54 PM
Molybdenum	7.7	0.12	0.50		µg/L	1	12/12/2021 10:54 PM
Selenium	ND	0.044	0.50		µg/L	1	12/12/2021 10:54 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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-005

Client Sample ID: MW-39-080-Q421
Collection Date: 12/7/2021 10:34:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211212C**	QC Batch: **90612**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	16	0.050	0.10		µg/L	1	12/12/2021 11:06 PM
Barium	74	0.083	1.0		µg/L	1	12/12/2021 11:06 PM
Manganese	120	0.026	0.50		µg/L	1	12/12/2021 11:06 PM
Molybdenum	7.7	0.12	0.50		µg/L	1	12/12/2021 11:06 PM
Selenium	ND	0.044	0.50		µg/L	1	12/12/2021 11:06 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
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-006

Client Sample ID: MW-932-Q421
Collection Date: 12/7/2021 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211212C**	QC Batch: **90612**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	1.5	0.050	0.10		µg/L	1	12/12/2021 11:36 PM
Barium	22	0.083	1.0		µg/L	1	12/12/2021 11:36 PM
Manganese	3.9	0.026	0.50		µg/L	1	12/12/2021 11:36 PM
Molybdenum	22	0.12	0.50		µg/L	1	12/12/2021 11:36 PM
Selenium	ND	0.044	0.50		µg/L	1	12/12/2021 11:36 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
Lab Order: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048275-007

Client Sample ID: MW-39-100-Q421
Collection Date: 12/7/2021 8:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211212C**	QC Batch: **90612**				PrepDate:	**12/9/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/12/2021 11:48 PM
Barium	27	0.083	1.0		µg/L	1	12/12/2021 11:48 PM
Manganese	5.8	0.026	0.50		µg/L	1	12/12/2021 11:48 PM
Molybdenum	7.4	0.12	0.50		µg/L	1	12/12/2021 11:48 PM
Selenium	ND	0.044	0.50		µg/L	1	12/12/2021 11:48 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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **MB-90612** SampType: **MBLK** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/9/2021** RunNo: **158883**
Client ID: **PBW** Batch ID: **90612** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/12/2021** SeqNo: **4464089**

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									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-90612** SampType: **LCS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/9/2021** RunNo: **158883**
Client ID: **LCSW** Batch ID: **90612** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/12/2021** SeqNo: **4464090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.228	0.10	10.00	0	102	85	115				
Barium	10.027	1.0	10.00	0	100	85	115				
Manganese	98.951	0.50	100.0	0	99.0	85	115				
Molybdenum	10.245	0.50	10.00	0	102	85	115				
Selenium	10.010	0.50	10.00	0	100	85	115				

Sample ID: **N048275-001CMS** SampType: **MS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/9/2021** RunNo: **158883**
Client ID: **ZZZZZZ** Batch ID: **90612** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/12/2021** SeqNo: **4464096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	25.148	0.10	10.00	16.22	89.3	75	125				
Barium	81.586	1.0	10.00	73.52	80.7	75	125				
Molybdenum	18.383	0.50	10.00	7.654	107	75	125				
Selenium	8.885	0.50	10.00	0.08437	88.0	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: N048275
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N048275-001CMS** SampType: **MS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/9/2021** RunNo: **158883**
Client ID: **ZZZZZZ** Batch ID: **90612** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/12/2021** SeqNo: **4464097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	218.132	2.5	100.0	119.7	98.5	75	125				

Sample ID: **N048275-001CMSD** SampType: **MSD** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/9/2021** RunNo: **158883**
Client ID: **ZZZZZZ** Batch ID: **90612** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/12/2021** SeqNo: **4464100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	25.143	0.10	10.00	16.22	89.3	75	125	25.15	0.0220	20	
Barium	81.143	1.0	10.00	73.52	76.3	75	125	81.59	0.544	20	
Molybdenum	18.380	0.50	10.00	7.654	107	75	125	18.38	0.0145	20	
Selenium	8.706	0.50	10.00	0.08437	86.2	75	125	8.885	2.04	20	

Sample ID: **N048275-001CMSD** SampType: **MSD** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/9/2021** RunNo: **158883**
Client ID: **ZZZZZZ** Batch ID: **90612** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/12/2021** SeqNo: **4464101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	218.378	2.5	100.0	119.7	98.7	75	125	218.1	0.113	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

N048275

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@arcadis.com	Address:	Sample Receipt Condition (Y N): 1. Chilled ✓; 2. Headspace; 3. Container Intact ✓; 4. Seal Present ✓; 5. IR number 3; 6. Method of Cooling: ICE
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Sample Temp: 2.7°C
Submitted By: Luke Baumgarte	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Global ID:
Title: Field Tech			
Signature: Date: 12/7/21	Sampled By: Luke Baumgarte		
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 - PCM	Signature: Date: 12/7/21		
Project Number: 30110373.4Q21GW			

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500NO3) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Barium, Iron, Manganese (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium (500mL poly)	Total Organic Carbon (SM5310C); H2SO4 (3x40 mL VOA)	TRUE	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048275-01	MW-39-040-Q421	12/7/2021	11:21		X	X	X	X	X	X		E	9	P	BNS	MS/MSD
2	-02	MW-39-050-Q421	12/7/2021	10:01		X	X	X	X	X	X		E	6	P	BNS	
3	-03	MW-39-060-Q421	12/7/2021	9:21		X	X	X	X	X	X		E	6	P	BNS	
4	-04	MW-39-070-Q421	12/7/2021	12:05		X	X	X	X	X	X		E	6	P	BNS	
5	-05	MW-39-080-Q421	12/7/2021	10:34		X	X	X	X	X	X		E	6	P	BNS	
	-06	MW-932-Q421	12/7/2021	10:44		X	X	X	X	X	X		E	6	P	BNS	
7	-07	MW-39-100-Q421	12/7/2021	8:44		X	X	X	X	X	X		E	6	P	BNS	
8	-08	EB-730-Q421	12/7/2021	15:30		X							E	1	P	BNS	
9																	
10																	
11																	
12																	
13																	
14																	

Courier: ASSET
Tracking No.:

Relinquished by (Signature and Printed Name): Luke Baumgarte	Date/Time: 12/7/21 1616	Relinquished by (Signature and Printed Name):	Date/Time: 12/7/21 1616
Relinquished by (Signature and Printed Name):	Date/Time: 12/7/21 1901	Relinquished by (Signature and Printed Name):	Date/Time: 12/7/21 1901
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished 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
- [X] E = Routine 5-7 Workdays

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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:	B	(NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	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:	12/7/2021	Workorder:	N048275
Rep sample Temp (Deg C):	2.7	IR Gun ID:	3
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 By: GGJ GGarcia 12/8/2021

Reviewed By: MBC 12/9/2021

ASSET Laboratories

WORK ORDER Summary

08-Dec-21

WorkOrder: N048275

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/7/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048275-001A	MW-39-040-Q421	12/7/2021 11:21:00 AM	12/21/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☑	☐	WW
N048275-001B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☑	☑	SUB
N048275-001C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/21/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☑	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
N048275-001D			12/21/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☑	☐	VW
N048275-002A	MW-39-050-Q421	12/7/2021 10:01:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048275-002B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048275-002C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048275-002D			12/21/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048275-003A	MW-39-060-Q421	12/7/2021 9:21:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048275-003B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048275-003C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-21

WorkOrder: N048275

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/7/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048275-003C	MW-39-060-Q421	12/7/2021 9:21:00 AM	12/21/2021	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048275-003D			12/21/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048275-004A	MW-39-070-Q421	12/7/2021 12:05:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048275-004B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048275-004C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048275-004D			12/21/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048275-005A	MW-39-080-Q421	12/7/2021 10:34:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048275-005B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048275-005C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048275-005D			12/21/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048275-006A	MW-932-Q421	12/7/2021 10:44:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048275-006B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB

ASSET Laboratories

WORK ORDER Summary

08-Dec-21

WorkOrder: N048275

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/7/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048275-006C	MW-932-Q421	12/7/2021 10:44:00 AM	12/21/2021	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048275-006D			12/21/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048275-007A	MW-39-100-Q421	12/7/2021 8:44:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048275-007B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048275-007C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048275-007D			12/21/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048275-008A	EB-730-Q421	12/7/2021 3:30:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048275-009A	FOLDER	12/21/2021	12/21/2021		Folder	Folder	☐	☐	☐	LAB
			12/21/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/21/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Luke Baumgarte

08-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NO3F		
N048275-001B / MW-39-040-Q421	Groundwater	12/7/2021 11:21:00 AM	8OZP	1	MS/MSD	
N048275-002B / MW-39-050-Q421	Groundwater	12/7/2021 10:01:00 AM	8OZP	1		
N048275-003B / MW-39-060-Q421	Groundwater	12/7/2021 9:21:00 AM	8OZP	1		
N048275-004B / MW-39-070-Q421	Groundwater	12/7/2021 12:05:00 PM	8OZP	1		
N048275-005B / MW-39-080-Q421	Groundwater	12/7/2021 10:34:00 AM	8OZP	1		
N048275-006B / MW-932-Q421	Groundwater	12/7/2021 10:44:00 AM	8OZP	1		
N048275-007B / MW-39-100-Q421	Groundwater	12/7/2021 8:44:00 AM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48275A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT

Please analyse for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555475881

		Date/Time			Date/Time
Relinquished by:	GGarcia	12/8/2021 16:30	**Received by:**		
Relinquished by:			**Received by:**		

December 30, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048276

RE: PG&E Topock - RCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 07, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Sample N048276-006 required initial dilution due to matrix. Sample has dark pink color.

Because the results for total dissolved chromium (7.4 ug/L) and hexavalent chromium (6.0 ug/L) for sample N048276-013 (MW-37D-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (2.8 ug/L) and hexavalent chromium (0 ug/L) for sample N048276-015 (MW-41D-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (9.0 ug/L) and hexavalent chromium (6.9 ug/L) for sample N048276-016 (MW-41M-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (6.3 ug/L) and hexavalent chromium (3.6 ug/L) for sample N048276-017 (MW-41S-Q421) are discrepant, sample re-analysis and Matrix Spike protocol

were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (5.1 ug/L) and hexavalent chromium (3.7 ug/L) for sample N048276-018 (MW-921-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (7.4 ug/L) and hexavalent chromium (6.0 ug/L) for sample N048276-013 (MW-37D-Q421) 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 7.3 and 6.7 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (2.8 ug/L) and hexavalent chromium (0 ug/L) for sample N048276-015 (MW-41D-Q421) 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 2.3 and 0.94 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (9.0 ug/L) and hexavalent chromium (6.9 ug/L) for sample N048276-016 (MW-41M-Q421) 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 9.2 and 8.8 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (6.3 ug/L) and hexavalent chromium (3.6 ug/L) for sample N048276-017 (MW-41S-Q421) 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 7.1 and 4.3 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (5.1 ug/L) and hexavalent chromium (3.7 ug/L) for sample N048276-018 (MW-921-Q421) 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 5.5 and 4.0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N048276-008CMS and N048276-008CMSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) passed acceptance criteria. The associated

Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Arsenic in QC samples N048276-008CMS and N048276-008CMSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048276
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048276-001A	MW-68-180-Q421	Groundwater	12/7/2021 8:25:00 AM	12/7/2021	12/30/2021
N048276-001B	MW-68-180-Q421	Groundwater	12/7/2021 8:25:00 AM	12/7/2021	12/30/2021
N048276-001C	MW-68-180-Q421	Groundwater	12/7/2021 8:25:00 AM	12/7/2021	12/30/2021
N048276-002A	MW-68-240-Q421	Groundwater	12/7/2021 9:26:00 AM	12/7/2021	12/30/2021
N048276-002B	MW-68-240-Q421	Groundwater	12/7/2021 9:26:00 AM	12/7/2021	12/30/2021
N048276-002C	MW-68-240-Q421	Groundwater	12/7/2021 9:26:00 AM	12/7/2021	12/30/2021
N048276-003A	MW-925-Q421	Groundwater	12/7/2021 9:36:00 AM	12/7/2021	12/30/2021
N048276-003B	MW-925-Q421	Groundwater	12/7/2021 9:36:00 AM	12/7/2021	12/30/2021
N048276-003C	MW-925-Q421	Groundwater	12/7/2021 9:36:00 AM	12/7/2021	12/30/2021
N048276-004A	MW-66-165-Q421	Groundwater	12/7/2021 2:13:00 PM	12/7/2021	12/30/2021
N048276-004B	MW-66-165-Q421	Groundwater	12/7/2021 2:13:00 PM	12/7/2021	12/30/2021
N048276-004C	MW-66-165-Q421	Groundwater	12/7/2021 2:13:00 PM	12/7/2021	12/30/2021
N048276-005A	MW-66-230-Q421	Groundwater	12/7/2021 2:57:00 PM	12/7/2021	12/30/2021
N048276-005B	MW-66-230-Q421	Groundwater	12/7/2021 2:57:00 PM	12/7/2021	12/30/2021
N048276-005C	MW-66-230-Q421	Groundwater	12/7/2021 2:57:00 PM	12/7/2021	12/30/2021
N048276-006A	MW-67-185-Q421	Groundwater	12/7/2021 10:32:00 AM	12/7/2021	12/30/2021
N048276-006B	MW-67-185-Q421	Groundwater	12/7/2021 10:32:00 AM	12/7/2021	12/30/2021
N048276-006C	MW-67-185-Q421	Groundwater	12/7/2021 10:32:00 AM	12/7/2021	12/30/2021
N048276-007A	MW-67-225-Q421	Groundwater	12/7/2021 11:28:00 AM	12/7/2021	12/30/2021
N048276-007B	MW-67-225-Q421	Groundwater	12/7/2021 11:28:00 AM	12/7/2021	12/30/2021
N048276-007C	MW-67-225-Q421	Groundwater	12/7/2021 11:28:00 AM	12/7/2021	12/30/2021
N048276-008A	MW-67-260-Q421	Groundwater	12/7/2021 1:24:00 PM	12/7/2021	12/30/2021
N048276-008B	MW-67-260-Q421	Groundwater	12/7/2021 1:24:00 PM	12/7/2021	12/30/2021
N048276-008C	MW-67-260-Q421	Groundwater	12/7/2021 1:24:00 PM	12/7/2021	12/30/2021
N048276-009A	MW-13-Q421	Groundwater	12/7/2021 2:41:00 PM	12/7/2021	12/30/2021
N048276-009B	MW-13-Q421	Groundwater	12/7/2021 2:41:00 PM	12/7/2021	12/30/2021
N048276-009C	MW-13-Q421	Groundwater	12/7/2021 2:41:00 PM	12/7/2021	12/30/2021
N048276-010A	MW-917-Q421	Groundwater	12/7/2021 2:51:00 PM	12/7/2021	12/30/2021
N048276-010B	MW-917-Q421	Groundwater	12/7/2021 2:51:00 PM	12/7/2021	12/30/2021

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048276
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048276-010C	MW-917-Q421	Groundwater	12/7/2021 2:51:00 PM	12/7/2021	12/30/2021
N048276-011A	MW-14-Q421	Groundwater	12/7/2021 10:16:00 AM	12/7/2021	12/30/2021
N048276-011B	MW-14-Q421	Groundwater	12/7/2021 10:16:00 AM	12/7/2021	12/30/2021
N048276-011C	MW-14-Q421	Groundwater	12/7/2021 10:16:00 AM	12/7/2021	12/30/2021
N048276-012A	MW-25-Q421	Groundwater	12/7/2021 3:28:00 PM	12/7/2021	12/30/2021
N048276-012B	MW-25-Q421	Groundwater	12/7/2021 3:28:00 PM	12/7/2021	12/30/2021
N048276-012C	MW-25-Q421	Groundwater	12/7/2021 3:28:00 PM	12/7/2021	12/30/2021
N048276-013A	MW-37D-Q421	Groundwater	12/7/2021 11:35:00 AM	12/7/2021	12/30/2021
N048276-013B	MW-37D-Q421	Groundwater	12/7/2021 11:35:00 AM	12/7/2021	12/30/2021
N048276-013C	MW-37D-Q421	Groundwater	12/7/2021 11:35:00 AM	12/7/2021	12/30/2021
N048276-014A	MW-37S-Q421	Groundwater	12/7/2021 12:11:00 PM	12/7/2021	12/30/2021
N048276-014B	MW-37S-Q421	Groundwater	12/7/2021 12:11:00 PM	12/7/2021	12/30/2021
N048276-014C	MW-37S-Q421	Groundwater	12/7/2021 12:11:00 PM	12/7/2021	12/30/2021
N048276-015A	MW-41D-Q421	Groundwater	12/7/2021 8:15:00 AM	12/7/2021	12/30/2021
N048276-015B	MW-41D-Q421	Groundwater	12/7/2021 8:15:00 AM	12/7/2021	12/30/2021
N048276-015C	MW-41D-Q421	Groundwater	12/7/2021 8:15:00 AM	12/7/2021	12/30/2021
N048276-016A	MW-41M-Q421	Groundwater	12/7/2021 8:50:00 AM	12/7/2021	12/30/2021
N048276-016B	MW-41M-Q421	Groundwater	12/7/2021 8:50:00 AM	12/7/2021	12/30/2021
N048276-016C	MW-41M-Q421	Groundwater	12/7/2021 8:50:00 AM	12/7/2021	12/30/2021
N048276-017A	MW-41S-Q421	Groundwater	12/7/2021 9:24:00 AM	12/7/2021	12/30/2021
N048276-017B	MW-41S-Q421	Groundwater	12/7/2021 9:24:00 AM	12/7/2021	12/30/2021
N048276-017C	MW-41S-Q421	Groundwater	12/7/2021 9:24:00 AM	12/7/2021	12/30/2021
N048276-018A	MW-921-Q421	Groundwater	12/7/2021 9:34:00 AM	12/7/2021	12/30/2021
N048276-018B	MW-921-Q421	Groundwater	12/7/2021 9:34:00 AM	12/7/2021	12/30/2021
N048276-018C	MW-921-Q421	Groundwater	12/7/2021 9:34:00 AM	12/7/2021	12/30/2021
N048276-019A	EB-731-Q421	Groundwater	12/7/2021 3:07:00 PM	12/7/2021	12/30/2021
N048276-020A	EB-732-Q421	Groundwater	12/7/2021 3:35:00 PM	12/7/2021	12/30/2021

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-001

Client Sample ID: MW-68-180-Q421
Collection Date: 12/7/2021 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208B**	QC Batch: **R158762**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	26000	130	1000		µg/L	5000	12/8/2021 09:52 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	28000	8.8	250		µg/L	250	12/11/2021 10:40 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:**	MW-68-240-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 9:26:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208B**	QC Batch: **R158762**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1900	5.0	40		µg/L	200	12/8/2021 09:24 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	2000	0.88	25		µg/L	25	12/11/2021 10:45 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		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-003

Client Sample ID: MW-925-Q421
Collection Date: 12/7/2021 9:36:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208B**	QC Batch: **R158762**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1900	5.0	40		µg/L	200	12/8/2021 10:11 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	1900	0.88	25		µg/L	25	12/11/2021 10:51 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:**	MW-66-165-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 2:13:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208B**	QC Batch: **R158762**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	350	1.3	10		µg/L	50	12/8/2021 10:40 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	350	0.18	5.0		µg/L	5	12/11/2021 05:23 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:**	MW-66-230-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 2:57:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208B**	QC Batch: **R158762**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	5000	13	100		µg/L	500	12/8/2021 11:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	5200	1.8	50		µg/L	50	12/11/2021 10:57 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:**	MW-67-185-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 10:32:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208B** QC Batch: **R158762**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	13	100		µg/L	500	12/8/2021 11:38 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211211A** QC Batch: **90595**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/11/2021 05:41 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:**	MW-67-225-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 11:28:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B**	QC Batch: **R158791**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	2800	13	100		µg/L	500	12/10/2021 12:36 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	3000	0.88	25		µg/L	25	12/11/2021 11:09 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:**	MW-67-260-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 1:24:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208B**	QC Batch: **R158762**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	810	2.5	20		µg/L	100	12/8/2021 08:36 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	760	0.18	5.0		µg/L	5	12/11/2021 06:41 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-009

Client Sample ID: MW-13-Q421
Collection Date: 12/7/2021 2:41:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B** QC Batch: **R158791**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	19	0.13	1.0		µg/L	5	12/10/2021 12:17 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211211A** QC Batch: **90595**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	20	0.035	1.0		µg/L	1	12/11/2021 07:29 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:**	MW-917-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 2:51:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B** QC Batch: **R158791**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	18	0.13	1.0		µg/L	5	12/9/2021 11:02 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211211A** QC Batch: **90595**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	20	0.035	1.0		µg/L	1	12/11/2021 07:58 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:**	MW-14-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 10:16:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211208B** QC Batch: **R158762**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	12	0.13	1.0		µg/L	5	12/9/2021 01:13 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211211A** QC Batch: **90595**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	12	0.035	1.0		µg/L	1	12/11/2021 08:10 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:**	MW-25-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 3:28:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208B** QC Batch: **R158762**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	70	0.25	2.0		µg/L	10	12/9/2021 01:32 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211211A** QC Batch: **90595**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	80	0.035	1.0		µg/L	1	12/11/2021 08:22 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:**	MW-37D-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 11:35:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208B** QC Batch: **R158762**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	6.0	0.13	1.0		µg/L	5	12/9/2021 02:10 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211211A** QC Batch: **90595**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	7.4	0.035	1.0		µg/L	1	12/11/2021 08:34 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:**	MW-37S-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 12:11:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B** QC Batch: **R158791**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	7.8	0.025	0.20		µg/L	1	12/9/2021 11:30 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211211A** QC Batch: **90595**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	8.0	0.035	1.0		µg/L	1	12/11/2021 09:16 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-015

Client Sample ID: MW-41D-Q421
Collection Date: 12/7/2021 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208B** QC Batch: **R158762**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/9/2021 03:25 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211211A** QC Batch: **90595**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	2.8	0.035	1.0		µg/L	1	12/11/2021 09:28 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:**	MW-41M-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 8:50:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208B** QC Batch: **R158762**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	6.9	0.13	1.0		µg/L	5	12/9/2021 04:03 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211211A** QC Batch: **90595**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	9.0	0.035	1.0		µg/L	1	12/11/2021 09:40 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:**	MW-41S-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 9:24:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211208B** QC Batch: **R158762**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	3.6	0.025	0.20		µg/L	1	12/9/2021 04:22 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211211A** QC Batch: **90595**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Chromium	6.3	0.035	1.0		µg/L	1	12/11/2021 09:52 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-018

Client Sample ID: MW-921-Q421
Collection Date: 12/7/2021 9:34:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B** QC Batch: **R158791**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	3.7	0.025	0.20		µg/L	1	12/10/2021 12:55 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211211A** QC Batch: **90595**				PrepDate: **12/8/2021**			Analyst: **CEI**
Chromium	5.1	0.035	1.0		µg/L	1	12/11/2021 10:03 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:**	EB-731-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 3:07:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211208B** QC Batch: **R158762**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/9/2021 05:19 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:**	EB-732-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 3:35:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211208B** QC Batch: **R158762**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/9/2021 05:38 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
Work Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **LCS-R158762**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158762**
Client ID: **LCSW**	Batch ID: **R158762**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.950	0.20	5.000	0	99.0	90	110				

Sample ID: **MB-R158762**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158762**
Client ID: **PBW**	Batch ID: **R158762**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457467**

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

Sample ID: **N048276-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158762**
Client ID: **ZZZZZZ**	Batch ID: **R158762**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1291.160	20	500.0	810.5	96.1	90	110				

Sample ID: **N048276-008AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158762**
Client ID: **ZZZZZZ**	Batch ID: **R158762**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1288.800	20	500.0	810.5	95.7	90	110	1291	0.183	20	

Sample ID: **N048276-002ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158762**
Client ID: **ZZZZZZ**	Batch ID: **R158762**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2021**	SeqNo: **4457474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1875.500	40						1896	1.08	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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048276-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158762**
Client ID: **ZZZZZZ** Batch ID: **R158762** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2856.400	40	1000	1896	96.1	90	110				

Sample ID: **N048276-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158762**
Client ID: **ZZZZZZ** Batch ID: **R158762** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	50331.500	1000	25000	26270	96.2	90	110				

Sample ID: **N048276-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158762**
Client ID: **ZZZZZZ** Batch ID: **R158762** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2839.340	40	1000	1883	95.7	90	110				

Sample ID: **N048276-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158762**
Client ID: **ZZZZZZ** Batch ID: **R158762** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	592.375	10	250.0	350.6	96.7	90	110				

Sample ID: **N048276-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158762**
Client ID: **ZZZZZZ** Batch ID: **R158762** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7391.400	100	2500	4986	96.2	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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048276-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158762**
Client ID: **ZZZZZZ** Batch ID: **R158762** TestNo: **EPA 218.6** Analysis Date: **12/8/2021** SeqNo: **4457487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	477.600	100	500.0	0	95.5	90	110				

Sample ID: **N048276-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158762**
Client ID: **ZZZZZZ** Batch ID: **R158762** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4457491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	34.914	1.0	25.00	11.68	93.0	90	110				

Sample ID: **N048276-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158762**
Client ID: **ZZZZZZ** Batch ID: **R158762** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4457493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	116.511	2.0	50.00	69.77	93.5	90	110				

Sample ID: **N048276-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158762**
Client ID: **ZZZZZZ** Batch ID: **R158762** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4457495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.087	1.0	5.000	6.002	102	90	110				

Sample ID: **N048276-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158762**
Client ID: **ZZZZZZ** Batch ID: **R158762** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4457499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.110	1.0	5.000	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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048276-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158762**
Client ID: **ZZZZZZ** Batch ID: **R158762** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4457501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.648	1.0	5.000	6.905	94.9	90	110				

Sample ID: **N048276-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158762**
Client ID: **ZZZZZZ** Batch ID: **R158762** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4457503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.819	0.20	5.000	3.617	104	90	110				

Sample ID: **N048276-019AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158762**
Client ID: **ZZZZZZ** Batch ID: **R158762** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4457509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.936	0.20	1.000	0	93.6	90	110				

Sample ID: **N048276-020AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158762**
Client ID: **ZZZZZZ** Batch ID: **R158762** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4457511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.943	0.20	1.000	0	94.3	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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **LCS-R158791** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **LCSW** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.858	0.20	5.000	0	97.2	90	110				

Sample ID: **MB-R158791** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **PBW** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458318**

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

Sample ID: **N048276-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.319	1.0	25.00	18.26	100	90	110				

Sample ID: **N048276-010AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.229	1.0	25.00	18.26	99.9	90	110	43.32	0.208	20	

Sample ID: **N048276-014ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.885	0.20						7.839	0.580	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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048276-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.974	0.20	5.000	7.839	103	90	110				

Sample ID: **N048276-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.931	1.0	25.00	18.72	101	90	110				

Sample ID: **N048276-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5311.500	100	2500	2812	100	90	110				

Sample ID: **N048276-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.858	0.20	5.000	3.688	103	90	110				

Sample ID: **N048295-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458334**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.956	0.20	1.000	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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048295-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.978	0.20	1.000	0	97.8	90	110				

Sample ID: **N048295-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.987	0.20	1.000	0	98.7	90	110				

Sample ID: **N048295-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.983	0.20	1.000	0	98.3	90	110				

Sample ID: **N048295-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458344**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.009	0.20	1.000	0	101	90	110				

Sample ID: **N048295-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.987	0.20	1.000	0	98.6	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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048295-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458350**

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: **N048295-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.992	0.20	1.000	0	99.2	90	110				

Sample ID: **N048295-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.475	1.0	5.000	1.807	93.4	90	110				

Sample ID: **N048295-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.056	1.0	5.000	2.109	98.9	90	110				

Sample ID: **N048295-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.810	1.0	5.000	0	96.2	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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048294-019AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	138.510	2.0	50.00	87.90	101	90	110				

Sample ID: **N048295-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.075	1.0	5.000	0	101	90	110				

Sample ID: **N048295-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.901	1.0	5.000	0	98.0	90	110				

Sample ID: **N048294-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.045	1.0	25.00	14.68	97.5	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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **MB-90595**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158814**
Client ID: **PBW**	Batch ID: **90595**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/11/2021**	SeqNo: **4460008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.077	1.0									

Sample ID: **LCS-90595**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158814**
Client ID: **LCSW**	Batch ID: **90595**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/11/2021**	SeqNo: **4460009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.191	1.0	10.00	0	102	85	115				

Sample ID: **N048276-008CMS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158814**
Client ID: **ZZZZZZ**	Batch ID: **90595**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/11/2021**	SeqNo: **4460037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	745.650	5.0	10.00	760.5	-149	75	125				S

Sample ID: **N048276-008CMSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158814**
Client ID: **ZZZZZZ**	Batch ID: **90595**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/11/2021**	SeqNo: **4460039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	753.808	5.0	10.00	760.5	-67.4	75	125	745.7	1.09	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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **N048276-008C-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **158814**
Client ID: **ZZZZZZ** Batch ID: **90595** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/11/2021** SeqNo: **4460035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	770.236	5.0	10.00	760.5	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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-001

Client Sample ID: MW-68-180-Q421
Collection Date: 12/7/2021 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**				PrepDate:	**12/8/2021**	Analyst: **CEI**
Arsenic	1.9	0.050	0.10		µg/L	1	12/11/2021 10:34 PM
Manganese	ND	0.026	0.50		µg/L	1	12/11/2021 04:18 PM
Molybdenum	50	0.12	0.50		µg/L	1	12/11/2021 04:18 PM
Selenium	15	0.044	0.50		µg/L	1	12/11/2021 04:18 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	**Client Sample ID:**	MW-68-240-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 9:26:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-002		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211211A** QC Batch: **90595** PrepDate: **12/8/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/11/2021 04:36 PM
Manganese	12	0.026	0.50		µg/L	1	12/11/2021 04:36 PM
Molybdenum	25	0.12	0.50		µg/L	1	12/11/2021 04:36 PM
Selenium	3.9	0.044	0.50		µg/L	1	12/11/2021 04:36 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-003

Client Sample ID: MW-925-Q421
Collection Date: 12/7/2021 9:36:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**				PrepDate:	**12/8/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/11/2021 04:48 PM
Manganese	12	0.026	0.50		µg/L	1	12/11/2021 04:48 PM
Molybdenum	24	0.12	0.50		µg/L	1	12/11/2021 04:48 PM
Selenium	3.4	0.044	0.50		µg/L	1	12/11/2021 04:48 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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-004

Client Sample ID: MW-66-165-Q421
Collection Date: 12/7/2021 2:13:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	0.49	0.050	0.10		µg/L	1	12/11/2021 05:17 PM
Manganese	ND	0.026	0.50		µg/L	1	12/11/2021 05:17 PM
Molybdenum	5.4	0.12	0.50		µg/L	1	12/11/2021 05:17 PM
Selenium	11	0.044	0.50		µg/L	1	12/11/2021 05:17 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-005

Client Sample ID: MW-66-230-Q421
Collection Date: 12/7/2021 2:57:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	8.9	0.050	0.10		µg/L	1	12/11/2021 05:29 PM
Manganese	8.1	0.026	0.50		µg/L	1	12/11/2021 05:29 PM
Molybdenum	67	0.12	0.50		µg/L	1	12/11/2021 05:29 PM
Selenium	6.9	0.044	0.50		µg/L	1	12/11/2021 05:29 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-006

Client Sample ID: MW-67-185-Q421
Collection Date: 12/7/2021 10:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:	**12/8/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/11/2021 05:41 PM
Manganese	2000	0.66	12		µg/L	25	12/11/2021 11:03 PM
Molybdenum	47	0.12	0.50		µg/L	1	12/11/2021 05:41 PM
Selenium	26	0.044	0.50		µg/L	1	12/11/2021 05:41 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-67-225-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 11:28:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-007		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211211A** QC Batch: **90595** PrepDate: **12/8/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/11/2021 05:53 PM
Manganese	1.2	0.026	0.50		µg/L	1	12/11/2021 05:53 PM
Molybdenum	42	0.12	0.50		µg/L	1	12/11/2021 05:53 PM
Selenium	50	0.044	0.50		µg/L	1	12/11/2021 05:53 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-008

Client Sample ID: MW-67-260-Q421
Collection Date: 12/7/2021 1:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/11/2021 06:05 PM
Manganese	1.7	0.026	0.50		µg/L	1	12/11/2021 06:05 PM
Molybdenum	60	0.12	0.50		µg/L	1	12/11/2021 06:05 PM
Selenium	1.4	0.044	0.50		µg/L	1	12/11/2021 11:15 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-009

Client Sample ID: MW-13-Q421
Collection Date: 12/7/2021 2:41:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	0.80	0.050	0.10		µg/L	1	12/11/2021 07:29 PM
Manganese	5.1	0.026	0.50		µg/L	1	12/11/2021 07:29 PM
Molybdenum	12	0.12	0.50		µg/L	1	12/11/2021 07:29 PM
Selenium	3.0	0.044	0.50		µg/L	1	12/11/2021 07:29 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-010

Client Sample ID: MW-917-Q421
Collection Date: 12/7/2021 2:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	0.81	0.050	0.10		µg/L	1	12/11/2021 07:58 PM
Manganese	4.7	0.026	0.50		µg/L	1	12/11/2021 07:58 PM
Molybdenum	11	0.12	0.50		µg/L	1	12/11/2021 07:58 PM
Selenium	2.8	0.044	0.50		µg/L	1	12/11/2021 07:58 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:**	MW-14-Q421
Lab Order:	N048276	**Collection Date:**	12/7/2021 10:16:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048276-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**				PrepDate:	**12/8/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/11/2021 08:10 PM
Manganese	2.6	0.026	0.50		µg/L	1	12/11/2021 08:10 PM
Molybdenum	13	0.12	0.50		µg/L	1	12/11/2021 08:10 PM
Selenium	2.1	0.044	0.50		µg/L	1	12/11/2021 08:10 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-012

Client Sample ID: MW-25-Q421
Collection Date: 12/7/2021 3:28:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	0.75	0.050	0.10		µg/L	1	12/11/2021 08:22 PM
Manganese	3.6	0.026	0.50		µg/L	1	12/11/2021 08:22 PM
Molybdenum	14	0.12	0.50		µg/L	1	12/11/2021 08:22 PM
Selenium	6.2	0.044	0.50		µg/L	1	12/11/2021 08:22 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-013

Client Sample ID: MW-37D-Q421
Collection Date: 12/7/2021 11:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/11/2021 08:34 PM
Manganese	ND	0.026	0.50		µg/L	1	12/11/2021 08:34 PM
Molybdenum	68	0.12	0.50		µg/L	1	12/11/2021 08:34 PM
Selenium	1.0	0.044	0.50		µg/L	1	12/11/2021 08:34 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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-014

Client Sample ID: MW-37S-Q421
Collection Date: 12/7/2021 12:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/11/2021 09:16 PM
Manganese	5.7	0.026	0.50		µg/L	1	12/11/2021 09:16 PM
Molybdenum	16	0.12	0.50		µg/L	1	12/11/2021 09:16 PM
Selenium	0.80	0.044	0.50		µg/L	1	12/11/2021 09:16 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-015

Client Sample ID: MW-41D-Q421
Collection Date: 12/7/2021 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/11/2021 09:28 PM
Manganese	32	0.026	0.50		µg/L	1	12/11/2021 09:28 PM
Molybdenum	79	0.12	0.50		µg/L	1	12/11/2021 09:28 PM
Selenium	0.65	0.044	0.50		µg/L	1	12/11/2021 09:28 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-016

Client Sample ID: MW-41M-Q421
Collection Date: 12/7/2021 8:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/11/2021 09:40 PM
Manganese	2.4	0.026	0.50		µg/L	1	12/11/2021 09:40 PM
Molybdenum	27	0.12	0.50		µg/L	1	12/11/2021 09:40 PM
Selenium	ND	0.044	0.50		µg/L	1	12/11/2021 09:40 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-017

Client Sample ID: MW-41S-Q421
Collection Date: 12/7/2021 9:24:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211211A** QC Batch: **90595**				PrepDate:	**12/8/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/11/2021 09:52 PM
Manganese	3.8	0.026	0.50		µg/L	1	12/11/2021 09:52 PM
Molybdenum	14	0.12	0.50		µg/L	1	12/11/2021 09:52 PM
Selenium	2.2	0.044	0.50		µg/L	1	12/11/2021 09:52 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
Lab Order: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048276-018

Client Sample ID: MW-921-Q421
Collection Date: 12/7/2021 9:34:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211211A**	QC Batch: **90595**			PrepDate:		**12/8/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/11/2021 10:03 PM
Manganese	3.3	0.026	0.50		µg/L	1	12/11/2021 10:03 PM
Molybdenum	14	0.12	0.50		µg/L	1	12/11/2021 10:03 PM
Selenium	1.9	0.044	0.50		µg/L	1	12/11/2021 10:03 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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **MB-90595**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158814**
Client ID: **PBW**	Batch ID: **90595**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/11/2021**	SeqNo: **4460148**

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

Sample ID: **LCS-90595**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158814**
Client ID: **LCSW**	Batch ID: **90595**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/11/2021**	SeqNo: **4460149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.018	0.10	10.00	0	100	85	115				
Manganese	100.495	0.50	100.0	0	100	85	115				
Molybdenum	10.014	0.50	10.00	0	100	85	115				
Selenium	9.853	0.50	10.00	0	98.5	85	115				

Sample ID: **N048276-008CMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158814**
Client ID: **ZZZZZZ**	Batch ID: **90595**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/11/2021**	SeqNo: **4460176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	87.406	0.50	100.0	1.722	85.7	75	125				
Molybdenum	70.545	0.50	10.00	59.53	110	75	125				

Sample ID: **N048276-008CMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158814**
Client ID: **ZZZZZZ**	Batch ID: **90595**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/11/2021**	SeqNo: **4460178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	86.894	0.50	100.0	1.722	85.2	75	125	87.41	0.588	20	
Molybdenum	70.920	0.50	10.00	59.53	114	75	125	70.55	0.530	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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N048276-008CMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158814**
Client ID: **ZZZZZZ**	Batch ID: **90595**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/11/2021**	SeqNo: **4460217**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	3.508	0.10	10.00	0	35.1	75	125				S

Sample ID: **N048276-008CMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158814**
Client ID: **ZZZZZZ**	Batch ID: **90595**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/11/2021**	SeqNo: **4479336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	3.799	0.10	10.00	0	38.0	75	125	3.508	7.97	20	S

Sample ID: **N048276-008CMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158814**
Client ID: **ZZZZZZ**	Batch ID: **90595**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/11/2021**	SeqNo: **4479337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.282	0.50	10.00	1.350	89.3	75	125				

Sample ID: **N048276-008CMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/8/2021**	RunNo: **158814**
Client ID: **ZZZZZZ**	Batch ID: **90595**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/11/2021**	SeqNo: **4479338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.103	0.50	10.00	1.350	87.5	75	125	10.28	1.75	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: N048276
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N048276-008C-PS**	SampType: **PS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date:	RunNo: **158814**
Client ID: **ZZZZZZ**	Batch ID: **90595**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/11/2021**	SeqNo: **4460174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.414	0.10	10.00	0	24.1	80	120				S
Manganese	81.383	0.50	100.0	1.722	79.7	80	120				S
Molybdenum	71.029	0.50	10.00	59.53	115	80	120				

Sample ID: **N048276-008C-PS**	SampType: **PS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date:	RunNo: **158814**
Client ID: **ZZZZZZ**	Batch ID: **90595**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/11/2021**	SeqNo: **4479339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.345	0.50	10.00	1.350	80.0	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		

N048276

ASSET LABORATORIES
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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 ✓; Specify: RWQCB
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	Address:	Sample Receipt Condition (Y N): 1. Chilled ✓; 2. Headspace; 3. Container Intact ✓; 4. Seal Present ✓; 5. IR number 3; 6. Method of Cooling: ICE
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#:	Global ID: Specify State:
Submitted By: Russia Tap		Phone: 949-727-1400, ext 200 Fax:	Sample Temp: 2.3°C / 2.1°C / 2.7°C
Title: Field Tech	Phone: 916-786-3302 Fax:		
Signature: Date: 12/7/21	Sampled By: R. Russia Tap		Courier: ASSET
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.		Tracking No.:
Project Name: PG&E Topock - RCM	Signature: Date: 12/7/21		
Project Number: 30110373.4Q21GW			

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, Molybdenum, Selenium (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	TRUE	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048276-01	MW-68-180-Q421	12/7/2021	8:25		X	X	X	X		E	3	P	BNS	
2	-02	MW-68-240-Q421	12/7/2021	9:26		X	X	X	X		E	3	P	BNS	
3	-03	MW-925-Q421	12/7/2021	9:36		X	X	X	X		E	3	P	BNS	
4	-04	MW-66-165-Q421	12/7/2021	14:13		X	X	X	X		E	3	P	BNS	
5	-05	MW-66-230-Q421	12/7/2021	14:57		X	X	X	X		E	3	P	BNS	
	-06	MW-67-185-Q421	12/7/2021	10:32		X	X	X	X		E	3	P	BNS	
7	-07	MW-67-225-Q421	12/7/2021	11:28		X	X	X	X		E	3	P	BNS	
8	-08	MW-67-260-Q421	12/7/2021	13:24		X	X	X	X		E	3	P	BNS	MS/MSD
9	-09	MW-13-Q421	12/7/2021	14:41		X	X	X	X		E	3	P	BNS	
10	-10	MW-917-Q421	12/7/2021	14:51		X	X	X	X		E	3	P	BNS	
11	-11	MW-14-Q421	12/7/2021	10:16		X	X	X	X		E	3	P	BNS	
12	-12	MW-25-Q421	12/7/2021	15:28		X	X	X	X		E	3	P	BNS	
13	-13	MW-37D-Q421	12/7/2021	11:35		X	X	X	X		E	3	P	BNS	
14	-14	MW-37S-Q421	12/7/2021	12:11		X	X	X	X		E	3	P		

Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
Russia Tap	12/7/21 1615		12/7/21 1615
Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
DA ROMCO ALCANTARA	12/7/21 1901	DA ROMCO ALCANTARA	12/7/21 1901
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
X	E	= Routine 5-7 Workdays

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

Special Instruction:

Terms
1 All samples will be disposed in 45 days and records will be destroy ed 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: B (NH4)2SO4/NH4OH

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

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigan.com	Address:	
Phone: 916-788-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Riggie Top		Phone: 949-727-1400, ext 200 Fax:	
Title: Field Tech	Phone: 916-786-3302 Fax:		
Signature: Date: 12/7/21	Sampled By: Riggie Top		

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 - RCM
Signature: Date: 12/7/21
Project Number: 30110373.4Q21GW

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

Sample Receipt Condition:

	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	3	

6. Method of Cooling: ICE

Sample Temp: 2.3°C / 2.1°C / 2.7°C

Courier: ASSET
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	125 mL poly: Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4	500mL poly: Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, Molybdenum, Selenium	500mL poly: Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium,	TRUE	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048276-15	MW-41D-Q421	12/7/2021	8:15		X	X	X	X		E	3	P	BNS	
2	-16	MW-41M-Q421	12/7/2021	8:50		X	X	X	X		E	3	P	BNS	
3	-17	MW-41S-Q421	12/7/2021	~~9:25~~ 9:24		X	X	X	X		E	3	P	BNS	
4	-18	MW-921-Q421	12/7/2021	~~9:35~~ 9:34		X	X	X	X		E	3	P	BNS	
5	-19	EB-731-Q421	12/7/2021	15:07		X					E	1	P	BNS	
	-20	EB-732-Q421	12/7/2021	15:35		X					E	1	P	BNS	
7															
8															
9															
10															
11															
12															
13															
14															

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Riggie Top	12/7/21 1615	ROMEO ALCANTARA	12/7/21 1615
ROMEO ALCANTARA	12/7/21 1901	ROMEO ALCANTARA	12/7/21 1901

Turn Around Time (TAT)

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

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5 Trip Blanks and Equipment Blanks are billable sample
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Container Type: T=Tube; V=VOA; P=Pint; J=Jar; B=Tedlar; G=Glass; M=Metal; M=Metal; 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:	12/7/2021	Workorder:	N048276
Rep sample Temp (Deg C):	2.3/2.1/2.7	IR Gun ID:	3

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 By: GGJ GGarcia 12/8/2021

Reviewed By: MBC 12/13/2021

ASSET Laboratories

WORK ORDER Summary

08-Dec-21

WorkOrder: N048276

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/7/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048276-001A	MW-68-180-Q421	12/7/2021 8:25:00 AM	12/21/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-001B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-001C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-002A	MW-68-240-Q421	12/7/2021 9:26:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-002B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-002C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-003A	MW-925-Q421	12/7/2021 9:36:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-003B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-003C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-004A	MW-66-165-Q421	12/7/2021 2:13:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-004B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-004C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-005A	MW-66-230-Q421	12/7/2021 2:57:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-21

WorkOrder: N048276

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/7/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048276-005B	MW-66-230-Q421	12/7/2021 2:57:00 PM	12/21/2021	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-005C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-006A	MW-67-185-Q421	12/7/2021 10:32:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-006B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-006C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-007A	MW-67-225-Q421	12/7/2021 11:28:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-007B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-007C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-008A	MW-67-260-Q421	12/7/2021 1:24:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☑	☐	WW
N048276-008B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☑	☑	SUB
N048276-008C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
N048276-009A	MW-13-Q421	12/7/2021 2:41:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-21

WorkOrder: N048276

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/7/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048276-009B	MW-13-Q421	12/7/2021 2:41:00 PM	12/21/2021	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-009C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-010A	MW-917-Q421	12/7/2021 2:51:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-010B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-010C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-011A	MW-14-Q421	12/7/2021 10:16:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-011B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-011C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-012A	MW-25-Q421	12/7/2021 3:28:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-012B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-012C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-013A	MW-37D-Q421	12/7/2021 11:35:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-21

WorkOrder: N048276

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/7/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048276-013B	MW-37D-Q421	12/7/2021 11:35:00 AM	12/21/2021	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-013C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-014A	MW-37S-Q421	12/7/2021 12:11:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-014B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-014C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-015A	MW-41D-Q421	12/7/2021 8:15:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-015B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-015C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-016A	MW-41M-Q421	12/7/2021 8:50:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-016B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-016C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-017A	MW-41S-Q421	12/7/2021 9:24:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-21

WorkOrder: N048276

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/7/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048276-017B	MW-41S-Q421	12/7/2021 9:24:00 AM	12/21/2021	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-017C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-018A	MW-921-Q421	12/7/2021 9:34:00 AM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-018B			12/21/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048276-018C			12/21/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048276-019A	EB-731-Q421	12/7/2021 3:07:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-020A	EB-732-Q421	12/7/2021 3:35:00 PM	12/21/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048276-021A	FOLDER	12/21/2021	12/21/2021		Folder	Folder	☐	☐	☐	LAB
			12/21/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/21/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Riggie Tep

08-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NO3F		
N048276-001B / MW-68-180-Q421	Groundwater	12/7/2021 8:25:00 AM	8OZP	1		
N048276-002B / MW-68-240-Q421	Groundwater	12/7/2021 9:26:00 AM	8OZP	1		
N048276-003B / MW-925-Q421	Groundwater	12/7/2021 9:36:00 AM	8OZP	1		
N048276-004B / MW-66-165-Q421	Groundwater	12/7/2021 2:13:00 PM	8OZP	1		
N048276-005B / MW-66-230-Q421	Groundwater	12/7/2021 2:57:00 PM	8OZP	1		
N048276-006B / MW-67-185-Q421	Groundwater	12/7/2021 10:32:00 AM	8OZP	1		
N048276-007B / MW-67-225-Q421	Groundwater	12/7/2021 11:28:00 AM	8OZP	1		
N048276-008B / MW-67-260-Q421	Groundwater	12/7/2021 1:24:00 PM	8OZP	1	MS/MSD	
N048276-009B / MW-13-Q421	Groundwater	12/7/2021 2:41:00 PM	8OZP	1		
N048276-010B / MW-917-Q421	Groundwater	12/7/2021 2:51:00 PM	8OZP	1		
N048276-011B / MW-14-Q421	Groundwater	12/7/2021 10:16:00 AM	8OZP	1		
N048276-012B / MW-25-Q421	Groundwater	12/7/2021 3:28:00 PM	8OZP	1		
N048276-013B / MW-37D-Q421	Groundwater	12/7/2021 11:35:00 AM	8OZP	1		
N048276-014B / MW-37S-Q421	Groundwater	12/7/2021 12:11:00 PM	8OZP	1		
N048276-015B / MW-41D-Q421	Groundwater	12/7/2021 8:15:00 AM	8OZP	1		
N048276-016B / MW-41M-Q421	Groundwater	12/7/2021 8:50:00 AM	8OZP	1		
N048276-017B / MW-41S-Q421	Groundwater	12/7/2021 9:24:00 AM	8OZP	1		
N048276-018B / MW-921-Q421	Groundwater	12/7/2021 9:34:00 AM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48276A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT

Please analyse for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555475881

		Date/Time			Date/Time
Relinquished by:	GGarcia	12/8/2021 16:30	**Received by:**		
Relinquished by:			**Received by:**		

December 25, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048294

RE: PG&E Topock - RCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 08, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET Laboratories - Las Vegas.

ASSET Laboratories **Date:** *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - RCM, 30110373.4Q21GW
Lab Order:	N048294

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.

Subcontracted Analyses:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (2.5 ug/L) and hexavalent chromium (0.95 ug/L) for sample N048294-001 (MW-95-113-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (11 ug/L) and hexavalent chromium (8.6 ug/L) for sample N048294-002 (MW-95-157-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (2.5 ug/L) and hexavalent chromium (0.95 ug/L) for sample N048294-001 (MW-95-113-Q421) 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 2.4 and 2.7 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - RCM, 30110373.4Q21GW
Lab Order:	N048294

CASE NARRATIVE

Because the results for total dissolved chromium (11 ug/L) and hexavalent chromium (8.6 ug/L) for sample N048294-002 (MW-95-157-Q421) 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 11 and 9 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *25-Dec-21*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048294
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048294-001A	MW-95-113-Q421	Groundwater	12/8/2021 2:31:00 PM	12/8/2021	12/25/2021
N048294-001B	MW-95-113-Q421	Groundwater	12/8/2021 2:31:00 PM	12/8/2021	12/25/2021
N048294-001C	MW-95-113-Q421	Groundwater	12/8/2021 2:31:00 PM	12/8/2021	12/25/2021
N048294-002A	MW-95-157-Q421	Groundwater	12/8/2021 1:46:00 PM	12/8/2021	12/25/2021
N048294-002B	MW-95-157-Q421	Groundwater	12/8/2021 1:46:00 PM	12/8/2021	12/25/2021
N048294-002C	MW-95-157-Q421	Groundwater	12/8/2021 1:46:00 PM	12/8/2021	12/25/2021
N048294-003A	MW-38D-Q421	Groundwater	12/8/2021 12:17:00 PM	12/8/2021	12/25/2021
N048294-003B	MW-38D-Q421	Groundwater	12/8/2021 12:17:00 PM	12/8/2021	12/25/2021
N048294-003C	MW-38D-Q421	Groundwater	12/8/2021 12:17:00 PM	12/8/2021	12/25/2021
N048294-004A	MW-38S-Q421	Groundwater	12/8/2021 11:36:00 AM	12/8/2021	12/25/2021
N048294-004B	MW-38S-Q421	Groundwater	12/8/2021 11:36:00 AM	12/8/2021	12/25/2021
N048294-004C	MW-38S-Q421	Groundwater	12/8/2021 11:36:00 AM	12/8/2021	12/25/2021
N048294-005A	EB-735-Q421	Groundwater	12/8/2021 3:00:00 PM	12/8/2021	12/25/2021
N048294-006A	MW-65-160-Q421	Groundwater	12/8/2021 8:11:00 AM	12/8/2021	12/25/2021
N048294-006B	MW-65-160-Q421	Groundwater	12/8/2021 8:11:00 AM	12/8/2021	12/25/2021
N048294-006C	MW-65-160-Q421	Groundwater	12/8/2021 8:11:00 AM	12/8/2021	12/25/2021
N048294-007A	MW-65-225-Q421	Groundwater	12/8/2021 8:53:00 AM	12/8/2021	12/25/2021
N048294-007B	MW-65-225-Q421	Groundwater	12/8/2021 8:53:00 AM	12/8/2021	12/25/2021
N048294-007C	MW-65-225-Q421	Groundwater	12/8/2021 8:53:00 AM	12/8/2021	12/25/2021
N048294-008A	MW-924-Q421	Groundwater	12/8/2021 9:03:00 AM	12/8/2021	12/25/2021
N048294-008B	MW-924-Q421	Groundwater	12/8/2021 9:03:00 AM	12/8/2021	12/25/2021
N048294-008C	MW-924-Q421	Groundwater	12/8/2021 9:03:00 AM	12/8/2021	12/25/2021
N048294-009A	PGE-08-Q421	Groundwater	12/8/2021 3:41:00 PM	12/8/2021	12/25/2021
N048294-009B	PGE-08-Q421	Groundwater	12/8/2021 3:41:00 PM	12/8/2021	12/25/2021
N048294-010A	MW-69-195-Q421	Groundwater	12/8/2021 10:04:00 AM	12/8/2021	12/25/2021
N048294-010B	MW-69-195-Q421	Groundwater	12/8/2021 10:04:00 AM	12/8/2021	12/25/2021
N048294-010C	MW-69-195-Q421	Groundwater	12/8/2021 10:04:00 AM	12/8/2021	12/25/2021
N048294-011A	MW-74-240-Q421	Groundwater	12/8/2021 10:54:00 AM	12/8/2021	12/25/2021
N048294-011B	MW-74-240-Q421	Groundwater	12/8/2021 10:54:00 AM	12/8/2021	12/25/2021

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048294
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048294-011C	MW-74-240-Q421	Groundwater	12/8/2021 10:54:00 AM	12/8/2021	12/25/2021
N048294-012A	TW-01-Q421	Groundwater	12/8/2021 11:25:00 AM	12/8/2021	12/25/2021
N048294-012B	TW-01-Q421	Groundwater	12/8/2021 11:25:00 AM	12/8/2021	12/25/2021
N048294-012C	TW-01-Q421	Groundwater	12/8/2021 11:25:00 AM	12/8/2021	12/25/2021
N048294-013A	EB-734-Q421	Groundwater	12/8/2021 3:45:00 PM	12/8/2021	12/25/2021
N048294-014A	MW-88-107-Q421	Groundwater	12/8/2021 10:55:00 AM	12/8/2021	12/25/2021
N048294-014B	MW-88-107-Q421	Groundwater	12/8/2021 10:55:00 AM	12/8/2021	12/25/2021
N048294-015A	MW-09-Q421	Groundwater	12/8/2021 9:45:00 AM	12/8/2021	12/25/2021
N048294-015B	MW-09-Q421	Groundwater	12/8/2021 9:45:00 AM	12/8/2021	12/25/2021
N048294-015C	MW-09-Q421	Groundwater	12/8/2021 9:45:00 AM	12/8/2021	12/25/2021
N048294-016A	MW-915-Q421	Groundwater	12/8/2021 9:55:00 AM	12/8/2021	12/25/2021
N048294-016B	MW-915-Q421	Groundwater	12/8/2021 9:55:00 AM	12/8/2021	12/25/2021
N048294-016C	MW-915-Q421	Groundwater	12/8/2021 9:55:00 AM	12/8/2021	12/25/2021
N048294-017A	MW-10-Q421	Groundwater	12/8/2021 8:27:00 AM	12/8/2021	12/25/2021
N048294-017B	MW-10-Q421	Groundwater	12/8/2021 8:27:00 AM	12/8/2021	12/25/2021
N048294-017C	MW-10-Q421	Groundwater	12/8/2021 8:27:00 AM	12/8/2021	12/25/2021
N048294-018A	MW-916-Q421	Groundwater	12/8/2021 8:37:00 AM	12/8/2021	12/25/2021
N048294-018B	MW-916-Q421	Groundwater	12/8/2021 8:37:00 AM	12/8/2021	12/25/2021
N048294-018C	MW-916-Q421	Groundwater	12/8/2021 8:37:00 AM	12/8/2021	12/25/2021
N048294-019A	MW-10D-Q421	Groundwater	12/8/2021 9:06:00 AM	12/8/2021	12/25/2021
N048294-019B	MW-10D-Q421	Groundwater	12/8/2021 9:06:00 AM	12/8/2021	12/25/2021
N048294-019C	MW-10D-Q421	Groundwater	12/8/2021 9:06:00 AM	12/8/2021	12/25/2021

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-95-113-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 2:31:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A**	QC Batch: **R158790**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	0.95	0.025	0.20		µg/L	1	12/9/2021 10:16 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	2.5	0.035	1.0		µg/L	1	12/15/2021 09:24 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-95-157-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 1:46:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A**	QC Batch: **R158790**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	8.6	0.025	0.20		µg/L	1	12/9/2021 10:26 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	11	0.035	1.0		µg/L	1	12/15/2021 10:29 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 12:17:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A** QC Batch: **R158790**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	50	0.13	1.0		µg/L	5	12/9/2021 10:07 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211215B** QC Batch: **90613**				PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	47	0.035	1.0		µg/L	1	12/15/2021 10:41 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 11:36:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B** QC Batch: **R158791**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	15	0.13	1.0		µg/L	5	12/10/2021 09:09 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211215B** QC Batch: **90613**				PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	17	0.035	1.0		µg/L	1	12/15/2021 10:53 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	EB-735-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 3:00:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A**	QC Batch: **R158790**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/9/2021 10:45 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 8:11:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A**	QC Batch: **R158790**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	300	1.3	10		µg/L	50	12/9/2021 12:00 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	310	0.18	5.0		µg/L	5	12/15/2021 11:11 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 8:53:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A** QC Batch: **R158790**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	83	0.25	2.0		µg/L	10	12/9/2021 07:29 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211215B** QC Batch: **90613**				PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	80	0.035	1.0		µg/L	1	12/15/2021 11:17 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-924-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 9:03:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A** QC Batch: **R158790**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	83	0.25	2.0		µg/L	10	12/9/2021 07:48 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211215B** QC Batch: **90613**				PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	81	0.035	1.0		µg/L	1	12/15/2021 11:41 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PGE-08-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 3:41:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A**	QC Batch: **R158790**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/9/2021 04:52 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/15/2021 11:53 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 10:04:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A**	QC Batch: **R158790**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	410	2.5	20		µg/L	100	12/9/2021 01:54 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	390	0.18	5.0		µg/L	5	12/16/2021 12:11 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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 10:54:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A**	QC Batch: **R158790**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/9/2021 02:13 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/16/2021 12:17 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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 11:25:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A**	QC Batch: **R158790**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1200	5.0	40		µg/L	200	12/9/2021 02:32 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211216F**	QC Batch: **90613**			PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	1300	0.88	25		µg/L	25	12/16/2021 05:07 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	EB-734-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 3:45:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A**	QC Batch: **R158790**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/9/2021 02:51 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-88-107-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 10:55:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A**	QC Batch: **R158790**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	130	0.50	4.0		µg/L	20	12/9/2021 03:35 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	140	0.035	1.0		µg/L	1	12/16/2021 01:04 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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ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 9:45:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A**	QC Batch: **R158790**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	170	0.50	4.0		µg/L	20	12/9/2021 03:55 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	170	0.035	1.0		µg/L	1	12/16/2021 01:16 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 9:55:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A**	QC Batch: **R158790**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	170	0.50	4.0		µg/L	20	12/9/2021 04:14 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	180	0.035	1.0		µg/L	1	12/16/2021 01:28 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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ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 8:27:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A** QC Batch: **R158790**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	69	0.25	2.0		µg/L	10	12/9/2021 08:17 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211215B** QC Batch: **90613**				PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	71	0.035	1.0		µg/L	1	12/16/2021 01:40 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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-916-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 8:37:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209A** QC Batch: **R158790**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	67	0.25	2.0		µg/L	10	12/9/2021 08:45 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP8_211215B** QC Batch: **90613**				PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	72	0.035	1.0		µg/L	1	12/16/2021 01:52 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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ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10D-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 9:06:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B** QC Batch: **R158791**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	88	0.25	2.0		µg/L	10	12/10/2021 08:12 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211215B** QC Batch: **90613**				PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	89	0.035	1.0		µg/L	1	12/16/2021 02:15 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
Work Order: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R158790**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **PBW**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458256**

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-R158790**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **LCSW**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.918	0.20	5.000	0	98.4	90	110				

Sample ID: **N048294-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.940	0.20	1.000	0.9548	98.5	90	110				

Sample ID: **N048294-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.897	0.20	5.000	8.629	105	90	110				

Sample ID: **N048294-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.962	0.20	1.000	0	96.2	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: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048294-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	74.383	1.0	25.00	49.85	98.1	90	110				

Sample ID: **N048294-003AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	73.568	1.0	25.00	49.85	94.9	90	110	74.38	1.10	20	

Sample ID: **N048294-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	542.005	10	250.0	295.9	98.5	90	110				

Sample ID: **N048294-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.958	0.20						0.9548	0.335	20	

Sample ID: **N048294-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	898.060	20	500.0	412.8	97.1	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: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048294-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.005	0.20	1.000	0	100	90	110				

Sample ID: **N048294-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2202.400	40	1000	1228	97.4	90	110				

Sample ID: **N048294-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.975	0.20	1.000	0	97.5	90	110				

Sample ID: **N048294-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	229.396	4.0	100.0	130.8	98.6	90	110				

Sample ID: **N048294-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458287**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	265.724	4.0	100.0	169.1	96.6	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: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048294-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	264.224	4.0	100.0	166.8	97.4	90	110				

Sample ID: **N048294-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.877	1.0	5.000	0	97.5	90	110				

Sample ID: **N048275-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.487	1.0	25.00	39.12	101	90	110				

Sample ID: **N048294-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	132.693	2.0	50.00	82.78	99.8	90	110				

Sample ID: **N048294-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	133.673	2.0	50.00	82.77	102	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: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048294-017AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	117.929	2.0	50.00	68.97	97.9	90	110				

Sample ID: **N048294-018AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158790**
Client ID: **ZZZZZZ**	Batch ID: **R158790**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	116.229	2.0	50.00	66.71	99.0	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: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **LCS-R158791**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **LCSW**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.858	0.20	5.000	0	97.2	90	110				

Sample ID: **MB-R158791**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **PBW**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458318**

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

Sample ID: **N048276-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.319	1.0	25.00	18.26	100	90	110				

Sample ID: **N048276-010AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.229	1.0	25.00	18.26	99.9	90	110	43.32	0.208	20	

Sample ID: **N048276-014ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.885	0.20						7.839	0.580	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: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048276-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.974	0.20	5.000	7.839	103	90	110				

Sample ID: **N048276-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.931	1.0	25.00	18.72	101	90	110				

Sample ID: **N048276-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5311.500	100	2500	2812	100	90	110				

Sample ID: **N048276-018AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.858	0.20	5.000	3.688	103	90	110				

Sample ID: **N048295-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458334**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.956	0.20	1.000	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: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048295-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.978	0.20	1.000	0	97.8	90	110				

Sample ID: **N048295-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.987	0.20	1.000	0	98.7	90	110				

Sample ID: **N048295-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.983	0.20	1.000	0	98.3	90	110				

Sample ID: **N048295-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458344**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.009	0.20	1.000	0	101	90	110				

Sample ID: **N048295-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.987	0.20	1.000	0	98.6	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: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048295-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458350**

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: **N048295-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.992	0.20	1.000	0	99.2	90	110				

Sample ID: **N048295-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.475	1.0	5.000	1.807	93.4	90	110				

Sample ID: **N048295-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.056	1.0	5.000	2.109	98.9	90	110				

Sample ID: **N048295-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.810	1.0	5.000	0	96.2	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: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048294-019AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	138.510	2.0	50.00	87.90	101	90	110				

Sample ID: **N048295-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.075	1.0	5.000	0	101	90	110				

Sample ID: **N048295-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.901	1.0	5.000	0	98.0	90	110				

Sample ID: **N048294-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.045	1.0	25.00	14.68	97.5	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: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **MB-90613**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158931**
Client ID: **PBW**	Batch ID: **90613**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/15/2021**	SeqNo: **4466684**

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

Sample ID: **LCS-90613**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158931**
Client ID: **LCSW**	Batch ID: **90613**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/15/2021**	SeqNo: **4466685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.389	1.0	10.00	0	104	85	115				

Sample ID: **N048294-001C-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158931**
Client ID: **ZZZZZZ**	Batch ID: **90613**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/15/2021**	SeqNo: **4466691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.938	1.0	10.00	2.508	94.3	75	125				

Sample ID: **N048294-001C-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158931**
Client ID: **ZZZZZZ**	Batch ID: **90613**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/15/2021**	SeqNo: **4466693**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.920	1.0	10.00	2.508	94.1	75	125	11.94	0.154	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
Lab Order: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048294-001

Client Sample ID: MW-95-113-Q421
Collection Date: 12/8/2021 2:31:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	1.4	0.050	0.10		µg/L	1	12/15/2021 09:24 PM
Manganese	130	0.13	2.5		µg/L	5	12/15/2021 09:30 PM
Molybdenum	4.3	0.12	0.50		µg/L	1	12/15/2021 09:24 PM
Selenium	5.3	0.044	0.50		µg/L	1	12/15/2021 09:24 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:**	MW-95-157-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 1:46:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-002		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211215B** QC Batch: **90613** PrepDate: **12/9/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/15/2021 10:29 PM
Manganese	5.7	0.026	0.50		µg/L	1	12/15/2021 10:29 PM
Molybdenum	3.8	0.12	0.50		µg/L	1	12/15/2021 10:29 PM
Selenium	6.5	0.044	0.50		µg/L	1	12/15/2021 10:29 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 12:17:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/15/2021 10:41 PM
Manganese	5.3	0.026	0.50		µg/L	1	12/15/2021 10:41 PM
Molybdenum	58	0.12	0.50		µg/L	1	12/15/2021 10:41 PM
Selenium	0.83	0.044	0.50		µg/L	1	12/15/2021 10:41 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 11:36:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	7.2	0.050	0.10		µg/L	1	12/15/2021 10:53 PM
Manganese	3.4	0.026	0.50		µg/L	1	12/15/2021 10:53 PM
Molybdenum	8.2	0.12	0.50		µg/L	1	12/15/2021 10:53 PM
Selenium	3.9	0.044	0.50		µg/L	1	12/15/2021 10:53 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 8:11:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/15/2021 11:05 PM
Manganese	0.97	0.026	0.50		µg/L	1	12/15/2021 11:05 PM
Molybdenum	23	0.12	0.50		µg/L	1	12/15/2021 11:05 PM
Selenium	10	0.044	0.50		µg/L	1	12/15/2021 11:05 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		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 8:53:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/15/2021 11:17 PM
Manganese	43	0.026	0.50		µg/L	1	12/15/2021 11:17 PM
Molybdenum	50	0.12	0.50		µg/L	1	12/15/2021 11:17 PM
Selenium	1.8	0.044	0.50		µg/L	1	12/16/2021 04:55 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-924-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 9:03:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/15/2021 11:41 PM
Manganese	50	0.026	0.50		µg/L	1	12/15/2021 11:41 PM
Molybdenum	50	0.12	0.50		µg/L	1	12/15/2021 11:41 PM
Selenium	1.7	0.044	0.50		µg/L	1	12/15/2021 11:41 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: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PGE-08-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 3:41:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/15/2021 11:53 PM
Manganese	470	0.13	2.5		µg/L	5	12/15/2021 11:59 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
Lab Order: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048294-010

Client Sample ID: MW-69-195-Q421
Collection Date: 12/8/2021 10:04:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	0.86	0.050	0.10		µg/L	1	12/16/2021 12:05 AM
Manganese	2.1	0.026	0.50		µg/L	1	12/16/2021 12:05 AM
Molybdenum	54	0.12	0.50		µg/L	1	12/16/2021 12:05 AM
Selenium	11	0.044	0.50		µg/L	1	12/16/2021 12:05 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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ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 10:54:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	6.5	0.050	0.10		µg/L	1	12/16/2021 12:17 AM
Manganese	7.4	0.026	0.50		µg/L	1	12/16/2021 12:17 AM
Molybdenum	46	0.12	0.50		µg/L	1	12/16/2021 12:17 AM
Selenium	ND	0.044	0.50		µg/L	1	12/16/2021 12:17 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:**	TW-01-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 11:25:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211216F**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	0.76	0.050	0.10		µg/L	1	12/16/2021 05:01 PM
Manganese	ND	0.026	0.50		µg/L	1	12/16/2021 12:28 AM
Molybdenum	31	0.12	0.50		µg/L	1	12/16/2021 12:28 AM
Selenium	13	0.044	0.50		µg/L	1	12/16/2021 12:28 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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ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-88-107-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 10:55:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**				PrepDate:	**12/9/2021**	Analyst: **CEI**
Arsenic	1.7	0.050	0.10		µg/L	1	12/16/2021 01:04 AM
Manganese	2.0	0.026	0.50		µg/L	1	12/16/2021 01:04 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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ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 9:45:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	0.38	0.050	0.10		µg/L	1	12/16/2021 01:16 AM
Manganese	1.6	0.026	0.50		µg/L	1	12/16/2021 01:16 AM
Molybdenum	6.2	0.12	0.50		µg/L	1	12/16/2021 01:16 AM
Selenium	6.2	0.044	0.50		µg/L	1	12/16/2021 01:16 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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ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 9:55:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211216F**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	0.52	0.050	0.10		µg/L	1	12/16/2021 05:21 PM
Manganese	2.0	0.026	0.50		µg/L	1	12/16/2021 01:28 AM
Molybdenum	6.7	0.12	0.50		µg/L	1	12/16/2021 01:28 AM
Selenium	6.4	0.044	0.50		µg/L	1	12/16/2021 01:28 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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ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 8:27:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	0.93	0.050	0.10		µg/L	1	12/16/2021 01:40 AM
Manganese	1.3	0.026	0.50		µg/L	1	12/16/2021 01:40 AM
Molybdenum	15	0.12	0.50		µg/L	1	12/16/2021 01:40 AM
Selenium	6.1	0.044	0.50		µg/L	1	12/16/2021 01:40 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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ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-916-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 8:37:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	0.92	0.050	0.10		µg/L	1	12/16/2021 01:52 AM
Manganese	1.1	0.026	0.50		µg/L	1	12/16/2021 01:52 AM
Molybdenum	15	0.12	0.50		µg/L	1	12/16/2021 01:52 AM
Selenium	6.2	0.044	0.50		µg/L	1	12/16/2021 01:52 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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ANALYTICAL RESULTS

Print Date: *25-Dec-21*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10D-Q421
Lab Order:	N048294	**Collection Date:**	12/8/2021 9:06:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048294-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211215B**	QC Batch: **90613**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/16/2021 02:15 AM
Manganese	ND	0.026	0.50		µg/L	1	12/16/2021 02:15 AM
Molybdenum	1.8	0.12	0.50		µg/L	1	12/16/2021 02:15 AM
Selenium	5.3	0.044	0.50		µg/L	1	12/16/2021 02:15 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
Work Order: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **MB-90613**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158931**
Client ID: **PBW**	Batch ID: **90613**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/15/2021**	SeqNo: **4466759**

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

Sample ID: **LCS-90613**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158931**
Client ID: **LCSW**	Batch ID: **90613**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/15/2021**	SeqNo: **4466760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.087	0.10	10.00	0	101	85	115				
Manganese	100.032	0.50	100.0	0	100	85	115				
Molybdenum	10.109	0.50	10.00	0	101	85	115				
Selenium	10.082	0.50	10.00	0	101	85	115				

Sample ID: **N048294-001C-MS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158931**
Client ID: **ZZZZZZ**	Batch ID: **90613**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/15/2021**	SeqNo: **4466766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.369	0.10	10.00	1.356	100	75	125				
Molybdenum	14.496	0.50	10.00	4.280	102	75	125				
Selenium	14.319	0.50	10.00	5.261	90.6	75	125				

Sample ID: **N048294-001C-MS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158931**
Client ID: **ZZZZZZ**	Batch ID: **90613**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/15/2021**	SeqNo: **4466767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	233.690	2.5	100.0	134.5	99.2	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: N048294
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N048294-001C-MSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158931**
Client ID: **ZZZZZZ**	Batch ID: **90613**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/15/2021**	SeqNo: **4466768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.220	0.10	10.00	1.356	98.6	75	125	11.37	1.32	20	
Molybdenum	14.604	0.50	10.00	4.280	103	75	125	14.50	0.747	20	
Selenium	14.381	0.50	10.00	5.261	91.2	75	125	14.32	0.427	20	

Sample ID: **N048294-001C-MSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158931**
Client ID: **ZZZZZZ**	Batch ID: **90613**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/15/2021**	SeqNo: **4466771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	232.504	2.5	100.0	134.5	98.0	75	125	233.7	0.509	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

N048294

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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

| | | |

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.mcare@critigzn.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Ryan Top		Phone: 949-727-1400, ext 200	Fax:
Title: Field Tech	Phone: 916-786-3302 Fax:		
Signature: Date: 12/8/21	Sampled By: Ryan Top		
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 - RCM	Signature: Date: 12/8/21		
Project Number: 30110373.4Q21GW			

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
Global ID:		Regulatory	
		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	X	
2. Headspace		X
3. Container Intact	X	
4. Seal Present		
5. IR number 3		
6. Method of Cooling: ICE		
Sample Temp: 1.1 1.6		

Courier:

Tracking No.:

Matrix			
Ground	X	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 125 mL poly	Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, 500mL poly	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, 500mL poly	Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium 500mL poly	TRUE	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048294-06	MW-65-160-Q421	12/8/2021	8:11		X	X	X	X	X		E	3	P	BNS	
2	-07	MW-65-225-Q421	12/8/2021	8:53		X	X	X	X	X		E	3	P	BNS	
3	-08	MW-924-Q421	12/8/2021	9:03		X	X	X	X	X		E	3	P	BNS	
4	-09	PGE-08-Q421	12/8/2021	15:41		X		X	X			E	3	P	BNS	2 (6)
5	-10	MW-69-195-Q421	12/8/2021	10:04		X	X	X	X	X		E	3	P	BNS	
	-11	MW-74-240-Q421	12/8/2021	10:54		X	X	X	X	X		E	3	P	BNS	
7	-12	TW-01-Q421	12/8/2021	11:25		X	X	X	X	X		E	3	P	BNS	
8	-13	EB-734-Q421	12/8/2021	15:45		X						E	1	P	BNS	
9	-14	MW-88-107-Q421	12/8/2021	10:55		X		X	X			E	3	P	BNS	2 (4)
10	-15	MW-09-Q421	12/8/2021	9:45		X	X	X	X	X		E	3	P	BNS	
11	-16	MW-915-Q421	12/8/2021	9:55		X	X	X	X	X		E	3	P	BNS	
12	-17	MW-10-Q421	12/8/2021	8:27		X	X	X	X	X		E	3	P	BNS	
13	-18	MW-916-Q421	12/8/2021	8:37		X	X	X	X	X		E	3	P	BNS	
14	-19	MW-10D-Q421	12/8/2021	9:06		X	X	X	X	X		E	3	P	BNS	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
Ryan Top	12/8/21 1410		
			12/8/21 0715
	12/8/21 1850		
			12/8/21 1850

Turn Around Time (TAT)

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

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

Special Instruction:

Terms:
1. All samples will be disposed in 45 days 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 samples
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:	B	(NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	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:	12/8/2021	Workorder:	N048294
Rep sample Temp (Deg C):	1.1/1.6	IR Gun ID:	3
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 By: GGJ GGarcia 12/9/2021

Reviewed By: MBC 12/15/2021

ASSET Laboratories

WORK ORDER Summary

09-Dec-21

WorkOrder: N048294

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/8/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048294-001A	MW-95-113-Q421	12/8/2021 2:31:00 PM	12/22/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-001B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048294-001C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-002A	MW-95-157-Q421	12/8/2021 1:46:00 PM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-002B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048294-002C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-003A	MW-38D-Q421	12/8/2021 12:17:00 PM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-003B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048294-003C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-004A	MW-38S-Q421	12/8/2021 11:36:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-004B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048294-004C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-005A	EB-735-Q421	12/8/2021 3:00:00 PM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

09-Dec-21

WorkOrder: N048294

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/8/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048294-006A	MW-65-160-Q421	12/8/2021 8:11:00 AM	12/22/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-006B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048294-006C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-007A	MW-65-225-Q421	12/8/2021 8:53:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-007B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048294-007C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-008A	MW-924-Q421	12/8/2021 9:03:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-008B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048294-008C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-009A	PGE-08-Q421	12/8/2021 3:41:00 PM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-009B			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-010A	MW-69-195-Q421	12/8/2021 10:04:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-010B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB

ASSET Laboratories

WORK ORDER Summary

09-Dec-21

WorkOrder: N048294

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/8/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048294-010C	MW-69-195-Q421	12/8/2021 10:04:00 AM	12/22/2021	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-011A	MW-74-240-Q421	12/8/2021 10:54:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-011B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048294-011C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-012A	TW-01-Q421	12/8/2021 11:25:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-012B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048294-012C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-013A	EB-734-Q421	12/8/2021 3:45:00 PM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-014A	MW-88-107-Q421	12/8/2021 10:55:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-014B			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-015A	MW-09-Q421	12/8/2021 9:45:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-015B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048294-015C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

09-Dec-21

WorkOrder: N048294

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/8/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048294-015C	MW-09-Q421	12/8/2021 9:45:00 AM	12/22/2021	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-016A	MW-915-Q421	12/8/2021 9:55:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-016B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048294-016C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-017A	MW-10-Q421	12/8/2021 8:27:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-017B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048294-017C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-018A	MW-916-Q421	12/8/2021 8:37:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-018B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048294-018C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-019A	MW-10D-Q421	12/8/2021 9:06:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048294-019B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048294-019C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

09-Dec-21

WorkOrder: N048294

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/8/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048294-019C	MW-10D-Q421	12/8/2021 9:06:00 AM	12/22/2021	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048294-020A	FOLDER	12/22/2021	12/22/2021		Folder	Folder	☐	☐	☐	LAB
			12/22/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/22/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Riggie Tep

09-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: SM4500-NO3F		
N048294-001B / MW-95-113-Q421	Groundwater	12/8/2021 2:31:00 PM	8OZP	1		
N048294-002B / MW-95-157-Q421	Groundwater	12/8/2021 1:46:00 PM	8OZP	1		
N048294-003B / MW-38D-Q421	Groundwater	12/8/2021 12:17:00 PM	8OZP	1		
N048294-004B / MW-38S-Q421	Groundwater	12/8/2021 11:36:00 AM	8OZP	1		
N048294-006B / MW-65-160-Q421	Groundwater	12/8/2021 8:11:00 AM	8OZP	1		
N048294-007B / MW-65-225-Q421	Groundwater	12/8/2021 8:53:00 AM	8OZP	1		
N048294-008B / MW-924-Q421	Groundwater	12/8/2021 9:03:00 AM	8OZP	1		
N048294-010B / MW-69-195-Q421	Groundwater	12/8/2021 10:04:00 AM	8OZP	1		
N048294-011B / MW-74-240-Q421	Groundwater	12/8/2021 10:54:00 AM	8OZP	1		
N048294-012B / TW-01-Q421	Groundwater	12/8/2021 11:25:00 AM	8OZP	1		
N048294-015B / MW-09-Q421	Groundwater	12/8/2021 9:45:00 AM	8OZP	1		
N048294-016B / MW-915-Q421	Groundwater	12/8/2021 9:55:00 AM	8OZP	1		
N048294-017B / MW-10-Q421	Groundwater	12/8/2021 8:27:00 AM	8OZP	1		
N048294-018B / MW-916-Q421	Groundwater	12/8/2021 8:37:00 AM	8OZP	1		
N048294-019B / MW-10D-Q421	Groundwater	12/8/2021 9:06:00 AM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48294A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555485757

		Date/Time		Date/Time
Relinquished by:	YRJ	12/9/2021 1630	**Received by:**	
Relinquished by:			**Received by:**	

December 25, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048295

RE: PG&E Topock - PCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 08, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (1.9 ug/L) and hexavalent chromium (0 ug/L) for sample N048295-008 (MW-44-125-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (36 ug/L) and hexavalent chromium (2.1 ug/L) for sample N048295-010 (MW-46-175-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6010B_Dissolved:

Dilution was necessary for sample N048295-012 since plasma was extinguished when sample was analyzed at lower dilution.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Iron in QC samples N048275-001C-MS and N048275-001C-MSD since the analyte concentration in the sample is

disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (1.9 ug/L) and hexavalent chromium (0 ug/L) for sample N048295-008 (MW-44-125-Q421) 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 1.8 and 0.3 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (36 ug/L) and hexavalent chromium (2.1 ug/L) for sample N048295-010 (MW-46-175-Q421) 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 35 and 24 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048295
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048295-001A	MW-28-025-Q421	Groundwater	12/8/2021 11:05:00 AM	12/8/2021	12/25/2021
N048295-001B	MW-28-025-Q421	Groundwater	12/8/2021 11:05:00 AM	12/8/2021	12/25/2021
N048295-001C	MW-28-025-Q421	Groundwater	12/8/2021 11:05:00 AM	12/8/2021	12/25/2021
N048295-001D	MW-28-025-Q421	Groundwater	12/8/2021 11:05:00 AM	12/8/2021	12/25/2021
N048295-002A	MW-28-025-EB-Q421	Groundwater	12/8/2021 11:00:00 AM	12/8/2021	12/25/2021
N048295-003A	MW-28-090-Q421	Groundwater	12/8/2021 10:34:00 AM	12/8/2021	12/25/2021
N048295-003B	MW-28-090-Q421	Groundwater	12/8/2021 10:34:00 AM	12/8/2021	12/25/2021
N048295-003C	MW-28-090-Q421	Groundwater	12/8/2021 10:34:00 AM	12/8/2021	12/25/2021
N048295-003D	MW-28-090-Q421	Groundwater	12/8/2021 10:34:00 AM	12/8/2021	12/25/2021
N048295-004A	MW-28-090-EB-Q421	Groundwater	12/8/2021 10:29:00 AM	12/8/2021	12/25/2021
N048295-005A	MW-44-070-Q421	Groundwater	12/8/2021 1:04:00 PM	12/8/2021	12/25/2021
N048295-005B	MW-44-070-Q421	Groundwater	12/8/2021 1:04:00 PM	12/8/2021	12/25/2021
N048295-005C	MW-44-070-Q421	Groundwater	12/8/2021 1:04:00 PM	12/8/2021	12/25/2021
N048295-005D	MW-44-070-Q421	Groundwater	12/8/2021 1:04:00 PM	12/8/2021	12/25/2021
N048295-006A	MW-44-070-EB-Q421	Groundwater	12/8/2021 12:59:00 PM	12/8/2021	12/25/2021
N048295-007A	MW-44-115-Q421	Groundwater	12/8/2021 11:56:00 AM	12/8/2021	12/25/2021
N048295-007B	MW-44-115-Q421	Groundwater	12/8/2021 11:56:00 AM	12/8/2021	12/25/2021
N048295-007C	MW-44-115-Q421	Groundwater	12/8/2021 11:56:00 AM	12/8/2021	12/25/2021
N048295-007D	MW-44-115-Q421	Groundwater	12/8/2021 11:56:00 AM	12/8/2021	12/25/2021
N048295-008A	MW-44-125-Q421	Groundwater	12/8/2021 12:27:00 PM	12/8/2021	12/25/2021
N048295-008B	MW-44-125-Q421	Groundwater	12/8/2021 12:27:00 PM	12/8/2021	12/25/2021
N048295-008C	MW-44-125-Q421	Groundwater	12/8/2021 12:27:00 PM	12/8/2021	12/25/2021
N048295-008D	MW-44-125-Q421	Groundwater	12/8/2021 12:27:00 PM	12/8/2021	12/25/2021
N048295-009A	MW-44-125-EB-Q421	Groundwater	12/8/2021 12:22:00 PM	12/8/2021	12/25/2021
N048295-010A	MW-46-175-Q421	Groundwater	12/8/2021 9:17:00 AM	12/8/2021	12/25/2021
N048295-010B	MW-46-175-Q421	Groundwater	12/8/2021 9:17:00 AM	12/8/2021	12/25/2021
N048295-010C	MW-46-175-Q421	Groundwater	12/8/2021 9:17:00 AM	12/8/2021	12/25/2021
N048295-010D	MW-46-175-Q421	Groundwater	12/8/2021 9:17:00 AM	12/8/2021	12/25/2021
N048295-011A	MW-46-205-Q421	Groundwater	12/8/2021 8:32:00 AM	12/8/2021	12/25/2021

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048295
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048295-011B	MW-46-205-Q421	Groundwater	12/8/2021 8:32:00 AM	12/8/2021	12/25/2021
N048295-011C	MW-46-205-Q421	Groundwater	12/8/2021 8:32:00 AM	12/8/2021	12/25/2021
N048295-011D	MW-46-205-Q421	Groundwater	12/8/2021 8:32:00 AM	12/8/2021	12/25/2021
N048295-012A	MW-933-Q421	Groundwater	12/8/2021 8:42:00 AM	12/8/2021	12/25/2021
N048295-012B	MW-933-Q421	Groundwater	12/8/2021 8:42:00 AM	12/8/2021	12/25/2021
N048295-012C	MW-933-Q421	Groundwater	12/8/2021 8:42:00 AM	12/8/2021	12/25/2021
N048295-012D	MW-933-Q421	Groundwater	12/8/2021 8:42:00 AM	12/8/2021	12/25/2021
N048295-013A	MW-90-031-Q421	Groundwater	12/8/2021 2:02:00 PM	12/8/2021	12/25/2021
N048295-013B	MW-90-031-Q421	Groundwater	12/8/2021 2:02:00 PM	12/8/2021	12/25/2021
N048295-013C	MW-90-031-Q421	Groundwater	12/8/2021 2:02:00 PM	12/8/2021	12/25/2021
N048295-013D	MW-90-031-Q421	Groundwater	12/8/2021 2:02:00 PM	12/8/2021	12/25/2021
N048295-014A	EB-733-Q421	Groundwater	12/8/2021 3:30:00 PM	12/8/2021	12/25/2021

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-001

Client Sample ID: MW-28-025-Q421
Collection Date: 12/8/2021 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B** QC Batch: **R158791**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/10/2021 01:14 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP8_211212C** QC Batch: **90612**				PrepDate: **12/9/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/13/2021 12:00 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:**	MW-28-025-EB-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 11:00:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211209B** QC Batch: **R158791** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/10/2021 01:33 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: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-003

Client Sample ID: MW-28-090-Q421
Collection Date: 12/8/2021 10:34:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B** QC Batch: **R158791**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/10/2021 02:11 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP8_211212C** QC Batch: **90612**				PrepDate: **12/9/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/13/2021 12:11 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:**	MW-28-090-EB-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 10:29:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B**	QC Batch: **R158791**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/10/2021 02:30 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:**	MW-44-070-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 1:04:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211209B** QC Batch: **R158791** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/10/2021 02:49 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP8_211213A** QC Batch: **90612** PrepDate: **12/9/2021** Analyst: **CEI**							
Chromium	ND	0.035	1.0		µg/L	1	12/13/2021 10:49 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:**	MW-44-070-EB-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 12:59:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B**	QC Batch: **R158791**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/10/2021 03:08 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:**	MW-44-115-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 11:56:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211209B** QC Batch: **R158791** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	1.8	0.13	1.0		µg/L	5	12/10/2021 06:55 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP8_211213A** QC Batch: **90612** PrepDate: **12/9/2021** Analyst: **CEI**							
Chromium	2.2	0.035	1.0		µg/L	1	12/13/2021 10:55 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:**	MW-44-125-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 12:27:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211215A** QC Batch: **R158907**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/15/2021 02:59 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211213A** QC Batch: **90612**				PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	1.9	0.035	1.0		µg/L	1	12/13/2021 11:01 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:**	MW-44-125-EB-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 12:22:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B**	QC Batch: **R158791**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/10/2021 04:23 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-010

Client Sample ID: MW-46-175-Q421
Collection Date: 12/8/2021 9:17:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B** QC Batch: **R158791**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	2.1	0.13	1.0		µg/L	5	12/10/2021 07:16 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP8_211213A** QC Batch: **90612**				PrepDate: **12/9/2021**			Analyst: **CEI**
Chromium	36	0.035	1.0		µg/L	1	12/13/2021 11:13 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-011

Client Sample ID: MW-46-205-Q421
Collection Date: 12/8/2021 8:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B** QC Batch: **R158791**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/10/2021 07:35 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211213A** QC Batch: **90612**				PrepDate:	**12/9/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/13/2021 11:25 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-012

Client Sample ID: MW-933-Q421
Collection Date: 12/8/2021 8:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B** QC Batch: **R158791**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/10/2021 08:31 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP8_211213A** QC Batch: **90612**				PrepDate: **12/9/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/13/2021 11:54 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-013

Client Sample ID: MW-90-031-Q421
Collection Date: 12/8/2021 2:02:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211209B** QC Batch: **R158791**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/10/2021 08:50 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP8_211213A** QC Batch: **90612**				PrepDate: **12/9/2021**			Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/13/2021 12:06 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:**	EB-733-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 3:30:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211209B** QC Batch: **R158791** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/10/2021 06:17 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
Work Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **LCS-R158791**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **LCSW**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.858	0.20	5.000	0	97.2	90	110				

Sample ID: **MB-R158791**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **PBW**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458318**

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

Sample ID: **N048276-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.319	1.0	25.00	18.26	100	90	110				

Sample ID: **N048276-010AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.229	1.0	25.00	18.26	99.9	90	110	43.32	0.208	20	

Sample ID: **N048276-014ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2021**	SeqNo: **4458323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.885	0.20						7.839	0.580	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: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048276-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/9/2021** SeqNo: **4458324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.974	0.20	5.000	7.839	103	90	110				

Sample ID: **N048276-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.931	1.0	25.00	18.72	101	90	110				

Sample ID: **N048276-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5311.500	100	2500	2812	100	90	110				

Sample ID: **N048276-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.858	0.20	5.000	3.688	103	90	110				

Sample ID: **N048295-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458334**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.956	0.20	1.000	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: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048295-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.978	0.20	1.000	0	97.8	90	110				

Sample ID: **N048295-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.987	0.20	1.000	0	98.7	90	110				

Sample ID: **N048295-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.983	0.20	1.000	0	98.3	90	110				

Sample ID: **N048295-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458344**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.009	0.20	1.000	0	101	90	110				

Sample ID: **N048295-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.987	0.20	1.000	0	98.6	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: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048295-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458350**

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: **N048295-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.992	0.20	1.000	0	99.2	90	110				

Sample ID: **N048295-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.475	1.0	5.000	1.807	93.4	90	110				

Sample ID: **N048295-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.056	1.0	5.000	2.109	98.9	90	110				

Sample ID: **N048295-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158791**
Client ID: **ZZZZZZ** Batch ID: **R158791** TestNo: **EPA 218.6** Analysis Date: **12/10/2021** SeqNo: **4458362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.810	1.0	5.000	0	96.2	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: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048294-019AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	138.510	2.0	50.00	87.90	101	90	110				

Sample ID: **N048295-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.075	1.0	5.000	0	101	90	110				

Sample ID: **N048295-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.901	1.0	5.000	0	98.0	90	110				

Sample ID: **N048294-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158791**
Client ID: **ZZZZZZ**	Batch ID: **R158791**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4458372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.045	1.0	25.00	14.68	97.5	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: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R158907**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **PBW**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465399**

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-R158907**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **LCSW**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.012	0.20	5.000	0	100	90	110				

Sample ID: **N048308-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **ZZZZZZ**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.042	1.0	5.000	0	101	90	110				

Sample ID: **N048378-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **ZZZZZZ**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465404**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075	0.20	1.000	0	107	90	110				

Sample ID: **N048378-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **ZZZZZZ**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.054	0.20	1.000	0	105	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: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048378-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **ZZZZZZ**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.026	0.20	1.000	0	103	90	110				

Sample ID: **N048378-002AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **ZZZZZZ**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.041	0.20	1.000	0	104	90	110	1.054	1.23	20	

Sample ID: **N048378-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **ZZZZZZ**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465412**

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

Sample ID: **N048378-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **ZZZZZZ**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465414**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.916	1.0	5.000	0	98.3	90	110				

Sample ID: **N048378-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **ZZZZZZ**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465418**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.836	1.0	5.000	0	96.7	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: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048295-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158907**
Client ID: **ZZZZZZ**	Batch ID: **R158907**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2021**	SeqNo: **4465420**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.830	1.0	5.000	0	96.6	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: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **MB-90612**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158883**
Client ID: **PBW**	Batch ID: **90612**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/12/2021**	SeqNo: **4464018**

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

Sample ID: **LCS-90612**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158883**
Client ID: **LCSW**	Batch ID: **90612**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/12/2021**	SeqNo: **4464019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.978	1.0	10.00	0	99.8	85	115				

Sample ID: **N048275-001CMS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158883**
Client ID: **ZZZZZZ**	Batch ID: **90612**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/12/2021**	SeqNo: **4464025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.192	1.0	10.00	0.1091	90.8	75	125				

Sample ID: **N048275-001CMSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158883**
Client ID: **ZZZZZZ**	Batch ID: **90612**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/12/2021**	SeqNo: **4464029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.324	1.0	10.00	0.1091	92.1	75	125	9.192	1.43	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:**	MW-28-025-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 11:05:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/11/2021 04:04 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:**	MW-28-090-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 10:34:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/11/2021 04:19 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:**	MW-44-070-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 1:04:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/11/2021 04:35 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:**	MW-44-115-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 11:56:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/11/2021 04:51 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:**	MW-44-125-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 12:27:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/11/2021 05:06 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:**	MW-46-175-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 9:17:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/11/2021 05:22 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:**	MW-46-205-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 8:32:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/11/2021 05:37 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:**	MW-933-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 8:42:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/11/2021 05:53 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:**	MW-90-031-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 2:02:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211211A**	QC Batch: **R158819**			PrepDate:			Analyst: **admin**
Organic Carbon, Total	1.8	0.084	1.0		mg/L	1	12/11/2021 06:09 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: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID: **MB-R158819**	SampType: **MBLK**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158819**
Client ID: **PBW**	Batch ID: **R158819**	TestNo: **SM 5310C**		Analysis Date: **12/11/2021**	SeqNo: **4460656**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID: **LCS-R158819**	SampType: **LCS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158819**
Client ID: **LCSW**	Batch ID: **R158819**	TestNo: **SM 5310C**		Analysis Date: **12/11/2021**	SeqNo: **4460657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.575	1.0	5.000	0	91.5	85	115				

Sample ID: **N048275-001D-MS**	SampType: **MS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158819**
Client ID: **ZZZZZZ**	Batch ID: **R158819**	TestNo: **SM 5310C**		Analysis Date: **12/11/2021**	SeqNo: **4460659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	7.351	1.0	5.000	2.234	102	75	125				

Sample ID: **N048275-001D-MSD**	SampType: **MSD**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **158819**
Client ID: **ZZZZZZ**	Batch ID: **R158819**	TestNo: **SM 5310C**		Analysis Date: **12/11/2021**	SeqNo: **4460660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	7.305	1.0	5.000	2.234	101	75	125	7.351	0.626	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:**	MW-28-025-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 11:05:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**				PrepDate:	**12/10/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/19/2021 05:51 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-003

Client Sample ID: MW-28-090-Q421
Collection Date: 12/8/2021 10:34:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**				PrepDate:	**12/10/2021**	Analyst: **DJ**
Iron	590	13	20		µg/L	1	12/19/2021 05:55 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:**	MW-44-070-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 1:04:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**				PrepDate:	**12/10/2021**	Analyst: **DJ**
Iron	140	13	20		µg/L	1	12/19/2021 05:59 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-007

Client Sample ID: MW-44-115-Q421
Collection Date: 12/8/2021 11:56:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**				PrepDate:	**12/10/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/19/2021 06:05 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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-Q421
Lab Order:	N048295	**Collection Date:**	12/8/2021 12:27:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048295-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**				PrepDate:	**12/10/2021**	Analyst: **DJ**
Iron	300	13	20		µg/L	1	12/19/2021 06:10 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-010

Client Sample ID: MW-46-175-Q421
Collection Date: 12/8/2021 9:17:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**				PrepDate:	**12/10/2021**	Analyst: **DJ**
Iron	200	13	20		µg/L	1	12/19/2021 06:14 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-011

Client Sample ID: MW-46-205-Q421
Collection Date: 12/8/2021 8:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211221A**	QC Batch: **90634**				PrepDate:	**12/10/2021**	Analyst: **DJ**
Iron	68	13	20		µg/L	1	12/21/2021 11:32 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-012

Client Sample ID: MW-933-Q421
Collection Date: 12/8/2021 8:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**				PrepDate:	**12/10/2021**	Analyst: **DJ**
Iron	ND	64	100		µg/L	5	12/19/2021 06:46 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-013

Client Sample ID: MW-90-031-Q421
Collection Date: 12/8/2021 2:02:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211219A**	QC Batch: **90634**				PrepDate:	**12/10/2021**	Analyst: **DJ**
Iron	7000	13	20		µg/L	1	12/19/2021 06:38 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: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-90634**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **12/10/2021**	RunNo: **159013**
Client ID: **PBW**	Batch ID: **90634**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2021**	SeqNo: **4471016**

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

Sample ID: **LCS-90634**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **12/10/2021**	RunNo: **159013**
Client ID: **LCSW**	Batch ID: **90634**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2021**	SeqNo: **4471017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	91.264	20	100.0	0	91.3	85	115				

Sample ID: **N048275-001C-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **159013**
Client ID: **ZZZZZZ**	Batch ID: **90634**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2021**	SeqNo: **4471023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	466.681	20	100.0	324.2	143	75	125				S

Sample ID: **N048275-001C-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **159013**
Client ID: **ZZZZZZ**	Batch ID: **90634**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2021**	SeqNo: **4471024**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	465.611	20	100.0	324.2	141	75	125	466.7	0.230	20	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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N048275-001C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **µg/L** Prep Date: RunNo: **159013**
Client ID: **ZZZZZZ** Batch ID: **90634** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2021** SeqNo: **4471022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	457.670	20	100.0	324.2	134	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		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-001

Client Sample ID: MW-28-025-Q421
Collection Date: 12/8/2021 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211212C**	QC Batch: **90612**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	0.40	0.050	0.10		µg/L	1	12/13/2021 12:00 AM
Barium	68	0.083	1.0		µg/L	1	12/13/2021 12:00 AM
Manganese	6.0	0.026	0.50		µg/L	1	12/13/2021 12:00 AM
Molybdenum	4.6	0.12	0.50		µg/L	1	12/13/2021 12:00 AM
Selenium	1.3	0.044	0.50		µg/L	1	12/13/2021 10:43 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-003

Client Sample ID: MW-28-090-Q421
Collection Date: 12/8/2021 10:34:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211212C**	QC Batch: **90612**				PrepDate:	**12/9/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/13/2021 12:11 AM
Barium	27	0.083	1.0		µg/L	1	12/13/2021 12:11 AM
Manganese	140	0.026	0.50		µg/L	1	12/13/2021 12:11 AM
Molybdenum	26	0.12	0.50		µg/L	1	12/13/2021 12:11 AM
Selenium	ND	0.044	0.50		µg/L	1	12/13/2021 12:11 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-005

Client Sample ID: MW-44-070-Q421
Collection Date: 12/8/2021 1:04:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211213A**	QC Batch: **90612**				PrepDate:	**12/9/2021**	Analyst: **CEI**
Arsenic	2.4	0.050	0.10		µg/L	1	12/13/2021 10:49 AM
Barium	31	0.083	1.0		µg/L	1	12/13/2021 12:53 AM
Manganese	120	0.026	0.50		µg/L	1	12/13/2021 10:49 AM
Molybdenum	7.6	0.12	0.50		µg/L	1	12/13/2021 12:53 AM
Selenium	ND	0.044	0.50		µg/L	1	12/13/2021 10:49 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-007

Client Sample ID: MW-44-115-Q421
Collection Date: 12/8/2021 11:56:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211213A**	QC Batch: **90612**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	0.86	0.050	0.10		µg/L	1	12/13/2021 10:55 AM
Barium	19	0.083	1.0		µg/L	1	12/13/2021 01:05 AM
Manganese	10	0.026	0.50		µg/L	1	12/13/2021 10:55 AM
Molybdenum	77	0.12	0.50		µg/L	1	12/13/2021 01:05 AM
Selenium	ND	0.044	0.50		µg/L	1	12/13/2021 10:55 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-008

Client Sample ID: MW-44-125-Q421
Collection Date: 12/8/2021 12:27:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211213A**	QC Batch: **90612**				PrepDate:	**12/9/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/13/2021 11:01 AM
Barium	55	0.083	1.0		µg/L	1	12/13/2021 01:17 AM
Manganese	390	0.13	2.5		µg/L	5	12/13/2021 11:07 AM
Molybdenum	230	0.60	2.5		µg/L	5	12/13/2021 01:23 AM
Selenium	ND	0.044	0.50		µg/L	1	12/13/2021 11:01 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-010

Client Sample ID: MW-46-175-Q421
Collection Date: 12/8/2021 9:17:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211213A**	QC Batch: **90612**				PrepDate:	**12/9/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/13/2021 11:13 AM
Barium	31	0.083	1.0		µg/L	1	12/13/2021 01:28 AM
Manganese	21	0.026	0.50		µg/L	1	12/13/2021 11:13 AM
Molybdenum	200	0.60	2.5		µg/L	5	12/13/2021 01:34 AM
Selenium	0.56	0.044	0.50		µg/L	1	12/13/2021 01:06 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-011

Client Sample ID: MW-46-205-Q421
Collection Date: 12/8/2021 8:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211213A**	QC Batch: **90612**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/13/2021 11:25 AM
Barium	33	0.083	1.0		µg/L	1	12/13/2021 01:40 AM
Manganese	46	0.026	0.50		µg/L	1	12/13/2021 11:25 AM
Molybdenum	340	0.60	2.5		µg/L	5	12/13/2021 02:04 AM
Selenium	0.82	0.044	0.50		µg/L	1	12/13/2021 01:18 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
Lab Order: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048295-012

Client Sample ID: MW-933-Q421
Collection Date: 12/8/2021 8:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211213A**	QC Batch: **90612**			PrepDate:		**12/9/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/13/2021 11:54 AM
Barium	33	0.083	1.0		µg/L	1	12/13/2021 02:10 AM
Manganese	42	0.026	0.50		µg/L	1	12/13/2021 11:54 AM
Molybdenum	340	0.60	2.5		µg/L	5	12/13/2021 02:16 AM
Selenium	0.86	0.044	0.50		µg/L	1	12/13/2021 11:54 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: MW-90-031-Q421
Lab Order: N048295
Collection Date: 12/8/2021 2:02:00 PM
Project: PG&E Topock - PCM, 30110373.4Q21GW
Matrix: GROUNDWATER
Lab ID: N048295-013

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211213A**	QC Batch: **90612**				PrepDate:	**12/9/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/13/2021 12:06 PM
Barium	97	0.083	1.0		µg/L	1	12/13/2021 02:22 AM
Manganese	250	0.13	2.5		µg/L	5	12/13/2021 12:12 PM
Molybdenum	18	0.12	0.50		µg/L	1	12/13/2021 02:22 AM
Selenium	ND	0.044	0.50		µg/L	1	12/13/2021 12:06 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: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **MB-90612** SampType: **MBLK** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/9/2021** RunNo: **158883**
Client ID: **PBW** Batch ID: **90612** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/12/2021** SeqNo: **4464089**

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									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-90612** SampType: **LCS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/9/2021** RunNo: **158883**
Client ID: **LCSW** Batch ID: **90612** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/12/2021** SeqNo: **4464090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.228	0.10	10.00	0	102	85	115				
Barium	10.027	1.0	10.00	0	100	85	115				
Manganese	98.951	0.50	100.0	0	99.0	85	115				
Molybdenum	10.245	0.50	10.00	0	102	85	115				
Selenium	10.010	0.50	10.00	0	100	85	115				

Sample ID: **N048275-001CMS** SampType: **MS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/9/2021** RunNo: **158883**
Client ID: **ZZZZZZ** Batch ID: **90612** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/12/2021** SeqNo: **4464096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	25.148	0.10	10.00	16.22	89.3	75	125				
Barium	81.586	1.0	10.00	73.52	80.7	75	125				
Molybdenum	18.383	0.50	10.00	7.654	107	75	125				
Selenium	8.885	0.50	10.00	0.08437	88.0	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: N048295
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N048275-001CMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158883**
Client ID: **ZZZZZZ**	Batch ID: **90612**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/12/2021**	SeqNo: **4464097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	218.132	2.5	100.0	119.7	98.5	75	125				

Sample ID: **N048275-001CMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158883**
Client ID: **ZZZZZZ**	Batch ID: **90612**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/12/2021**	SeqNo: **4464100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	25.143	0.10	10.00	16.22	89.3	75	125	25.15	0.0220	20	
Barium	81.143	1.0	10.00	73.52	76.3	75	125	81.59	0.544	20	
Molybdenum	18.380	0.50	10.00	7.654	107	75	125	18.38	0.0145	20	
Selenium	8.706	0.50	10.00	0.08437	86.2	75	125	8.885	2.04	20	

Sample ID: **N048275-001CMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/9/2021**	RunNo: **158883**
Client ID: **ZZZZZZ**	Batch ID: **90612**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/12/2021**	SeqNo: **4464101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	218.378	2.5	100.0	119.7	98.7	75	125	218.1	0.113	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

N048295

CHAIN OF CUSTODY RECORD

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ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

ASSET LABORATORIES

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@arcadis.com	Address:	Sample Receipt Condition: 1. Chilled ✓; 2. Headspace; 3. Container Intact X; 4. Seal Present; 5. IR number 3; 6. Method of Cooling: ICE; Sample Temp: 1.1, 1.6
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Luke Baumgarte		Phone: 949-727-1400, ext 200 Fax:	
Title: Field Tech	Phone: 916-786-3302 Fax:		
Signature: Date: 12/8/21	Sampled By: Luke Baumgarte		

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.

Signature: Date: 12/8/21

Project Name: PG&E Topock - PCM

Project Number: 30110373.4Q21GW

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

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500NO3) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Barium, Iron, Manganese (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium; (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium (500mL poly)	Total Organic Carbon (SM5310C); H2SO4 (3x40 mL VOA)	TRUE	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048295-01	MW-28-025-Q421	12/8/2021	11:05		X	X	X	X	X	X		E	6	P	BNS	
2	-02	MW-28-025-EB-Q421	12/8/2021	11:00		X							E	1	P	BNS	
3	-03	MW-28-090-Q421	12/8/2021	10:34		X	X	X	X	X	X		E	6	P	BNS	
4	-04	MW-28-090-EB-Q421	12/8/2021	~~10:29~~ 1029		X							E	1	P	BNS	
5	-05	MW-44-070-Q421	12/8/2021	13:04		X	X	X	X	X	X		E	6	P	BNS	
	-06	MW-44-070-EB-Q421	12/8/2021	12:59		X							E	1	P	BNS	
7	-07	MW-44-115-Q421	12/8/2021	11:56		X	X	X	X	X	X		E	6	P	BNS	
8	-08	MW-44-125-Q421	12/8/2021	12:27		X	X	X	X	X	X		E	6	P	BNS	
9	-09	MW-44-125-EB-Q421	12/8/2021	12:22		X							E	1	P	BNS	
10	-10	MW-46-175-Q421	12/8/2021	9:17		X	X	X	X	X	X		E	6	P	BNS	
11	-11	MW-46-205-Q421	12/8/2021	8:32		X	X	X	X	X	X		E	6	P	BNS	
12	-12	MW-933-Q421	12/8/2021	8:42		X	X	X	X	X	X		E	6	P	BNS	
13	-13	MW-90-031-Q421	12/8/2021	14:02		X	X	X	X	X	X		E	6	P	BNS	
14	-14	EB-733-Q421	12/8/2021	15:30		X							E	1	P	BNS	

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Luke Baumgarte	12/8/21 1710		12/8/21 @1710
	12/8/21 @1850		12/8/21 @1850

Turn Around Time (TAT)

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

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

Special Instruction:

Terms
1. All samples will be disposed of in 45 days 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 as 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: B (NH4)2SO4/NH4OH

Container Type: T=Tube; V=VOA; P=Pint; J=Jar; B=Tedlar; G=Glass; M=Metal; M=Metal; 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:	12/8/2021	Workorder:	N048295
Rep sample Temp (Deg C):	1.1/1.6	IR Gun ID:	3
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 By: GGJ GGarcia 12/9/2021

Reviewed By: MBC 12/15/2021

ASSET Laboratories

WORK ORDER Summary

15-Dec-21

WorkOrder: N048295

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/8/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048295-001A	MW-28-025-Q421	12/8/2021 11:05:00 AM	12/22/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048295-001B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048295-001C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048295-001D			12/22/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048295-002A	MW-28-025-EB-Q421	12/8/2021 11:00:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048295-003A	MW-28-090-Q421	12/8/2021 10:34:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048295-003B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048295-003C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048295-003D			12/22/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048295-004A	MW-28-090-EB-Q421	12/8/2021 10:29:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048295-005A	MW-44-070-Q421	12/8/2021 1:04:00 PM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048295-005B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048295-005C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

15-Dec-21

WorkOrder: N048295

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/8/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048295-005C	MW-44-070-Q421	12/8/2021 1:04:00 PM	12/22/2021	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048295-005D			12/22/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048295-006A	MW-44-070-EB-Q421	12/8/2021 12:59:00 PM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048295-007A	MW-44-115-Q421	12/8/2021 11:56:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048295-007B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048295-007C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048295-007D			12/22/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048295-008A	MW-44-125-Q421	12/8/2021 12:27:00 PM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048295-008B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048295-008C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

15-Dec-21

WorkOrder: N048295

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/8/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048295-008D	MW-44-125-Q421	12/8/2021 12:27:00 PM	12/22/2021	Groundwater	SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048295-009A	MW-44-125-EB-Q421	12/8/2021 12:22:00 PM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048295-010A	MW-46-175-Q421	12/8/2021 9:17:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048295-010B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048295-010C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048295-010D			12/22/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048295-011A	MW-46-205-Q421	12/8/2021 8:32:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048295-011B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048295-011C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048295-011D			12/22/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048295-012A	MW-933-Q421	12/8/2021 8:42:00 AM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048295-012B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048295-012C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

15-Dec-21

WorkOrder: N048295

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/8/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048295-012C	MW-933-Q421	12/8/2021 8:42:00 AM	12/22/2021	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048295-012D			12/22/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048295-013A	MW-90-031-Q421	12/8/2021 2:02:00 PM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048295-013B			12/22/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048295-013C			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048295-013D			12/22/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048295-014A	EB-733-Q421	12/8/2021 3:30:00 PM	12/22/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048295-015A	FOLDER	12/22/2021	12/22/2021		Folder	Folder	☐	☐	☐	LAB
			12/22/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/22/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Luke Baumgarte

09-Dec-21

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: SM4500-NO3F		
N048295-001B / MW-28-025-Q421	Groundwater	12/8/2021 11:05:00 AM	8OZP	1		
N048295-003B / MW-28-090-Q421	Groundwater	12/8/2021 10:34:00 AM	8OZP	1		
N048295-005B / MW-44-070-Q421	Groundwater	12/8/2021 1:04:00 PM	8OZP	1		
N048295-007B / MW-44-115-Q421	Groundwater	12/8/2021 11:56:00 AM	8OZP	1		
N048295-008B / MW-44-125-Q421	Groundwater	12/8/2021 12:27:00 PM	8OZP	1		
N048295-010B / MW-46-175-Q421	Groundwater	12/8/2021 9:17:00 AM	8OZP	1		
N048295-011B / MW-46-205-Q421	Groundwater	12/8/2021 8:32:00 AM	8OZP	1		
N048295-012B / MW-933-Q421	Groundwater	12/8/2021 8:42:00 AM	8OZP	1		
N048295-013B / MW-90-031-Q421	Groundwater	12/8/2021 2:02:00 PM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48295A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD requiremet Labspec7 edata.

GSO #: 555485757

	Date/Time		Date/Time
Relinquished by: YRJ	12/9/2021 1630	**Received by:**	
Relinquished by:		**Received by:**	

December 30, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048308

RE: PG&E Topock - RCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 09, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

The result of total dissolved chromium (1.5ug/L) differs with hexavalent chromium (0 ug/L) for sample N048308-007 (MW-72BR-200-Q421). This sample was analyzed at 1x dilution for Hexavalent Chromium however, however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Thus sample was reanalyzed and reported at dilution and the calculated result was 0.9ug/L. But since the on-column result is less than the reporting limit, the final result came out as none-detect (ND); results are comparable for both dilutions. Thus, reanalysis of the sample was not necessary.

Because the results for total dissolved chromium (1.9 ug/L) and hexavalent chromium (0 ug/L) for sample N048308-012 (MW-24A-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.3 ug/L) and hexavalent chromium (0 ug/L) for sample N048308-013 (MW-24B-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.1 ug/L) and hexavalent chromium (0 ug/L) for sample N048308-014 (MW-919-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

The result of total dissolved chromium (1.5ug/L) differs with hexavalent chromium (0 ug/L) for sample N048308-007 (MW-72BR-200-Q421). This sample was analyzed at 1x dilution for Hexavalent Chromium however, however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Thus sample was reanalyzed and reported at dilution and the calculated result was 0.9ug/L. But since the on-column result is less than the reporting limit, the final result came out as none-detect (ND); results are comparable for both dilutions. Thus, reanalysis of the sample was not necessary.

Because the results for total dissolved chromium (1.9 ug/L) and hexavalent chromium (0 ug/L) for sample N048308-012 (MW-24A-Q421) 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 1.8 and 1.1 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.3 ug/L) and hexavalent chromium (0 ug/L) for sample N048308-013 (MW-24B-Q421) 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 1.3 and 0.95 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.1 ug/L) and hexavalent chromium (0 ug/L) for sample N048308-014 (MW-919-Q421) 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 1.1 and 0.91 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum in QC samples N048308-006CMS and N048308-006CMSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048308
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048308-001A	MW-58BR-Q421	Groundwater	12/9/2021 8:16:00 AM	12/9/2021	12/30/2021
N048308-001B	MW-58BR-Q421	Groundwater	12/9/2021 8:16:00 AM	12/9/2021	12/30/2021
N048308-001C	MW-58BR-Q421	Groundwater	12/9/2021 8:16:00 AM	12/9/2021	12/30/2021
N048308-002A	EB-737-Q421	Groundwater	12/9/2021 1:15:00 PM	12/9/2021	12/30/2021
N048308-003A	MW-70-105-Q421	Groundwater	12/9/2021 11:03:00 AM	12/9/2021	12/30/2021
N048308-003B	MW-70-105-Q421	Groundwater	12/9/2021 11:03:00 AM	12/9/2021	12/30/2021
N048308-003C	MW-70-105-Q421	Groundwater	12/9/2021 11:03:00 AM	12/9/2021	12/30/2021
N048308-004A	MW-70BR-225-Q421	Groundwater	12/9/2021 9:17:00 AM	12/9/2021	12/30/2021
N048308-004B	MW-70BR-225-Q421	Groundwater	12/9/2021 9:17:00 AM	12/9/2021	12/30/2021
N048308-004C	MW-70BR-225-Q421	Groundwater	12/9/2021 9:17:00 AM	12/9/2021	12/30/2021
N048308-005A	MW-70BR-287-Q421	Groundwater	12/9/2021 10:06:00 AM	12/9/2021	12/30/2021
N048308-005B	MW-70BR-287-Q421	Groundwater	12/9/2021 10:06:00 AM	12/9/2021	12/30/2021
N048308-006A	MW-72-080-Q421	Groundwater	12/9/2021 12:36:00 PM	12/9/2021	12/30/2021
N048308-006B	MW-72-080-Q421	Groundwater	12/9/2021 12:36:00 PM	12/9/2021	12/30/2021
N048308-006C	MW-72-080-Q421	Groundwater	12/9/2021 12:36:00 PM	12/9/2021	12/30/2021
N048308-007A	MW-72BR-200-Q421	Groundwater	12/9/2021 12:03:00 PM	12/9/2021	12/30/2021
N048308-007B	MW-72BR-200-Q421	Groundwater	12/9/2021 12:03:00 PM	12/9/2021	12/30/2021
N048308-008A	MW-73-080-Q421	Groundwater	12/9/2021 1:13:00 PM	12/9/2021	12/30/2021
N048308-008B	MW-73-080-Q421	Groundwater	12/9/2021 1:13:00 PM	12/9/2021	12/30/2021
N048308-008C	MW-73-080-Q421	Groundwater	12/9/2021 1:13:00 PM	12/9/2021	12/30/2021
N048308-009A	EB-736-Q421	Groundwater	12/9/2021 1:20:00 PM	12/9/2021	12/30/2021
N048308-010A	MW-11-Q421	Groundwater	12/9/2021 9:41:00 AM	12/9/2021	12/30/2021
N048308-010B	MW-11-Q421	Groundwater	12/9/2021 9:41:00 AM	12/9/2021	12/30/2021
N048308-011A	MW-11D-Q421	Groundwater	12/9/2021 10:21:00 AM	12/9/2021	12/30/2021
N048308-011B	MW-11D-Q421	Groundwater	12/9/2021 10:21:00 AM	12/9/2021	12/30/2021
N048308-012A	MW-24A-Q421	Groundwater	12/9/2021 11:14:00 AM	12/9/2021	12/30/2021
N048308-012B	MW-24A-Q421	Groundwater	12/9/2021 11:14:00 AM	12/9/2021	12/30/2021
N048308-012C	MW-24A-Q421	Groundwater	12/9/2021 11:14:00 AM	12/9/2021	12/30/2021
N048308-013A	MW-24B-Q421	Groundwater	12/9/2021 12:01:00 PM	12/9/2021	12/30/2021

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048308
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048308-013B	MW-24B-Q421	Groundwater	12/9/2021 12:01:00 PM	12/9/2021	12/30/2021
N048308-013C	MW-24B-Q421	Groundwater	12/9/2021 12:01:00 PM	12/9/2021	12/30/2021
N048308-014A	MW-919-Q421	Groundwater	12/9/2021 12:11:00 PM	12/9/2021	12/30/2021
N048308-014B	MW-919-Q421	Groundwater	12/9/2021 12:11:00 PM	12/9/2021	12/30/2021
N048308-014C	MW-919-Q421	Groundwater	12/9/2021 12:11:00 PM	12/9/2021	12/30/2021
N048308-015A	MW-23-060-Q421	Groundwater	12/9/2021 8:47:00 AM	12/9/2021	12/30/2021
N048308-015B	MW-23-060-Q421	Groundwater	12/9/2021 8:47:00 AM	12/9/2021	12/30/2021
N048308-015C	MW-23-060-Q421	Groundwater	12/9/2021 8:47:00 AM	12/9/2021	12/30/2021
N048308-016A	MW-918-Q421	Groundwater	12/9/2021 8:57:00 AM	12/9/2021	12/30/2021
N048308-016B	MW-918-Q421	Groundwater	12/9/2021 8:57:00 AM	12/9/2021	12/30/2021
N048308-016C	MW-918-Q421	Groundwater	12/9/2021 8:57:00 AM	12/9/2021	12/30/2021
N048308-017A	MW-23-080-Q421	Groundwater	12/9/2021 8:21:00 AM	12/9/2021	12/30/2021
N048308-017B	MW-23-080-Q421	Groundwater	12/9/2021 8:21:00 AM	12/9/2021	12/30/2021
N048308-017C	MW-23-080-Q421	Groundwater	12/9/2021 8:21:00 AM	12/9/2021	12/30/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 8:16:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211210A**	QC Batch: **R158832**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	6.4	0.025	0.20		µg/L	1	12/10/2021 06:55 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211216C**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	7.3	0.035	1.0		µg/L	1	12/16/2021 06:44 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:**	EB-737-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 1:15:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211210A** QC Batch: **R158832** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/10/2021 01:09 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:**	MW-70-105-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 11:03:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211210A**	QC Batch: **R158832**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	210	0.50	4.0		µg/L	20	12/10/2021 01:28 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211216C**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	220	0.18	5.0		µg/L	5	12/16/2021 08:31 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:**	MW-70BR-225-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 9:17:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211210A**	QC Batch: **R158832**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1400	5.0	40		µg/L	200	12/10/2021 02:40 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211220A**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	1400	0.88	25		µg/L	25	12/20/2021 09:03 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:**	MW-70BR-287-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 10:06:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211210A**	QC Batch: **R158832**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	350	1.3	10		µg/L	50	12/10/2021 02:59 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211216C**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	340	0.18	5.0		µg/L	5	12/16/2021 08:55 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:**	MW-72-080-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 12:36:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211210A** QC Batch: **R158832**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	71	0.25	2.0		µg/L	10	12/10/2021 12:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211216C** QC Batch: **90639**				PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	66	0.035	1.0		µg/L	1	12/16/2021 07:08 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:**	MW-72BR-200-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 12:03:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211210A**	QC Batch: **R158832**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/10/2021 03:37 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211216C**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	1.5	0.035	1.0		µg/L	1	12/16/2021 09:01 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:**	MW-73-080-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 1:13:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211213A** QC Batch: **R158872**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	9.7	0.025	0.20		µg/L	1	12/13/2021 06:55 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211216C** QC Batch: **90639**				PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	11	0.035	1.0		µg/L	1	12/16/2021 09:13 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:**	EB-736-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 1:20:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211210A**	QC Batch: **R158832**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/10/2021 04:34 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:**	MW-11-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 9:41:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211210A**	QC Batch: **R158832**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	170	1.3	10		µg/L	50	12/10/2021 02:21 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211216C**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	180	0.035	1.0		µg/L	1	12/16/2021 09:25 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	**Client Sample ID:**	MW-11D-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 10:21:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211210A**	QC Batch: **R158832**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	150	1.3	10		µg/L	50	12/10/2021 04:52 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211216C**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	150	0.035	1.0		µg/L	1	12/16/2021 09:49 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:**	MW-24A-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 11:14:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211210A**	QC Batch: **R158832**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/10/2021 05:11 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211216C**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	1.9	0.035	1.0		µg/L	1	12/16/2021 10:01 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:**	MW-24B-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 12:01:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211214A**	QC Batch: **R158902**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/14/2021 06:30 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211216C**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	1.3	0.035	1.0		µg/L	1	12/16/2021 10:13 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:**	MW-919-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 12:11:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211215A**	QC Batch: **R158907**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/15/2021 11:31 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211216C**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	1.1	0.035	1.0		µg/L	1	12/16/2021 10:25 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	**Client Sample ID:**	MW-23-060-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 8:47:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211210A** QC Batch: **R158832**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	36	0.13	1.0		µg/L	5	12/10/2021 06:27 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211216C** QC Batch: **90639**				PrepDate: **12/12/2021**			Analyst: **CEI**
Chromium	35	0.035	1.0		µg/L	1	12/16/2021 10:37 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:**	MW-918-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 8:57:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211213A** QC Batch: **R158872**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	36	0.13	1.0		µg/L	5	12/13/2021 04:52 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211216C** QC Batch: **90639**				PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	34	0.035	1.0		µg/L	1	12/16/2021 11:00 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:**	MW-23-080-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 8:21:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211213A**	QC Batch: **R158872**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/13/2021 05:58 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211216C**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/16/2021 11:12 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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158832	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	PBW	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461155

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-R158832	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	LCSW	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461156

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.985	0.20	5.000	0	99.7	90	110				

Sample ID	N048277-001BDUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	ZZZZZZ	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461158

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	930.040	40						902.7	2.98	20	

Sample ID	N048308-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	ZZZZZZ	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461167

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	120.004	2.0	50.00	71.19	97.6	90	110				

Sample ID	N048308-006AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	ZZZZZZ	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461168

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	121.106	2.0	50.00	71.19	99.8	90	110	120.0	0.914	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048308-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	ZZZZZZ	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461170

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.979	0.20	1.000	0	97.9	90	110				

Sample ID	N048308-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	ZZZZZZ	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461172

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	311.762	4.0	100.0	209.6	102	90	110				

Sample ID	N048308-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	ZZZZZZ	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461177

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	411.100	10	250.0	166.6	97.8	90	110				

Sample ID	N048308-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	ZZZZZZ	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461179

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2323.320	40	1000	1354	97.0	90	110				

Sample ID	N048308-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	ZZZZZZ	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461181

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	594.555	10	250.0	348.0	98.6	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048308-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	ZZZZZZ	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461183

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.731	1.0	5.000	0.8960	96.7	90	110				

Sample ID	N048308-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	ZZZZZZ	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461187

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	0	102	90	110				

Sample ID	N048308-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	ZZZZZZ	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461189

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	397.105	10	250.0	151.2	98.3	90	110				

Sample ID	N048308-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	ZZZZZZ	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461191

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.028	0.20	1.000	0	103	90	110				

Sample ID	N048308-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158832
Client ID:	ZZZZZZ	Batch ID:	R158832	TestNo:	EPA 218.6			Analysis Date:	12/10/2021	SeqNo:	4461195

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	59.903	1.0	25.00	35.59	97.3	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048308-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158832**
Client ID: **ZZZZZZ**	Batch ID: **R158832**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4461196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.369	0.20	5.000	6.412	99.1	90	110				

Sample ID **N048293-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158832**
Client ID: **ZZZZZZ**	Batch ID: **R158832**	TestNo: **EPA 218.6**		Analysis Date: **12/10/2021**	SeqNo: **4461199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2183.520	40	1000	1195	98.8	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158872	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158872		
Client ID:	PBW	Batch ID:	R158872	TestNo:	EPA 218.6			Analysis Date:	12/13/2021	SeqNo:	4463147		
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-R158872	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158872		
Client ID:	LCSW	Batch ID:	R158872	TestNo:	EPA 218.6			Analysis Date:	12/13/2021	SeqNo:	4463148		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.954	0.20	5.000	0	99.1	90	110						

Sample ID	N048318-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158872		
Client ID:	ZZZZZZ	Batch ID:	R158872	TestNo:	EPA 218.6			Analysis Date:	12/13/2021	SeqNo:	4463150		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	871.760	20	500.0	377.7	98.8	90	110						

Sample ID	N048318-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158872		
Client ID:	ZZZZZZ	Batch ID:	R158872	TestNo:	EPA 218.6			Analysis Date:	12/13/2021	SeqNo:	4463151		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	864.900	20	500.0	377.7	97.4	90	110	871.8	0.790	20			

Sample ID	N048318-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158872		
Client ID:	ZZZZZZ	Batch ID:	R158872	TestNo:	EPA 218.6			Analysis Date:	12/13/2021	SeqNo:	4463153		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	607.785	10	250.0	365.6	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048318-003AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	604.055	10	250.0	365.6	95.4	90	110	607.8	0.616	20	

Sample ID **N048318-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	434.565	10	250.0	197.3	94.9	90	110				

Sample ID **N048318-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	58.417	1.0	25.00	33.59	99.3	90	110				

Sample ID **N048318-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	545.120	20	500.0	63.42	96.3	90	110				

Sample ID **N048318-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11729.200	200	5000	6951	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048318-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158872
Client ID:	ZZZZZZ	Batch ID:	R158872	TestNo:	EPA 218.6			Analysis Date:	12/13/2021	SeqNo:	4463169

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.973	0.20	1.000	0	97.2	90	110				

Sample ID	N048318-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158872
Client ID:	ZZZZZZ	Batch ID:	R158872	TestNo:	EPA 218.6			Analysis Date:	12/13/2021	SeqNo:	4463170

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.959	0.20	1.000	0	95.9	90	110				

Sample ID	N048318-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158872
Client ID:	ZZZZZZ	Batch ID:	R158872	TestNo:	EPA 218.6			Analysis Date:	12/13/2021	SeqNo:	4463172

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.310	1.0	5.000	0	106	90	110				

Sample ID	N048318-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158872
Client ID:	ZZZZZZ	Batch ID:	R158872	TestNo:	EPA 218.6			Analysis Date:	12/13/2021	SeqNo:	4463174

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.048	1.0	5.000	0	101	90	110				

Sample ID	N048308-016ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158872
Client ID:	ZZZZZZ	Batch ID:	R158872	TestNo:	EPA 218.6			Analysis Date:	12/13/2021	SeqNo:	4463176

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	35.801	1.0						35.79	0.0293	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048308-016AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158872
Client ID:	ZZZZZZ	Batch ID:	R158872	TestNo:	EPA 218.6			Analysis Date:	12/13/2021	SeqNo:	4463179

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	60.223	1.0	25.00	35.79	97.7	90	110				

Sample ID	N048308-017AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158872
Client ID:	ZZZZZZ	Batch ID:	R158872	TestNo:	EPA 218.6			Analysis Date:	12/13/2021	SeqNo:	4463181

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.946	1.0	5.000	0	98.9	90	110				

Sample ID	N048308-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158872
Client ID:	ZZZZZZ	Batch ID:	R158872	TestNo:	EPA 218.6			Analysis Date:	12/13/2021	SeqNo:	4463185

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.731	0.20	5.000	9.719	100	90	110				

Sample ID	N048318-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158872
Client ID:	ZZZZZZ	Batch ID:	R158872	TestNo:	EPA 218.6			Analysis Date:	12/13/2021	SeqNo:	4463187

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	113.336	2.0	50.00	63.42	99.8	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158902	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158902		
Client ID:	PBW	Batch ID:	R158902	TestNo:	EPA 218.6			Analysis Date:	12/14/2021	SeqNo:	4465178		
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-R158902	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158902		
Client ID:	LCSW	Batch ID:	R158902	TestNo:	EPA 218.6			Analysis Date:	12/14/2021	SeqNo:	4465179		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.874	0.20	5.000	0	97.5	90	110						

Sample ID	N048350-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158902		
Client ID:	ZZZZZZ	Batch ID:	R158902	TestNo:	EPA 218.6			Analysis Date:	12/14/2021	SeqNo:	4465181		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	9.477	0.20	5.000	4.368	102	90	110						

Sample ID	N048350-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158902		
Client ID:	ZZZZZZ	Batch ID:	R158902	TestNo:	EPA 218.6			Analysis Date:	12/14/2021	SeqNo:	4465185		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	13.841	0.20	5.000	8.722	102	90	110						

Sample ID	N048350-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158902		
Client ID:	ZZZZZZ	Batch ID:	R158902	TestNo:	EPA 218.6			Analysis Date:	12/14/2021	SeqNo:	4465190		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	0.969	0.20	1.000	0	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N048350-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.996	0.20	1.000	0	99.6	90	110				

Sample ID **N048351-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	41.625	1.0	25.00	17.11	98.0	90	110				

Sample ID **N048351-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2978.940	40	1000	1989	99.0	90	110				

Sample ID **N048351-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.320	1.0	25.00	17.11	101	90	110	41.62	1.65	20	

Sample ID **N048350-003ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.899	0.20						8.722	2.01	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048351-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158902
Client ID:	ZZZZZZ	Batch ID:	R158902	TestNo:	EPA 218.6			Analysis Date:	12/14/2021	SeqNo:	4465204

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4359.650	100	2500	1890	98.8	90	110				

Sample ID	N048351-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158902
Client ID:	ZZZZZZ	Batch ID:	R158902	TestNo:	EPA 218.6			Analysis Date:	12/14/2021	SeqNo:	4465206

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.415	1.0	25.00	14.47	99.8	90	110				

Sample ID	N048351-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158902
Client ID:	ZZZZZZ	Batch ID:	R158902	TestNo:	EPA 218.6			Analysis Date:	12/14/2021	SeqNo:	4465208

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.990	0.20	1.000	0	99.0	90	110				

Sample ID	N048350-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158902
Client ID:	ZZZZZZ	Batch ID:	R158902	TestNo:	EPA 218.6			Analysis Date:	12/14/2021	SeqNo:	4465212

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.794	1.0	5.000	0	95.9	90	110				

Sample ID	N048351-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158902
Client ID:	ZZZZZZ	Batch ID:	R158902	TestNo:	EPA 218.6			Analysis Date:	12/14/2021	SeqNo:	4465216

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	38.426	1.0	25.00	13.53	99.6	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048308-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158902
Client ID:	ZZZZZZ	Batch ID:	R158902	TestNo:	EPA 218.6			Analysis Date:	12/14/2021	SeqNo:	4465218

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.892	1.0	5.000	0	97.8	90	110				

Sample ID	N048351-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158902
Client ID:	ZZZZZZ	Batch ID:	R158902	TestNo:	EPA 218.6			Analysis Date:	12/14/2021	SeqNo:	4465222

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	92.299	2.0	50.00	43.11	98.4	90	110				

Sample ID	N048350-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158902
Client ID:	ZZZZZZ	Batch ID:	R158902	TestNo:	EPA 218.6			Analysis Date:	12/14/2021	SeqNo:	4465223

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.154	0.20	1.000	1.173	98.0	90	110				

Sample ID	N048351-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158902
Client ID:	ZZZZZZ	Batch ID:	R158902	TestNo:	EPA 218.6			Analysis Date:	12/14/2021	SeqNo:	4465268

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.534	1.0	5.000	4.740	95.9	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R158907	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907		
Client ID:	PBW	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465399		
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-R158907	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907		
Client ID:	LCSW	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465400		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.012	0.20	5.000	0	100	90	110						

Sample ID	N048308-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907		
Client ID:	ZZZZZZ	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465402		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.042	1.0	5.000	0	101	90	110						

Sample ID	N048378-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907		
Client ID:	ZZZZZZ	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465404		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.075	0.20	1.000	0	107	90	110						

Sample ID	N048378-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907		
Client ID:	ZZZZZZ	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465406		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.054	0.20	1.000	0	105	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048378-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907
Client ID:	ZZZZZZ	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.026	0.20	1.000	0	103	90	110				

Sample ID	N048378-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907
Client ID:	ZZZZZZ	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.041	0.20	1.000	0	104	90	110	1.054	1.23	20	

Sample ID	N048378-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907
Client ID:	ZZZZZZ	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465412

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

Sample ID	N048378-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907
Client ID:	ZZZZZZ	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465414

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.916	1.0	5.000	0	98.3	90	110				

Sample ID	N048378-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907
Client ID:	ZZZZZZ	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465418

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.836	1.0	5.000	0	96.7	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N048295-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	158907
Client ID:	ZZZZZZ	Batch ID:	R158907	TestNo:	EPA 218.6			Analysis Date:	12/15/2021	SeqNo:	4465420

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.830	1.0	5.000	0	96.6	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	MB-90639	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2021	RunNo:	159002
Client ID:	PBW	Batch ID:	90639	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2021	SeqNo:	4469698

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.074	1.0									

Sample ID	LCS-90639	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2021	RunNo:	159002
Client ID:	LCSW	Batch ID:	90639	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2021	SeqNo:	4469699

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.952	1.0	10.00	0	99.5	85	115				

Sample ID	N048308-006CMS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2021	RunNo:	159002
Client ID:	ZZZZZZ	Batch ID:	90639	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2021	SeqNo:	4469715

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	76.425	1.0	10.00	65.63	108	75	125				

Sample ID	N048308-006CMSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2021	RunNo:	159002
Client ID:	ZZZZZZ	Batch ID:	90639	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2021	SeqNo:	4469717

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	76.832	1.0	10.00	65.63	112	75	125	76.42	0.532	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048308-001

Client Sample ID: MW-58BR-Q421
Collection Date: 12/9/2021 8:16:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211216D**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/16/2021 06:44 PM
Manganese	350	0.13	2.5		µg/L	5	12/16/2021 06:50 PM
Molybdenum	25	0.12	0.50		µg/L	1	12/16/2021 06:44 PM
Selenium	1.9	0.044	0.50		µg/L	1	12/16/2021 06:44 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:**	MW-70-105-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 11:03:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216D**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Arsenic	3.0	0.050	0.10		µg/L	1	12/16/2021 08:02 PM
Manganese	2.8	0.026	0.50		µg/L	1	12/16/2021 08:02 PM
Molybdenum	62	0.12	0.50		µg/L	1	12/16/2021 08:02 PM
Selenium	4.5	0.044	0.50		µg/L	1	12/16/2021 08:02 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:**	MW-70BR-225-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 9:17:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216D**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/16/2021 08:37 PM
Manganese	14	0.026	0.50		µg/L	1	12/16/2021 08:37 PM
Molybdenum	19	0.12	0.50		µg/L	1	12/16/2021 08:37 PM
Selenium	2.2	0.044	0.50		µg/L	1	12/16/2021 08:37 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:**	MW-70BR-287-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 10:06:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216D**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/16/2021 08:49 PM
Manganese	ND	0.026	0.50		µg/L	1	12/16/2021 08:49 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:**	MW-72-080-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 12:36:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216D**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Arsenic	4.4	0.050	0.10		µg/L	1	12/16/2021 07:08 PM
Manganese	31	0.026	0.50		µg/L	1	12/16/2021 07:08 PM
Molybdenum	72	0.12	0.50		µg/L	1	12/16/2021 07:08 PM
Selenium	1.5	0.044	0.50		µg/L	1	12/16/2021 07:08 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:**	MW-72BR-200-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 12:03:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216D**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Arsenic	7.6	0.050	0.10		µg/L	1	12/16/2021 09:01 PM
Manganese	51	0.026	0.50		µg/L	1	12/16/2021 09:01 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:**	MW-73-080-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 1:13:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216D**	QC Batch: **90639**				PrepDate:	**12/12/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/16/2021 09:13 PM
Manganese	18	0.026	0.50		µg/L	1	12/16/2021 09:13 PM
Molybdenum	35	0.12	0.50		µg/L	1	12/16/2021 09:13 PM
Selenium	3.8	0.044	0.50		µg/L	1	12/16/2021 09:13 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:**	MW-11-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 9:41:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211220A**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Arsenic	0.48	0.050	0.10		µg/L	1	12/20/2021 09:09 AM
Manganese	0.77	0.026	0.50		µg/L	1	12/16/2021 09:25 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	**Client Sample ID:**	MW-11D-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 10:21:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216D**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/16/2021 09:49 PM
Manganese	ND	0.026	0.50		µg/L	1	12/16/2021 09:49 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:**	MW-24A-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 11:14:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216D**	QC Batch: **90639**				PrepDate:	**12/12/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/16/2021 10:01 PM
Manganese	430	0.13	2.5		µg/L	5	12/16/2021 10:07 PM
Molybdenum	110	0.12	0.50		µg/L	1	12/16/2021 10:01 PM
Selenium	ND	0.044	0.50		µg/L	1	12/16/2021 10:01 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:**	MW-24B-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 12:01:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216D**	QC Batch: **90639**				PrepDate:	**12/12/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/16/2021 10:13 PM
Manganese	87	0.026	0.50		µg/L	1	12/16/2021 10:13 PM
Molybdenum	63	0.12	0.50		µg/L	1	12/16/2021 10:13 PM
Selenium	ND	0.044	0.50		µg/L	1	12/16/2021 10:13 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
Lab Order: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048308-014

Client Sample ID: MW-919-Q421
Collection Date: 12/9/2021 12:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211216D**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/16/2021 10:25 PM
Manganese	87	0.026	0.50		µg/L	1	12/16/2021 10:25 PM
Molybdenum	64	0.12	0.50		µg/L	1	12/16/2021 10:25 PM
Selenium	ND	0.044	0.50		µg/L	1	12/16/2021 10:25 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
Lab Order: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048308-015

Client Sample ID: MW-23-060-Q421
Collection Date: 12/9/2021 8:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211216D**	QC Batch: **90639**				PrepDate:	**12/12/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/16/2021 10:37 PM
Manganese	1.6	0.026	0.50		µg/L	1	12/16/2021 10:37 PM
Molybdenum	24	0.12	0.50		µg/L	1	12/16/2021 10:37 PM
Selenium	5.3	0.044	0.50		µg/L	1	12/16/2021 10:37 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
Lab Order: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048308-016

Client Sample ID: MW-918-Q421
Collection Date: 12/9/2021 8:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211216D**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/16/2021 11:00 PM
Manganese	1.5	0.026	0.50		µg/L	1	12/16/2021 11:00 PM
Molybdenum	23	0.12	0.50		µg/L	1	12/16/2021 11:00 PM
Selenium	5.0	0.044	0.50		µg/L	1	12/16/2021 11:00 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:**	MW-23-080-Q421
Lab Order:	N048308	**Collection Date:**	12/9/2021 8:21:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048308-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211216D**	QC Batch: **90639**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/16/2021 11:12 PM
Manganese	0.94	0.026	0.50		µg/L	1	12/16/2021 11:12 PM
Molybdenum	46	0.12	0.50		µg/L	1	12/16/2021 11:12 PM
Selenium	4.5	0.044	0.50		µg/L	1	12/16/2021 11:12 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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID	MB-90639	SampType:	MBLK	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/12/2021	RunNo:	159003
Client ID:	PBW	Batch ID:	90639	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2021	SeqNo:	4469867

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

Sample ID	LCS-90639	SampType:	LCS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/12/2021	RunNo:	159003
Client ID:	LCSW	Batch ID:	90639	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2021	SeqNo:	4469868

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.617	0.10	10.00	0	106	85	115				
Manganese	97.953	0.50	100.0	0	98.0	85	115				
Molybdenum	10.447	0.50	10.00	0	104	85	115				
Selenium	9.647	0.50	10.00	0	96.5	85	115				

Sample ID	N048308-006CMS	SampType:	MS	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/12/2021	RunNo:	159003
Client ID:	ZZZZZZ	Batch ID:	90639	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2021	SeqNo:	4469884

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	15.505	0.10	10.00	4.413	111	75	125				
Manganese	117.525	0.50	100.0	30.84	86.7	75	125				
Molybdenum	85.185	0.50	10.00	72.07	131	75	125				S
Selenium	10.951	0.50	10.00	1.516	94.3	75	125				

Sample ID	N048308-006CMSD	SampType:	MSD	TestCode:	6020_DIS_TP	Units:	µg/L	Prep Date:	12/12/2021	RunNo:	159003
Client ID:	ZZZZZZ	Batch ID:	90639	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2021	SeqNo:	4469886

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	15.138	0.10	10.00	4.413	107	75	125	15.50	2.39	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **N048308-006CMSD** SampType: **MSD** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/12/2021** RunNo: **159003**
Client ID: **ZZZZZZ** Batch ID: **90639** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2021** SeqNo: **4469886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	119.203	0.50	100.0	30.84	88.4	75	125	117.5	1.42	20	
Molybdenum	86.070	0.50	10.00	72.07	140	75	125	85.19	1.03	20	S
Selenium	11.330	0.50	10.00	1.516	98.1	75	125	10.95	3.40	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: N048308
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID **N048308-006C-PS** SampType: **PS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: RunNo: **159003**
Client ID: **ZZZZZZ** Batch ID: **90639** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/16/2021** SeqNo: **4469882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.759	0.10	10.00	4.413	103	80	120				
Manganese	117.513	0.50	100.0	30.84	86.7	80	120				
Molybdenum	84.285	0.50	10.00	72.07	122	80	120				S
Selenium	10.756	0.50	10.00	1.516	92.4	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		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement / QA/QC
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD; Geotracker; Labspec; Others ü; Specify: RWQCB; Global ID:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@arcadis.com	Address:	RTNE; RWQCB ü; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Riggie Top	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	
Title: Field Tech			
Signature: Date: 12/9/21	Sampled By: Riggie Top		

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 - RCM
Signature: Date: 12/9/21
Project Number: 30110373.4Q21GW

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

Sample Receipt Condition: 1. Chilled ✓; 2. Headspace; 3. Container Intact ✓; 4. Seal Present ✓; 5. IR number; 6. Method of Cooling: ICE; Sample Temp: 4.6 °C

Courier: ASSET; Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	125 mL poly: Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4	500mL poly: Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese,	500mL poly: Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium,	500mL poly: Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium	TRUE	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1																
2	N048308-01	MW-58BR-Q421	12/9/2021	8:16		X	X	X	X	X		E	3	P	BNS	
3	-02	EB-737-Q421	12/9/2021	13:15		X						E	1	P	BNS	
4	-03	MW-70-105-Q421	12/9/2021	11:03		X	X	X	X	X		E	3	P	BNS	
5	-04	MW-70BR-225-Q421	12/9/2021	9:17		X	X	X	X	X		E	3	P	BNS	
	-05	MW-70BR-287-Q421	12/9/2021	10:06		X		X	X			E	2	P	BNS	
7	-06	MW-72-080-Q421	12/9/2021	12:36		X	X	X	X	X		E	3	P	BNS	MS/MSD
8	-07	MW-72BR-200-Q421	12/9/2021	12:03		X		X	X			E	2	P	BNS	
9	-08	MW-73-080-Q421	12/9/2021	13:13		X	X	X	X	X		E	3	P	BNS	
10	-09	EB-736-Q421	12/9/2021	13:20		X						E	1	P	BNS	
11	-10	MW-11-Q421	12/9/2021	9:41		X		X	X			E	2	P	BNS	
12	-11	MW-11D-Q421	12/9/2021	10:21		X		X	X			E	2	P	BNS	
13	-12	MW-24A-Q421	12/9/2021	11:14		X	X	X	X	X		E	3	P	BNS	
14	-13	MW-24B-Q421	12/9/2021	12:01		X	X	X	X	X		E	3	P	BNS	

Relinquished by (Signature and Printed Name): Riggie Top Date/Time: 12/9/21 1515
Relinquished by (Signature and Printed Name): Ramon Alcantara Date/Time: 12/9/21 1515
Relinquished by (Signature and Printed Name): Ramon Alcantara Date/Time: 12/9/21 1754
Relinquished by (Signature and Printed Name): Ramon Alcantara Date/Time: 12/9/21 1754
Relinquished by (Signature and Printed Name): Date/Time:
Relinquished 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
X	E	= Routine 5-7 Workdays

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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 analyses, 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	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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: Excel EDD; Geotracker; Labspec; Others ü; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ü; CalTrans; LEVEL III ü; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled Y; 2. Headspace; 3. Container intact Y; 4. Seal Present N; 5. IR number 3; 6. Method of Cooling: ICE
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Sample Temp: 2.6°C
Submitted By: Reggie Tapp		Phone: 949-727-1400, ext 200 Fax:	
Title: Field Tech	Phone: 916-786-3302 Fax:		
Signature: Date: 12/9/21	Sampled By: Reggie Tapp		

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.

Signature: Date: 12/9/21

Project Name: PG&E Topock - RCM

Project Number: 30110373.4Q21GW

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

Courier: ASSET

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium (500mL poly)	TRUE	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048308-14	MW-919-Q421	12/9/2021	12:11		X	X	X	X	X		E	3	P	BNS	
2												E	2	P	BNS	
3	-15	MW-23-060-Q421	12/9/2021	8:47		X	X	X	X	X		E	3	P	BNS	
4	-16	MW-918-Q421	12/9/2021	8:57		X	X	X	X	X		E	3	P	BNS	
5	-17	MW-23-080-Q421	12/9/2021	8:21		X	X	X	X	X		E	3	P	BNS	
6																
7																
8																
9																
10																
11																
12																
13																
14																

Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
Reggie Tapp	12/9/21 1515	Jon Ponce Alcantara	12/9/21 1515
Jon Ponce Alcantara	12/9/21 1754	Jon Ponce Alcantara	12/9/21 1754

Turn Around Time (TAT)

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

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

Special Instruction:

Terms
1 All samples will be disposed in 45 days 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 analyses
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:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	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:	12/10/2021	Workorder:	N048308
Rep sample Temp (Deg C):	4.6	IR Gun ID:	3
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 By: GGJ GGarcia 12/10/2021

Reviewed By: MBC 12/18/2021

ASSET Laboratories

WORK ORDER Summary

10-Dec-21

WorkOrder: N048308

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/9/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048308-001A	MW-58BR-Q421	12/9/2021 8:16:00 AM	12/23/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-001B			12/23/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048308-001C			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048308-002A	EB-737-Q421	12/9/2021 1:15:00 PM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-003A	MW-70-105-Q421	12/9/2021 11:03:00 AM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-003B			12/23/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048308-003C			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048308-004A	MW-70BR-225-Q421	12/9/2021 9:17:00 AM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-004B			12/23/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048308-004C			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048308-005A	MW-70BR-287-Q421	12/9/2021 10:06:00 AM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-005B			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048308-006A	MW-72-080-Q421	12/9/2021 12:36:00 PM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☑	☐	WW

ASSET Laboratories

WORK ORDER Summary

10-Dec-21

WorkOrder: N048308

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/9/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048308-006B	MW-72-080-Q421	12/9/2021 12:36:00 PM	12/23/2021	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☑	☑	SUB
N048308-006C			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
N048308-007A	MW-72BR-200-Q421	12/9/2021 12:03:00 PM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-007B			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048308-008A	MW-73-080-Q421	12/9/2021 1:13:00 PM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-008B			12/23/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048308-008C			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048308-009A	EB-736-Q421	12/9/2021 1:20:00 PM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-010A	MW-11-Q421	12/9/2021 9:41:00 AM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-010B			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048308-011A	MW-11D-Q421	12/9/2021 10:21:00 AM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-011B			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

10-Dec-21

WorkOrder: N048308

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/9/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048308-011B	MW-11D-Q421	12/9/2021 10:21:00 AM	12/23/2021	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048308-012A	MW-24A-Q421	12/9/2021 11:14:00 AM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-012B			12/23/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048308-012C			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048308-013A	MW-24B-Q421	12/9/2021 12:01:00 PM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-013B			12/23/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048308-013C			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048308-014A	MW-919-Q421	12/9/2021 12:11:00 PM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-014B			12/23/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048308-014C			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048308-015A	MW-23-060-Q421	12/9/2021 8:47:00 AM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-015B			12/23/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048308-015C			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

10-Dec-21

WorkOrder: N048308

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/9/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048308-016A	MW-918-Q421	12/9/2021 8:57:00 AM	12/23/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-016B			12/23/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048308-016C			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048308-017A	MW-23-080-Q421	12/9/2021 8:21:00 AM	12/23/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048308-017B			12/23/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048308-017C			12/23/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/23/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048308-018A	FOLDER	12/23/2021	12/23/2021		Folder	Folder	☐	☐	☐	LAB
			12/23/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/23/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Riggie Tep

13-Dec-21

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**SM4500-NO3F**		
N048308-001B / MW-58BR-Q421	Groundwater	12/9/2021 8:16:00 AM	8OZP	1		
N048308-003B / MW-70-105-Q421	Groundwater	12/9/2021 11:03:00 AM	8OZP	1		
N048308-004B / MW-70BR-225-Q421	Groundwater	12/9/2021 9:17:00 AM	8OZP	1		
N048308-006B / MW-72-080-Q421	Groundwater	12/9/2021 12:36:00 PM	8OZP	1	(MS/MSD)	
N048308-008B / MW-73-080-Q421	Groundwater	12/9/2021 1:13:00 PM	8OZP	1		
N048308-012B / MW-24A-Q421	Groundwater	12/9/2021 11:14:00 AM	8OZP	1		
N048308-013B / MW-24B-Q421	Groundwater	12/9/2021 12:01:00 PM	8OZP	1		
N048308-014B / MW-919-Q421	Groundwater	12/9/2021 12:11:00 PM	8OZP	1		
N048308-015B / MW-23-060-Q421	Groundwater	12/9/2021 8:47:00 AM	8OZP	1		
N048308-016B / MW-918-Q421	Groundwater	12/9/2021 8:57:00 AM	8OZP	1		
N048308-017B / MW-23-080-Q421	Groundwater	12/9/2021 8:21:00 AM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48308A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD reqquirement Labspec7 edata.

GSO #: 555516230

		Date/Time			Date/Time
Relinquished by:	YRJ	12/13/2021 1630	**Received by:**		
Relinquished by:			**Received by:**		

January 07, 2022

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048318

RE: PG&E Topock - RCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 10, 2021 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.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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,

Nancy Sibucao
Laboratory Director

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 ASSET Laboratories - Las Vegas.

ASSET Laboratories **Date:** *07-Jan-22*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048318

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.

Subcontracted Analyses:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (87 ug/L) and hexavalent chromium (64 ug/L) for sample N048318-006 (PT9M-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (87 ug/L) and hexavalent chromium (64 ug/L) for sample N048318-006 (PT9M-Q421) 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 84 and 75 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N048318-001CMSD, N048318-003CMS and N048318-003CMSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048318

CASE NARRATIVE

(DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Report was amended as Selenium in closing ICSA7 is greater than1/2 RL. Affected sample N048318-003C was less than 5x the ICSA7 result. Sample N048318-003 was reanalyzed and result is comparable with the initial result. Please see attached Corrective Action Report 5076.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048318
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048318-001A	MW-57-070-Q421	Groundwater	12/10/2021 7:08:00 AM	12/10/2021	12/30/2021
N048318-001B	MW-57-070-Q421	Groundwater	12/10/2021 7:08:00 AM	12/10/2021	12/30/2021
N048318-001C	MW-57-070-Q421	Groundwater	12/10/2021 7:08:00 AM	12/10/2021	12/30/2021
N048318-002A	MW-57-185-Q421	Groundwater	12/10/2021 7:46:00 AM	12/10/2021	12/30/2021
N048318-002B	MW-57-185-Q421	Groundwater	12/10/2021 7:46:00 AM	12/10/2021	12/30/2021
N048318-002C	MW-57-185-Q421	Groundwater	12/10/2021 7:46:00 AM	12/10/2021	12/30/2021
N048318-003A	MW-61-110-Q421	Groundwater	12/10/2021 8:26:00 AM	12/10/2021	12/30/2021
N048318-003B	MW-61-110-Q421	Groundwater	12/10/2021 8:26:00 AM	12/10/2021	12/30/2021
N048318-003C	MW-61-110-Q421	Groundwater	12/10/2021 8:26:00 AM	12/10/2021	12/30/2021
N048318-004A	PT8D-Q421	Groundwater	12/10/2021 9:38:00 AM	12/10/2021	12/30/2021
N048318-004B	PT8D-Q421	Groundwater	12/10/2021 9:38:00 AM	12/10/2021	12/30/2021
N048318-005A	PT9S-Q421	Groundwater	12/10/2021 9:06:00 AM	12/10/2021	12/30/2021
N048318-005B	PT9S-Q421	Groundwater	12/10/2021 9:06:00 AM	12/10/2021	12/30/2021
N048318-005C	PT9S-Q421	Groundwater	12/10/2021 9:06:00 AM	12/10/2021	12/30/2021
N048318-006A	PT9M-Q421	Groundwater	12/10/2021 9:41:00 AM	12/10/2021	12/30/2021
N048318-006B	PT9M-Q421	Groundwater	12/10/2021 9:41:00 AM	12/10/2021	12/30/2021
N048318-006C	PT9M-Q421	Groundwater	12/10/2021 9:41:00 AM	12/10/2021	12/30/2021
N048318-007A	PT9D-Q421	Groundwater	12/10/2021 8:31:00 AM	12/10/2021	12/30/2021
N048318-007B	PT9D-Q421	Groundwater	12/10/2021 8:31:00 AM	12/10/2021	12/30/2021
N048318-007C	PT9D-Q421	Groundwater	12/10/2021 8:31:00 AM	12/10/2021	12/30/2021
N048318-008A	EB-738-Q421	Groundwater	12/10/2021 9:45:00 AM	12/10/2021	12/30/2021
N048318-009A	EB-739-Q421	Groundwater	12/10/2021 10:00:00 AM	12/10/2021	12/30/2021
N048318-010A	MW-24BR-Q421	Groundwater	12/10/2021 7:51:00 AM	12/10/2021	12/30/2021
N048318-010B	MW-24BR-Q421	Groundwater	12/10/2021 7:51:00 AM	12/10/2021	12/30/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 7:08:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211213A**	QC Batch: **R158872**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	380	2.5	20		µg/L	100	12/13/2021 11:56 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211216C**	QC Batch: **90640**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	410	0.18	5.0		µg/L	5	12/17/2021 12:06 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:**	MW-57-185-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 7:46:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211213A**	QC Batch: **R158872**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/13/2021 04:14 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211216C**	QC Batch: **90640**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/17/2021 01:05 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:**	MW-61-110-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 8:26:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211213A**	QC Batch: **R158872**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	370	1.3	10		µg/L	50	12/13/2021 12:24 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211216C**	QC Batch: **90640**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	390	0.18	5.0		µg/L	5	12/17/2021 01:23 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:**	PT8D-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 9:38:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211213A**	QC Batch: **R158872**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	200	1.3	10		µg/L	50	12/13/2021 12:53 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211216C**	QC Batch: **90640**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	200	0.18	5.0		µg/L	5	12/17/2021 02:28 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:**	PT9S-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 9:06:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211213A** QC Batch: **R158872**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	34	0.13	1.0		µg/L	5	12/13/2021 01:31 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211216C** QC Batch: **90640**				PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	35	0.035	1.0		µg/L	1	12/17/2021 02:34 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:**	PT9M-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 9:41:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211213A** QC Batch: **R158872**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	64	0.25	2.0		µg/L	10	12/13/2021 07:33 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211216C** QC Batch: **90640**				PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	87	0.035	1.0		µg/L	1	12/17/2021 02:46 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:**	PT9D-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 8:31:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211213A**	QC Batch: **R158872**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	7000	25	200		µg/L	1000	12/13/2021 02:08 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP8_211229A**	QC Batch: **90640**			PrepDate: **12/12/2021**			Analyst: **CEI**
Chromium	6100	4.4	120		µg/L	125	12/29/2021 03:03 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:**	EB-738-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 9:45:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211213A**	QC Batch: **R158872**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/13/2021 03:24 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:**	EB-739-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 10:00:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211213A**	QC Batch: **R158872**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/13/2021 03:34 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:**	MW-24BR-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 7:51:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_211213A**	QC Batch: **R158872**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/13/2021 04:33 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211216C**	QC Batch: **90640**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/17/2021 03:27 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
Work Order: N048318
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R158872**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **PBW**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463147**

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-R158872**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **LCSW**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.954	0.20	5.000	0	99.1	90	110				

Sample ID: **N048318-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	871.760	20	500.0	377.7	98.8	90	110				

Sample ID: **N048318-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	864.900	20	500.0	377.7	97.4	90	110	871.8	0.790	20	

Sample ID: **N048318-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	607.785	10	250.0	365.6	96.9	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: N048318
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048318-003AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158872**
Client ID: **ZZZZZZ** Batch ID: **R158872** TestNo: **EPA 218.6** Analysis Date: **12/13/2021** SeqNo: **4463154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	604.055	10	250.0	365.6	95.4	90	110	607.8	0.616	20	

Sample ID: **N048318-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158872**
Client ID: **ZZZZZZ** Batch ID: **R158872** TestNo: **EPA 218.6** Analysis Date: **12/13/2021** SeqNo: **4463156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	434.565	10	250.0	197.3	94.9	90	110				

Sample ID: **N048318-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158872**
Client ID: **ZZZZZZ** Batch ID: **R158872** TestNo: **EPA 218.6** Analysis Date: **12/13/2021** SeqNo: **4463160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	58.417	1.0	25.00	33.59	99.3	90	110				

Sample ID: **N048318-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158872**
Client ID: **ZZZZZZ** Batch ID: **R158872** TestNo: **EPA 218.6** Analysis Date: **12/13/2021** SeqNo: **4463164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11729.200	200	5000	6951	95.6	90	110				

Sample ID: **N048318-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158872**
Client ID: **ZZZZZZ** Batch ID: **R158872** TestNo: **EPA 218.6** Analysis Date: **12/13/2021** SeqNo: **4463169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.973	0.20	1.000	0	97.2	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: N048318
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048318-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.959	0.20	1.000	0	95.9	90	110				

Sample ID: **N048318-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.310	1.0	5.000	0	106	90	110				

Sample ID: **N048318-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.048	1.0	5.000	0	101	90	110				

Sample ID: **N048308-016ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	35.801	1.0						35.79	0.0293	20	

Sample ID: **N048308-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	60.223	1.0	25.00	35.79	97.7	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: N048318
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048308-017AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.946	1.0	5.000	0	98.9	90	110				

Sample ID: **N048308-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.731	0.20	5.000	9.719	100	90	110				

Sample ID: **N048318-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158872**
Client ID: **ZZZZZZ**	Batch ID: **R158872**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2021**	SeqNo: **4463187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	113.336	2.0	50.00	64.48	97.7	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: N048318
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **MB-90640**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159002**
Client ID: **PBW**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2021**	SeqNo: **4469757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.286	1.0									

Sample ID: **LCS-90640**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159002**
Client ID: **LCSW**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2021**	SeqNo: **4469758**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.990	1.0	10.00	0	99.9	85	115				

Sample ID: **N048318-001CMS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159002**
Client ID: **ZZZZZZ**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/17/2021**	SeqNo: **4469765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	418.327	5.0	10.00	406.4	119	75	125				

Sample ID: **N048318-001CMSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159002**
Client ID: **ZZZZZZ**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/17/2021**	SeqNo: **4469769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	422.140	5.0	10.00	406.4	158	75	125	418.3	0.907	20	S

Sample ID: **N048318-003CMS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159002**
Client ID: **ZZZZZZ**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/17/2021**	SeqNo: **4469778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	382.907	5.0	10.00	385.5	-26.3	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: N048318
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **N048318-003CMSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**		Prep Date: **12/12/2021**		RunNo: **159002**				
Client ID: **ZZZZZZ**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **12/17/2021**		SeqNo: **4469782**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	375.434	5.0	10.00	385.5	-101	75	125	382.9	1.97	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: N048318
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID	**N048318-001C-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**159002**
Client ID:	**ZZZZZZ**	Batch ID:	**90640**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**12/17/2021**	SeqNo:	**4469763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	414.377	5.0	10.00	406.4	79.9	80	120				S

Sample ID	**N048318-003C-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**159002**
Client ID:	**ZZZZZZ**	Batch ID:	**90640**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**12/17/2021**	SeqNo:	**4469776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	375.054	5.0	10.00	385.5	-105	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		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 7:08:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216D**	QC Batch: **90640**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Arsenic	1.2	0.050	0.10		µg/L	1	12/17/2021 12:00 AM
Manganese	1.1	0.026	0.50		µg/L	1	12/17/2021 12:00 AM
Molybdenum	4.0	0.12	0.50		µg/L	1	12/17/2021 12:00 AM
Selenium	3.7	0.044	0.50		µg/L	1	12/17/2021 12:00 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:**	MW-57-185-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 7:46:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-002		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP8_211216D** QC Batch: **90640** PrepDate: **12/12/2021** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.050	0.10		µg/L	1	12/17/2021 01:05 AM
Manganese	3.2	0.026	0.50		µg/L	1	12/17/2021 01:05 AM
Molybdenum	78	0.12	0.50		µg/L	1	12/17/2021 01:05 AM
Selenium	ND	0.044	0.50		µg/L	1	12/17/2021 01:05 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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Jan-22*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048318
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048318-003

Client Sample ID: MW-61-110-Q421
Collection Date: 12/10/2021 8:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211216D**	QC Batch: **90640**			PrepDate:		**12/12/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/17/2021 01:17 AM
Manganese	350	0.13	2.5		µg/L	5	12/17/2021 01:23 AM
Molybdenum	22	0.12	0.50		µg/L	1	12/17/2021 01:17 AM
Selenium	1.1	0.044	0.50		µg/L	1	1/4/2022 12:59 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:**	PT8D-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 9:38:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216D**	QC Batch: **90640**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/17/2021 02:22 AM
Manganese	270	0.13	2.5		µg/L	5	12/17/2021 02:28 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:**	PT9S-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 9:06:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211220A**	QC Batch: **90640**				PrepDate:	**12/12/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/20/2021 09:15 AM
Manganese	320	0.13	2.5		µg/L	5	12/17/2021 02:40 AM
Molybdenum	8.6	0.12	0.50		µg/L	1	12/17/2021 02:34 AM
Selenium	6.0	0.044	0.50		µg/L	1	12/17/2021 02:34 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:**	PT9M-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 9:41:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211216D**	QC Batch: **90640**				PrepDate:	**12/12/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/17/2021 02:46 AM
Manganese	110	0.026	0.50		µg/L	1	12/17/2021 02:46 AM
Molybdenum	7.2	0.12	0.50		µg/L	1	12/17/2021 02:46 AM
Selenium	5.7	0.044	0.50		µg/L	1	12/17/2021 02:46 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
Lab Order: N048318
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048318-007

Client Sample ID: PT9D-Q421
Collection Date: 12/10/2021 8:31:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211220A**	QC Batch: **90640**				PrepDate:	**12/12/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/20/2021 09:21 AM
Manganese	3.5	0.026	0.50		µg/L	1	12/17/2021 02:58 AM
Molybdenum	90	0.60	2.5		µg/L	5	12/17/2021 03:04 AM
Selenium	4.6	0.044	0.50		µg/L	1	12/17/2021 02:58 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:**	MW-24BR-Q421
Lab Order:	N048318	**Collection Date:**	12/10/2021 7:51:00 AM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048318-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211216D**	QC Batch: **90640**			PrepDate:	**12/12/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/17/2021 03:27 AM
Manganese	79	0.026	0.50		µg/L	1	12/17/2021 03:27 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		

ASSET Laboratories

Date: *07-Jan-22*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048318
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **MB-90640**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159003**
Client ID: **PBW**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2021**	SeqNo: **4469926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.138	0.50									

Sample ID: **LCS-90640**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159003**
Client ID: **LCSW**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2021**	SeqNo: **4469927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.361	0.10	10.00	0	104	85	115				
Manganese	99.134	0.50	100.0	0	99.1	85	115				
Molybdenum	10.077	0.50	10.00	0	101	85	115				
Selenium	9.767	0.50	10.00	0	97.7	85	115				

Sample ID: **N048318-001CMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159003**
Client ID: **ZZZZZZ**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/17/2021**	SeqNo: **4469933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.983	0.10	10.00	1.189	97.9	75	125				
Manganese	93.411	0.50	100.0	1.086	92.3	75	125				
Molybdenum	14.802	0.50	10.00	3.990	108	75	125				
Selenium	12.352	0.50	10.00	3.656	87.0	75	125				

Sample ID: **N048318-001CMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159003**
Client ID: **ZZZZZZ**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/17/2021**	SeqNo: **4469935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.832	0.10	10.00	1.189	96.4	75	125	10.98	1.38	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: N048318
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N048318-001CMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159003**
Client ID: **ZZZZZZ**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/17/2021**	SeqNo: **4469935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.068	0.50	100.0	1.086	92.0	75	125	93.41	0.367	20	
Molybdenum	14.770	0.50	10.00	3.990	108	75	125	14.80	0.220	20	
Selenium	12.906	0.50	10.00	3.656	92.5	75	125	12.35	4.39	20	

Sample ID: **N048318-003CMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159003**
Client ID: **ZZZZZZ**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/17/2021**	SeqNo: **4469946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.440	0.10	10.00	0	94.4	75	125				
Molybdenum	31.800	0.50	10.00	21.59	102	75	125				

Sample ID: **N048318-003CMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159003**
Client ID: **ZZZZZZ**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/17/2021**	SeqNo: **4469947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	435.151	2.5	100.0	349.0	86.2	75	125				

Sample ID: **N048318-003CMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159003**
Client ID: **ZZZZZZ**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/17/2021**	SeqNo: **4469950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.776	0.10	10.00	0	87.8	75	125	9.440	7.29	20	
Molybdenum	31.614	0.50	10.00	21.59	100	75	125	31.80	0.589	20	

Sample ID: **N048318-003CMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159003**
Client ID: **ZZZZZZ**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/17/2021**	SeqNo: **4469951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	423.450	2.5	100.0	349.0	74.5	75	125	435.2	2.73	20	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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048318
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N048318-003CMS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159003**
Client ID: **ZZZZZZ**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/17/2021**	SeqNo: **4491328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.057	0.50	10.00	1.089	89.7	75	125				

Sample ID: **N048318-003CMSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/12/2021**	RunNo: **159003**
Client ID: **ZZZZZZ**	Batch ID: **90640**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/17/2021**	SeqNo: **4491329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.016	0.50	10.00	1.089	89.3	75	125	10.06	0.406	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

ASSET Laboratories

Date: *07-Jan-22*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N048318
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N048318-001C-PS** SampType: **PS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: RunNo: **159003**
Client ID: **ZZZZZZ** Batch ID: **90640** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/17/2021** SeqNo: **4469931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.878	0.10	10.00	1.189	96.9	80	120				
Manganese	93.010	0.50	100.0	1.086	91.9	80	120				
Molybdenum	14.596	0.50	10.00	3.990	106	80	120				
Selenium	12.593	0.50	10.00	3.656	89.4	80	120				

Sample ID: **N048318-003C-PS** SampType: **PS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: RunNo: **159003**
Client ID: **ZZZZZZ** Batch ID: **90640** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/17/2021** SeqNo: **4469944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.459	0.10	10.00	0	94.6	80	120				
Molybdenum	31.678	0.50	10.00	21.59	101	80	120				

Sample ID: **N048318-003C-PS** SampType: **PS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: RunNo: **159003**
Client ID: **ZZZZZZ** Batch ID: **90640** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/17/2021** SeqNo: **4469945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	427.613	2.5	100.0	349.0	78.6	80	120				S

Sample ID: **N048318-003C-PS** SampType: **PS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: RunNo: **159003**
Client ID: **ZZZZZZ** Batch ID: **90640** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/17/2021** SeqNo: **4491327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.069	0.50	10.00	1.089	89.8	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		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
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

| | | |

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:	12/10/2021	Workorder:	N048318
Rep sample Temp (Deg C):	3.8	IR Gun ID:	3
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:

For:

Checklist Completed By: YR GGarcia 12/13/2021

Reviewed By: MBC 12/17/2021

ASSET Laboratories

WORK ORDER Summary

17-Dec-21

WorkOrder: N048318

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/10/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048318-001A	MW-57-070-Q421	12/10/2021 7:08:00 AM	12/27/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☑	☐	WW
N048318-001B			12/27/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☑	☑	SUB
N048318-001C			12/27/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
N048318-002A	MW-57-185-Q421	12/10/2021 7:46:00 AM	12/27/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048318-002B			12/27/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048318-002C			12/27/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048318-003A	MW-61-110-Q421	12/10/2021 8:26:00 AM	12/27/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☑	☐	WW
N048318-003B			12/27/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☑	☑	SUB
N048318-003C			12/27/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☑	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☑	☐	WW
N048318-004A	PT8D-Q421	12/10/2021 9:38:00 AM	12/27/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048318-004B			12/27/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048318-005A	PT9S-Q421	12/10/2021 9:06:00 AM	12/27/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048318-005B			12/27/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB

ASSET Laboratories

WORK ORDER Summary

17-Dec-21

WorkOrder: N048318

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/10/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048318-005C	PT9S-Q421	12/10/2021 9:06:00 AM	12/27/2021	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048318-006A	PT9M-Q421	12/10/2021 9:41:00 AM	12/27/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048318-006B			12/27/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048318-006C			12/27/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048318-007A	PT9D-Q421	12/10/2021 8:31:00 AM	12/27/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048318-007B			12/27/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048318-007C			12/27/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048318-008A	EB-738-Q421	12/10/2021 9:45:00 AM	12/27/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048318-009A	EB-739-Q421	12/10/2021 10:00:00 AM	12/27/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048318-010A	MW-24BR-Q421	12/10/2021 7:51:00 AM	12/27/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048318-010B			12/27/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048318-011A	FOLDER	12/27/2021	12/27/2021		Folder	Folder	☐	☐	☐	LAB
			12/27/2021		Folder	Level IV Report	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

17-Dec-21

WorkOrder: N048318

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/10/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048318-011A	FOLDER	12/27/2021	12/27/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Riggie Tep

13-Dec-21

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**SM4500-NO3F**		
N048318-001B / MW-57-070-Q421	Groundwater	12/10/2021 7:08:00 AM	8OZP	1	(MS/MSD0	
N048318-002B / MW-57-185-Q421	Groundwater	12/10/2021 7:46:00 AM	8OZP	1		
N048318-003B / MW-61-110-Q421	Groundwater	12/10/2021 8:26:00 AM	8OZP	1	(MS/MSD)	
N048318-005B / PT9S-Q421	Groundwater	12/10/2021 9:06:00 AM	8OZP	1		
N048318-006B / PT9M-Q421	Groundwater	12/10/2021 9:41:00 AM	8OZP	1		
N048318-007B / PT9D-Q421	Groundwater	12/10/2021 8:31:00 AM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48318A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD reqquirement Labspec7 edata.

GSO #: 555516230

		Date/Time			Date/Time
Relinquished by:	YRJ	12/13/2021 1630	**Received by:**		
Relinquished by:			**Received by:**		

December 30, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048350

RE: PG&E Topock - PCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 13, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N048350-002 due to matrix interference. Sample was analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Sample was reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (6.0 ug/L) and hexavalent chromium (4.4 ug/L) for sample N048350-001 (MW-97-042-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Iron in QC sample N048400-003CMSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (6.0 ug/L) and hexavalent chromium (4.4 ug/L) for sample N048350-001 (MW-97-042-Q421) 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 5.6 and 4.8 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Analytical Comments for SM 5310C:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N048400-003F-MS and N048400-003F-MSD at 1x dilution possibly due to matrix interference. QC samples were diluted and recovery passed criteria. Thus sample reference N048400-003F and MS/MSD were reported at 5x dilution. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab Order: N048350
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048350-001A	MW-97-042-Q421	Groundwater	12/13/2021 1:58:00 PM	12/13/2021	12/30/2021
N048350-001B	MW-97-042-Q421	Groundwater	12/13/2021 1:58:00 PM	12/13/2021	12/30/2021
N048350-002A	MW-97-202-Q421	Groundwater	12/13/2021 1:24:00 PM	12/13/2021	12/30/2021
N048350-002B	MW-97-202-Q421	Groundwater	12/13/2021 1:24:00 PM	12/13/2021	12/30/2021
N048350-003A	MW-81-043-Q421	Groundwater	12/13/2021 11:14:00 AM	12/13/2021	12/30/2021
N048350-003B	MW-81-043-Q421	Groundwater	12/13/2021 11:14:00 AM	12/13/2021	12/30/2021
N048350-003C	MW-81-043-Q421	Groundwater	12/13/2021 11:14:00 AM	12/13/2021	12/30/2021
N048350-003D	MW-81-043-Q421	Groundwater	12/13/2021 11:14:00 AM	12/13/2021	12/30/2021
N048350-004A	MW-81-098-Q421	Groundwater	12/13/2021 11:49:00 AM	12/13/2021	12/30/2021
N048350-004B	MW-81-098-Q421	Groundwater	12/13/2021 11:49:00 AM	12/13/2021	12/30/2021
N048350-004C	MW-81-098-Q421	Groundwater	12/13/2021 11:49:00 AM	12/13/2021	12/30/2021
N048350-004D	MW-81-098-Q421	Groundwater	12/13/2021 11:49:00 AM	12/13/2021	12/30/2021
N048350-005A	EB-740-Q421	Groundwater	12/13/2021 2:15:00 PM	12/13/2021	12/30/2021
N048350-006A	EB-741-Q421	Groundwater	12/13/2021 1:30:00 PM	12/13/2021	12/30/2021

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-97-042-Q421
Lab Order:	N048350	**Collection Date:**	12/13/2021 1:58:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048350-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211214A** QC Batch: **R158902**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	4.4	0.025	0.20		µg/L	1	12/14/2021 11:21 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211218A** QC Batch: **90702**				PrepDate:	**12/15/2021**		Analyst: **CEI**
Chromium	6.0	0.035	1.0		µg/L	1	12/18/2021 10:51 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
Lab Order: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048350-002

Client Sample ID: MW-97-202-Q421
Collection Date: 12/13/2021 1:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211214A** QC Batch: **R158902**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.13	1.0		µg/L	5	12/14/2021 05:33 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211218A** QC Batch: **90702**				PrepDate:	**12/15/2021**		Analyst: **CEI**
Chromium	ND	0.035	1.0		µg/L	1	12/18/2021 12:23 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
Lab Order: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048350-003

Client Sample ID: MW-81-043-Q421
Collection Date: 12/13/2021 11:14:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211214A** QC Batch: **R158902**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	8.7	0.025	0.20		µg/L	1	12/14/2021 12:02 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211218A** QC Batch: **90702**				PrepDate: **12/15/2021**			Analyst: **CEI**
Chromium	9.2	0.035	1.0		µg/L	1	12/18/2021 12:35 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:**	MW-81-098-Q421
Lab Order:	N048350	**Collection Date:**	12/13/2021 11:49:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048350-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211214A** QC Batch: **R158902**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1.2	0.025	0.20		µg/L	1	12/14/2021 12:20 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211218A** QC Batch: **90702**				PrepDate:	**12/15/2021**		Analyst: **CEI**
Chromium	1.7	0.035	1.0		µg/L	1	12/18/2021 12:47 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
Lab Order: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048350-005

Client Sample ID: EB-740-Q421
Collection Date: 12/13/2021 2:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211214A**	QC Batch: **R158902**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/14/2021 12:58 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:**	EB-741-Q421
Lab Order:	N048350	**Collection Date:**	12/13/2021 1:30:00 PM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048350-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211214A** QC Batch: **R158902** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/14/2021 01:17 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: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R158902**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **PBW**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465178**

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-R158902**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **LCSW**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.874	0.20	5.000	0	97.5	90	110				

Sample ID: **N048350-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.477	0.20	5.000	4.368	102	90	110				

Sample ID: **N048350-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.841	0.20	5.000	8.722	102	90	110				

Sample ID: **N048350-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.969	0.20	1.000	0	96.9	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: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048350-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.996	0.20	1.000	0	99.6	90	110				

Sample ID: **N048351-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	41.625	1.0	25.00	17.11	98.0	90	110				

Sample ID: **N048351-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2978.940	40	1000	1989	99.0	90	110				

Sample ID: **N048351-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.320	1.0	25.00	17.11	101	90	110	41.62	1.65	20	

Sample ID: **N048350-003ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.899	0.20						8.722	2.01	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: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048351-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4359.650	100	2500	1890	98.8	90	110				

Sample ID: **N048351-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.415	1.0	25.00	14.47	99.8	90	110				

Sample ID: **N048351-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.990	0.20	1.000	0	99.0	90	110				

Sample ID: **N048350-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465212**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.794	1.0	5.000	0	95.9	90	110				

Sample ID: **N048351-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	38.426	1.0	25.00	13.53	99.6	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: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048308-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.892	1.0	5.000	0	97.8	90	110				

Sample ID: **N048351-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465222**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	92.299	2.0	50.00	43.11	98.4	90	110				

Sample ID: **N048350-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.154	0.20	1.000	1.173	98.0	90	110				

Sample ID: **N048351-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.534	1.0	5.000	4.740	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: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **MB-90702**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **PBW**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471231**

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

Sample ID: **LCS-90702**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **LCSW**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.138	1.0	10.00	0	101	85	115				

Sample ID: **N048350-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **ZZZZZZ**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	15.513	1.0	10.00	6.026	94.9	75	125				

Sample ID: **N048350-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **ZZZZZZ**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	15.573	1.0	10.00	6.026	95.5	75	125	15.51	0.387	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:**	MW-81-043-Q421
Lab Order:	N048350	**Collection Date:**	12/13/2021 11:14:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048350-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 11:26 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:**	MW-81-098-Q421
Lab Order:	N048350	**Collection Date:**	12/13/2021 11:49:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048350-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON							
			SM 5310C				
RunID: **TOC2_211217A**	QC Batch: **R159005**			PrepDate:			Analyst: **CEI**
Organic Carbon, Total	ND	0.084	1.0		mg/L	1	12/17/2021 11:41 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
Work Order: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 5310C_W_T_PGE

Sample ID: **MB-R159005**	SampType: **MBLK**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159005**
Client ID: **PBW**	Batch ID: **R159005**	TestNo: **SM 5310C**		Analysis Date: **12/17/2021**	SeqNo: **4470818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	1.0									

Sample ID: **LCS-R159005**	SampType: **LCS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159005**
Client ID: **LCSW**	Batch ID: **R159005**	TestNo: **SM 5310C**		Analysis Date: **12/17/2021**	SeqNo: **4470819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	4.867	1.0	5.000	0	97.3	85	115				

Sample ID: **N048400-003F-MS**	SampType: **MS**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159005**
Client ID: **ZZZZZZ**	Batch ID: **R159005**	TestNo: **SM 5310C**		Analysis Date: **12/17/2021**	SeqNo: **4470845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	20.892	5.0	25.00	0	83.6	75	125				

Sample ID: **N048400-003F-MSD**	SampType: **MSD**	TestCode: **5310C_W_T_**	Units: **mg/L**	Prep Date:	RunNo: **159005**
Client ID: **ZZZZZZ**	Batch ID: **R159005**	TestNo: **SM 5310C**		Analysis Date: **12/17/2021**	SeqNo: **4470846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	20.721	5.0	25.00	0	82.9	75	125	20.89	0.819	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:**	MW-81-043-Q421
Lab Order:	N048350	**Collection Date:**	12/13/2021 11:14:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048350-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**				PrepDate:	**12/16/2021**	Analyst: **DJ**
Iron	ND	13	20		µg/L	1	12/21/2021 11:44 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:**	MW-81-098-Q421
Lab Order:	N048350	**Collection Date:**	12/13/2021 11:49:00 AM
Project:	PG&E Topock - PCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048350-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_211221A**	QC Batch: **90727**			PrepDate:	**12/16/2021**		Analyst: **DJ**
Iron	41	13	20		µg/L	1	12/21/2021 02:03 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: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **MB-90727**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **12/16/2021**	RunNo: **159075**
Client ID: **PBW**	Batch ID: **90727**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/21/2021**	SeqNo: **4473522**

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

Sample ID: **LCS-90727**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **12/16/2021**	RunNo: **159075**
Client ID: **LCSW**	Batch ID: **90727**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/21/2021**	SeqNo: **4473523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107.658	20	100.0	0	108	85	115				

Sample ID: **N048400-003CMS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **12/16/2021**	RunNo: **159075**
Client ID: **ZZZZZZ**	Batch ID: **90727**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/21/2021**	SeqNo: **4473537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	91.004	20	100.0	15.12	75.9	75	125				

Sample ID: **N048400-003CMSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **µg/L**	Prep Date: **12/16/2021**	RunNo: **159075**
Client ID: **ZZZZZZ**	Batch ID: **90727**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/21/2021**	SeqNo: **4473538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	86.623	20	100.0	15.12	71.5	75	125	91.00	4.93	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: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N048400-003C-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **µg/L** Prep Date: RunNo: **159075**
Client ID: **ZZZZZZ** Batch ID: **90727** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/21/2021** SeqNo: **4473536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	85.113	20	100.0	15.12	70.0	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		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048350-003

Client Sample ID: MW-81-043-Q421
Collection Date: 12/13/2021 11:14:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**			PrepDate:		**12/15/2021**	Analyst: **CEI**
Arsenic	0.75	0.050	0.10		µg/L	1	12/18/2021 12:35 PM
Barium	110	0.083	1.0		µg/L	1	12/18/2021 12:35 PM
Manganese	160	0.026	0.50		µg/L	1	12/18/2021 12:35 PM
Molybdenum	24	0.12	0.50		µg/L	1	12/18/2021 12:35 PM
Selenium	2.6	0.044	0.50		µg/L	1	12/18/2021 12:35 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
Lab Order: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW
Lab ID: N048350-004

Client Sample ID: MW-81-098-Q421
Collection Date: 12/13/2021 11:49:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**				PrepDate:	**12/15/2021**	Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/18/2021 12:47 PM
Barium	70	0.083	1.0		µg/L	1	12/18/2021 12:47 PM
Manganese	140	0.026	0.50		µg/L	1	12/18/2021 12:47 PM
Molybdenum	3.4	0.12	0.50		µg/L	1	12/18/2021 12:47 PM
Selenium	ND	0.044	0.50		µg/L	1	12/18/2021 12:47 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: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **MB-90702** SampType: **MBLK** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/15/2021** RunNo: **159016**
Client ID: **PBW** Batch ID: **90702** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/18/2021** SeqNo: **4471290**

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									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **LCS-90702** SampType: **LCS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/15/2021** RunNo: **159016**
Client ID: **LCSW** Batch ID: **90702** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/18/2021** SeqNo: **4471291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.234	0.10	10.00	0	102	85	115				
Barium	9.886	1.0	10.00	0	98.9	85	115				
Manganese	100.232	0.50	100.0	0	100	85	115				
Molybdenum	10.087	0.50	10.00	0	101	85	115				
Selenium	9.812	0.50	10.00	0	98.1	85	115				

Sample ID: **N048350-001B-MS** SampType: **MS** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/15/2021** RunNo: **159016**
Client ID: **ZZZZZZ** Batch ID: **90702** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/18/2021** SeqNo: **4471297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.985	0.10	10.00	2.537	104	75	125				
Barium	59.356	1.0	10.00	48.79	106	75	125				
Manganese	149.052	0.50	100.0	54.90	94.2	75	125				
Molybdenum	33.242	0.50	10.00	21.96	113	75	125				
Selenium	11.091	0.50	10.00	1.783	93.1	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: N048350
Project: PG&E Topock - PCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N048350-001B-MSD** SampType: **MSD** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/15/2021** RunNo: **159016**
Client ID: **ZZZZZZ** Batch ID: **90702** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/18/2021** SeqNo: **4471299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.668	0.10	10.00	2.537	101	75	125	12.99	2.47	20	
Barium	59.399	1.0	10.00	48.79	106	75	125	59.36	0.0732	20	
Manganese	148.073	0.50	100.0	54.90	93.2	75	125	149.1	0.659	20	
Molybdenum	33.392	0.50	10.00	21.96	114	75	125	33.24	0.450	20	
Selenium	11.479	0.50	10.00	1.783	97.0	75	125	11.09	3.43	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

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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CHAIN OF CUSTODY RECORD

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| | | |

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:	12/13/2021	Workorder:	N048350
Rep sample Temp (Deg C):	2.3	IR Gun ID:	3
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 By: YR YRJ 12/14/2021

Reviewed By: MBC 12/17/2021

ASSET Laboratories

WORK ORDER Summary

17-Dec-21

WorkOrder: N048350

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/13/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048350-001A	MW-97-042-Q421	12/13/2021 1:58:00 PM	12/28/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048350-001B			12/28/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048350-002A	MW-97-202-Q421	12/13/2021 1:24:00 PM	12/28/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048350-002B			12/28/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048350-003A	MW-81-043-Q421	12/13/2021 11:14:00 AM	12/28/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048350-003B			12/28/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048350-003C			12/28/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048350-003D			12/28/2021		SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048350-004A	MW-81-098-Q421	12/13/2021 11:49:00 AM	12/28/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048350-004B			12/28/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048350-004C			12/28/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2021		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

17-Dec-21

WorkOrder: N048350

Client ID: ARCUS02

Project: PG&E Topock - PCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/13/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048350-004D	MW-81-098-Q421	12/13/2021 11:49:00 AM	12/28/2021	Groundwater	SM 5310C	TOTAL ORGANIC CARBON	☐	☐	☐	VW
N048350-005A	EB-740-Q421	12/13/2021 2:15:00 PM	12/28/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048350-006A	EB-741-Q421	12/13/2021 1:30:00 PM	12/28/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048350-007A	FOLDER	12/28/2021	12/28/2021		Folder	Folder	☐	☐	☐	LAB
			12/28/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/28/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Nara Tep

16-Dec-21

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**SM4500-NO3F**		
N048350-003B / MW-81-043-Q421	Groundwater	12/13/2021 11:14:00 AM	8OZP	1		
N048350-004B / MW-81-098-Q421	Groundwater	12/13/2021 11:49:00 AM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48350A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555562630

		Date/Time			Date/Time
Relinquished by:	YRJ	12/16/2021 1630	**Received by:**		
Relinquished by:			**Received by:**		

December 30, 2021

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

TEL: (916) 786-3302
FAX:

Workorder No.: N048351

RE: PG&E Topock - RCM, 30110373.4Q21GW

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 13, 2021 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,

Nancy Sibucao
Laboratory Director

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 ASSET 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:

Nitrate/Nitrite was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (6.8 ug/L) and hexavalent chromium (4.7 ug/L) for sample N048351-002 (MW-93-213-Q421) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (6.8 ug/L) and hexavalent chromium (4.7 ug/L) for sample N048351-002 (MW-93-213-Q421) 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 6.3 and 5.0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab Order: N048351
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048351-001A	MW-93-050-Q421	Groundwater	12/13/2021 12:32:00 PM	12/13/2021	12/30/2021
N048351-001B	MW-93-050-Q421	Groundwater	12/13/2021 12:32:00 PM	12/13/2021	12/30/2021
N048351-002A	MW-93-213-Q421	Groundwater	12/13/2021 11:57:00 AM	12/13/2021	12/30/2021
N048351-002B	MW-93-213-Q421	Groundwater	12/13/2021 11:57:00 AM	12/13/2021	12/30/2021
N048351-003A	MW-12-Q421	Groundwater	12/13/2021 12:42:00 PM	12/13/2021	12/30/2021
N048351-003B	MW-12-Q421	Groundwater	12/13/2021 12:42:00 PM	12/13/2021	12/30/2021
N048351-003C	MW-12-Q421	Groundwater	12/13/2021 12:42:00 PM	12/13/2021	12/30/2021
N048351-004A	MW-19-Q421	Groundwater	12/13/2021 12:16:00 PM	12/13/2021	12/30/2021
N048351-004B	MW-19-Q421	Groundwater	12/13/2021 12:16:00 PM	12/13/2021	12/30/2021
N048351-005A	MW-50-095-Q421	Groundwater	12/13/2021 1:40:00 PM	12/13/2021	12/30/2021
N048351-005B	MW-50-095-Q421	Groundwater	12/13/2021 1:40:00 PM	12/13/2021	12/30/2021
N048351-006A	MW-50-200-Q421	Groundwater	12/13/2021 2:26:00 PM	12/13/2021	12/30/2021
N048351-006B	MW-50-200-Q421	Groundwater	12/13/2021 2:26:00 PM	12/13/2021	12/30/2021
N048351-006C	MW-50-200-Q421	Groundwater	12/13/2021 2:26:00 PM	12/13/2021	12/30/2021
N048351-007A	TW-05-Q421	Groundwater	12/13/2021 12:58:00 PM	12/13/2021	12/30/2021
N048351-007B	TW-05-Q421	Groundwater	12/13/2021 12:58:00 PM	12/13/2021	12/30/2021
N048351-008A	EB-742-Q421	Groundwater	12/13/2021 2:40:00 PM	12/13/2021	12/30/2021

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N048351
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048351-001

Client Sample ID: MW-93-050-Q421
Collection Date: 12/13/2021 12:32:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211214A** QC Batch: **R158902**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	17	0.13	1.0		µg/L	5	12/14/2021 01:36 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211218A** QC Batch: **90702**				PrepDate:	**12/15/2021**		Analyst: **CEI**
Chromium	19	0.035	1.0		µg/L	1	12/18/2021 12:59 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
Lab Order: N048351
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048351-002

Client Sample ID: MW-93-213-Q421
Collection Date: 12/13/2021 11:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211214A** QC Batch: **R158902**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	4.7	0.13	1.0		µg/L	5	12/14/2021 05:52 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP8_211218A** QC Batch: **90702**				PrepDate:	**12/15/2021**		Analyst: **CEI**
Chromium	6.8	0.035	1.0		µg/L	1	12/18/2021 01:11 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:**	MW-12-Q421
Lab Order:	N048351	**Collection Date:**	12/13/2021 12:42:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048351-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211214A**	QC Batch: **R158902**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	2000	5.0	40		µg/L	200	12/14/2021 02:14 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP8_211220A**	QC Batch: **90702**			PrepDate:	**12/15/2021**		Analyst: **CEI**
Chromium	2000	0.88	25		µg/L	25	12/20/2021 09:50 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:**	MW-19-Q421
Lab Order:	N048351	**Collection Date:**	12/13/2021 12:16:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048351-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211214A** QC Batch: **R158902**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	43	0.25	2.0		µg/L	10	12/14/2021 07:27 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211218A** QC Batch: **90702**				PrepDate:	**12/15/2021**		Analyst: **CEI**
Chromium	48	0.035	1.0		µg/L	1	12/18/2021 01:58 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:**	MW-50-095-Q421
Lab Order:	N048351	**Collection Date:**	12/13/2021 1:40:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048351-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211214A** QC Batch: **R158902**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	14	0.13	1.0		µg/L	5	12/14/2021 06:11 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP8_211218A** QC Batch: **90702**				PrepDate:	**12/15/2021**		Analyst: **CEI**
Chromium	15	0.035	1.0		µg/L	1	12/18/2021 02:10 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:**	MW-50-200-Q421
Lab Order:	N048351	**Collection Date:**	12/13/2021 2:26:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048351-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_211214A**	QC Batch: **R158902**			PrepDate:			Analyst: **RAB**
Hexavalent Chromium	1900	13	100		µg/L	500	12/14/2021 03:47 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP8_211220A**	QC Batch: **90702**			PrepDate:	**12/15/2021**		Analyst: **CEI**
Chromium	1900	0.88	25		µg/L	25	12/20/2021 09:56 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:**	TW-05-Q421
Lab Order:	N048351	**Collection Date:**	12/13/2021 12:58:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048351-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211214A** QC Batch: **R158902** PrepDate: Analyst: **RAB**							
Hexavalent Chromium	14	0.13	1.0		µg/L	5	12/14/2021 04:08 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP8_211218A** QC Batch: **90702** PrepDate: **12/15/2021** Analyst: **CEI**							
Chromium	15	0.035	1.0		µg/L	1	12/18/2021 02:34 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:**	EB-742-Q421
Lab Order:	N048351	**Collection Date:**	12/13/2021 2:40:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048351-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_211214A** QC Batch: **R158902**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.025	0.20		µg/L	1	12/14/2021 04:36 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: N048351
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **MB-R158902**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **PBW**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465178**

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-R158902**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **LCSW**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.874	0.20	5.000	0	97.5	90	110				

Sample ID: **N048350-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.477	0.20	5.000	4.368	102	90	110				

Sample ID: **N048350-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.841	0.20	5.000	8.722	102	90	110				

Sample ID: **N048350-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.969	0.20	1.000	0	96.9	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: N048351
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048350-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158902**
Client ID: **ZZZZZZ** Batch ID: **R158902** TestNo: **EPA 218.6** Analysis Date: **12/14/2021** SeqNo: **4465192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.996	0.20	1.000	0	99.6	90	110				

Sample ID: **N048351-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158902**
Client ID: **ZZZZZZ** Batch ID: **R158902** TestNo: **EPA 218.6** Analysis Date: **12/14/2021** SeqNo: **4465194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	41.625	1.0	25.00	17.11	98.0	90	110				

Sample ID: **N048351-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158902**
Client ID: **ZZZZZZ** Batch ID: **R158902** TestNo: **EPA 218.6** Analysis Date: **12/14/2021** SeqNo: **4465198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2978.940	40	1000	1989	99.0	90	110				

Sample ID: **N048351-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158902**
Client ID: **ZZZZZZ** Batch ID: **R158902** TestNo: **EPA 218.6** Analysis Date: **12/14/2021** SeqNo: **4465201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.320	1.0	25.00	17.11	101	90	110	41.62	1.65	20	

Sample ID: **N048350-003ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **158902**
Client ID: **ZZZZZZ** Batch ID: **R158902** TestNo: **EPA 218.6** Analysis Date: **12/14/2021** SeqNo: **4465202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.899	0.20						8.722	2.01	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: N048351
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048351-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4359.650	100	2500	1890	98.8	90	110				

Sample ID: **N048351-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.415	1.0	25.00	14.47	99.8	90	110				

Sample ID: **N048351-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.990	0.20	1.000	0	99.0	90	110				

Sample ID: **N048350-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465212**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.794	1.0	5.000	0	95.9	90	110				

Sample ID: **N048351-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	38.426	1.0	25.00	13.53	99.6	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: N048351
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **N048308-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.892	1.0	5.000	0	97.8	90	110				

Sample ID: **N048351-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465222**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	92.299	2.0	50.00	43.11	98.4	90	110				

Sample ID: **N048350-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.154	0.20	1.000	1.173	98.0	90	110				

Sample ID: **N048351-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **158902**
Client ID: **ZZZZZZ**	Batch ID: **R158902**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2021**	SeqNo: **4465268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.534	1.0	5.000	4.740	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: N048351
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE_TPK

Sample ID: **MB-90702**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **PBW**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471231**

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

Sample ID: **LCS-90702**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **LCSW**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.138	1.0	10.00	0	101	85	115				

Sample ID: **N048350-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **ZZZZZZ**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	15.513	1.0	10.00	6.026	94.9	75	125				

Sample ID: **N048350-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **ZZZZZZ**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	15.573	1.0	10.00	6.026	95.5	75	125	15.51	0.387	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:**	MW-93-050-Q421
Lab Order:	N048351	**Collection Date:**	12/13/2021 12:32:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048351-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**			PrepDate:	**12/15/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/18/2021 12:59 PM
Manganese	5.3	0.026	0.50		µg/L	1	12/18/2021 12:59 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
Lab Order: N048351
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048351-002

Client Sample ID: MW-93-213-Q421
Collection Date: 12/13/2021 11:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**			PrepDate:	**12/15/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/18/2021 01:11 PM
Manganese	140	0.026	0.50		µg/L	1	12/18/2021 01:11 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
Lab Order: N048351
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048351-003

Client Sample ID: MW-12-Q421
Collection Date: 12/13/2021 12:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**			PrepDate:		**12/15/2021**	Analyst: **CEI**
Arsenic	35	0.050	0.10		µg/L	1	12/18/2021 01:46 PM
Manganese	0.64	0.026	0.50		µg/L	1	12/18/2021 01:46 PM
Molybdenum	9.7	0.12	0.50		µg/L	1	12/18/2021 01:46 PM
Selenium	19	0.044	0.50		µg/L	1	12/18/2021 01:46 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:**	MW-19-Q421
Lab Order:	N048351	**Collection Date:**	12/13/2021 12:16:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048351-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211220A**	QC Batch: **90702**			PrepDate:		**12/15/2021**	Analyst: **CEI**
Arsenic	0.30	0.050	0.10		µg/L	1	12/20/2021 09:45 AM
Manganese	2.8	0.026	0.50		µg/L	1	12/18/2021 01:58 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-50-095-Q421
Lab Order:	N048351	**Collection Date:**	12/13/2021 1:40:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048351-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**			PrepDate:	**12/15/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/18/2021 02:10 PM
Manganese	ND	0.026	0.50		µg/L	1	12/18/2021 02:10 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
Lab Order: N048351
Project: PG&E Topock - RCM, 30110373.4Q21GW
Lab ID: N048351-006

Client Sample ID: MW-50-200-Q421
Collection Date: 12/13/2021 2:26:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**			PrepDate:	**12/15/2021**		Analyst: **CEI**
Arsenic	3.4	0.050	0.10		µg/L	1	12/18/2021 02:22 PM
Manganese	ND	0.026	0.50		µg/L	1	12/18/2021 02:22 PM
Molybdenum	38	0.12	0.50		µg/L	1	12/18/2021 02:22 PM
Selenium	1.5	0.044	0.50		µg/L	1	12/18/2021 02:22 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:**	TW-05-Q421
Lab Order:	N048351	**Collection Date:**	12/13/2021 12:58:00 PM
Project:	PG&E Topock - RCM, 30110373.4Q21GW	**Matrix:**	GROUNDWATER
Lab ID:	N048351-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP8_211218A**	QC Batch: **90702**			PrepDate:	**12/15/2021**		Analyst: **CEI**
Arsenic	ND	0.050	0.10		µg/L	1	12/18/2021 02:34 PM
Manganese	1.4	0.026	0.50		µg/L	1	12/18/2021 02:34 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: N048351
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **MB-90702**	SampType: **MBLK**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **PBW**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471290**

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

Sample ID: **LCS-90702**	SampType: **LCS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **LCSW**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.234	0.10	10.00	0	102	85	115				
Manganese	100.232	0.50	100.0	0	100	85	115				
Molybdenum	10.087	0.50	10.00	0	101	85	115				
Selenium	9.812	0.50	10.00	0	98.1	85	115				

Sample ID: **N048350-001B-MS**	SampType: **MS**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **ZZZZZZ**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.985	0.10	10.00	2.537	104	75	125				
Manganese	149.052	0.50	100.0	54.90	94.2	75	125				
Molybdenum	33.242	0.50	10.00	21.96	113	75	125				
Selenium	11.091	0.50	10.00	1.783	93.1	75	125				

Sample ID: **N048350-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS_TP**	Units: **µg/L**	Prep Date: **12/15/2021**	RunNo: **159016**
Client ID: **ZZZZZZ**	Batch ID: **90702**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/18/2021**	SeqNo: **4471299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.668	0.10	10.00	2.537	101	75	125	12.99	2.47	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: N048351
Project: PG&E Topock - RCM, 30110373.4Q21GW

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS_TPK

Sample ID: **N048350-001B-MSD** SampType: **MSD** TestCode: **6020_DIS_TP** Units: **µg/L** Prep Date: **12/15/2021** RunNo: **159016**
Client ID: **ZZZZZZ** Batch ID: **90702** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/18/2021** SeqNo: **4471299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	148.073	0.50	100.0	54.90	93.2	75	125	149.1	0.659	20	
Molybdenum	33.392	0.50	10.00	21.96	114	75	125	33.24	0.450	20	
Selenium	11.479	0.50	10.00	1.783	97.0	75	125	11.09	3.43	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

N048351

ASSET LABORATORIES
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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 ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: [redacted]	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: [redacted]@pivox.com P.O.#	
Submitted By: Reggie Tap		Phone: 949-727-1400, ext 200 Fax:	
Title: Field Tech	Phone: 916-786-3302 Fax:		
Signature: RB Date: 12/13/21	Sampled By: Nara Tap		
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		
Project Name: PG&E Topock - RCM	Signature: Date: 12/13/21		
Project Number: 30110373.4Q21GW			

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

Sample Receipt Condition

	Y	N
1. Chilled	X	
2. Headspace		
3. Container Intact	X	
4. Seal Present		X
5. IR number	3	

6. Method of Cooling: ICE

Sample Temp: 2.3 °C

Courier: ASSET

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Dissolved metals (SW6020) FF; HNO3 Arsenic, Manganese, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Total Dissolved Chromium, (500mL poly)	Dissolved metals (SW6020) FF; HNO3 Molybdenum, Selenium (500mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N048351-01	MW-93-050-Q421	12/13/2021	12:32		X		X	X		E	2	P	BNS	
2	-02	MW-93-213-Q421	12/13/2021	11:57		X		X	X		E	2	P	BNS	
3	-03	MW-12-Q421	12/13/2021	12:42		X	X	X	X	X	E	3	P	BNS	
4	-04	MW-19-Q421	12/13/2021	12:16		X		X	X		E	2	P	BNS	
5	-05	MW-50-095-Q421	12/13/2021	13:40		X		X	X		E	2	P	BNS	
	-06	MW-50-200-Q421	12/13/2021	14:26		X	X	X	X	X	E	3	P	BNS	
7	-07	TW-05-Q421	12/13/2021	12:58		X		X	X		E	2	P	BNS	
8	-08	EB-742-Q421	12/13/2021	15:40		X					E	1	P	BNS	
9															
10															
11															
12															
13															
14															

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Nara Tap	12/13/21 1550	James Deack	12/13/21 15:56
[signature]	12/13/21 23:40	[signature]	12/13/21 23:40
[signature]		[signature]	

Turn Around Time (TAT)

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

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

Special Instruction:

Terms
1. All samples will be disposed in 45 days 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 Surchargee 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:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	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:	12/13/2021	Workorder:	N048351
Rep sample Temp (Deg C):	2.3	IR Gun ID:	3
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 By: YR YRJ 12/14/2021

Reviewed By: MBC 12/17/2021

ASSET Laboratories

WORK ORDER Summary

17-Dec-21

WorkOrder: N048351

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/13/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048351-001A	MW-93-050-Q421	12/13/2021 12:32:00 PM	12/28/2021	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048351-001B			12/28/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048351-002A	MW-93-213-Q421	12/13/2021 11:57:00 AM	12/28/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048351-002B			12/28/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048351-003A	MW-12-Q421	12/13/2021 12:42:00 PM	12/28/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048351-003B			12/28/2021		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048351-003C			12/28/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048351-004A	MW-19-Q421	12/13/2021 12:16:00 PM	12/28/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048351-004B			12/28/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048351-005A	MW-50-095-Q421	12/13/2021 1:40:00 PM	12/28/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048351-005B			12/28/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048351-006A	MW-50-200-Q421	12/13/2021 2:26:00 PM	12/28/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

17-Dec-21

WorkOrder: N048351

Client ID: ARCUS02

Project: PG&E Topock - RCM, 30110373.4Q21GW **QC Level:** Level IV **Date Received:** 12/13/2021

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048351-006B	MW-50-200-Q421	12/13/2021 2:26:00 PM	12/28/2021	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☑	SUB
N048351-006C			12/28/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048351-007A	TW-05-Q421	12/13/2021 12:58:00 PM	12/28/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048351-007B			12/28/2021		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2021		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N048351-008A	EB-742-Q421	12/13/2021 2:40:00 PM	12/28/2021		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N048351-009A	FOLDER	12/28/2021	12/28/2021		Folder	Folder	☐	☐	☐	LAB
			12/28/2021		Folder	Level IV Report	☐	☐	☐	LAB
			12/28/2021		Folder	Folder	☐	☐	☐	LAB

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:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: Nara tep

16-Dec-21

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**SM4500-NO3F**		
N048351-003B / MW-12-Q421	Groundwater	12/13/2021 12:42:00 PM	8OZP	1		
N048351-006B / MW-50-200-Q421	Groundwater	12/13/2021 2:26:00 PM	8OZP	1		

General Comments: PLEASE EMAIL SAMPLE RECEIPT ACKNOWLEDGEMENT TO THE PM. ALWAYS CC: sonny.lorenzo@assetlaboratories.com

Please use PO#:N48351A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Standard TAT.

Please analyze for Nitrate/Nitrite. EDD requirement Labspec7 edata.

GSO #: 555562630

		Date/Time			Date/Time
Relinquished by:	YRJ	12/16/2021 1630	**Received by:**		
Relinquished by:			**Received by:**		

Appendix D

COPC Parameter Assessment Plan Methodology

ARCADIS

Pacific Gas and Electric Company

Appendix D – COPC Perimeter Assessment Plan Methodology

Fourth Quarter 2021 Quarterly Progress Report
Topock Compressor Station
Needles, California

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Attachment B. Box and Whisker Plots

Acronyms and Abbreviations

ARAR	Applicable or Relevant and Appropriate Requirement
BOD	Basis of Design
COPC	constituent of potential concern
Cr6	hexavalent chromium
FOD	frequency of detection
IQR	interquartile range
IRZ	in-situ reactive zone
µg/L	microgram per liter
mg/L	milligram per liter
O&M	operation and maintenance
PAP	Perimeter Assessment Plan
PG&E	Pacific Gas and Electric Company
RCRA	Resource Conservation Recovery Act
SCL	Shewhart Control Limit
Site	PG&E Topock Compressor Station, located in eastern San Bernardino County, 15 miles southeast of the City of Needles, California
SMP	Sampling and Monitoring Plan
Statistical Guidance	Statistical Guidance for Determining Background Groundwater Quality and Degradation
TCS	Topock Compressor Station
Unified Guidance	Statistical Analysis of Groundwater Monitoring data at RCRA Facilities, Unified Guidance
USEPA	United States Environmental Protection Agency
x	mean

1 Introduction

Pacific Gas and Electric Company (PG&E) is implementing a final groundwater remedy to address hexavalent chromium (Cr6) in groundwater near the PG&E Topock Compressor Station (TCS), located in eastern San Bernardino County, 15 miles southeast of the City of Needles, California (the Site). In November 2015, PG&E submitted a Basis of Design Report/Final (100%) Design Submittal and Construction/Remedial Action Work Plan for the Final Groundwater Remedy (Final BOD), which presents the final design basis, design criteria, drawings, specifications, and operation and maintenance (O&M) requirements for the groundwater remedy (CH2M Hill, Inc. [CH2M Hill] 2015). Site-wide monitoring is being performed in accordance with the Sampling and Monitoring Plan (BOD SMP) provided in the Final BOD O&M Manual (Appendix L, Volume 2; CH2M Hill 2015) to evaluate the performance of the groundwater remedy to attain the Remedial Action Objectives and comply with Applicable or Relevant and Appropriate Requirements (ARARs).

Part of the site-wide monitoring program includes constituent of potential concern (COPC) monitoring, which consists of surface water and groundwater sampling to monitor COPC concentrations (dissolved molybdenum, dissolved selenium, and nitrate) during remedy startup. The COPC monitoring program also includes a COPC Perimeter Assessment Plan (PAP) developed to provide threshold concentrations (i.e., trigger levels) and a decision tree for COPC monitoring. The COPC PAP is designed to monitor the edges of the chromium plume and the elevated COPC areas outside the chromium plume to provide assurance that elevated concentrations of COPCs are being contained within the area of active remediation. Thirty-one monitoring wells are included in the COPC PAP, as shown on Figure D-1. Because COPCs will be moved by the pumping and injection necessary to push the chromium plume through the in-situ reactive zone (IRZ), COPC concentrations in the interior wells are expected to change during the remedial action; therefore, it is not practical or useful to establish numerical COPC trigger levels for wells in the interior of the chromium plume.

This appendix describes the methodology used to calculate the COPC trigger levels, which are established before startup of the remedial action. If COPC concentrations in the COPC PAP monitoring wells exceed the trigger levels, then a series of notifications and actions is required, as outlined in the PAP decision tree provided in Figure D-2.

2 Groundwater Analytical Dataset

The groundwater analytical dataset used in this appendix consists of dissolved molybdenum, dissolved selenium, and nitrate as nitrogen[1] analytical results for samples collected from the 31 COPC PAP monitoring wells. The most recent eight groundwater samples from each monitoring well were used to calculate the trigger levels. If eight groundwater sample results were not available for a well-constituent pair, then a trigger level was not calculated; a trigger level will be calculated once a sufficient number of samples is collected. Field duplicate samples were not included in the groundwater analytical dataset. Table D-1 presents the groundwater analytical dataset used in this appendix.

[1] Nitrate as nitrogen and nitrate/nitrite as nitrogen data have historically been collected from the COPC PAP monitoring wells. If eight nitrate analytical results were not available to calculate a nitrate trigger level, then nitrate/nitrite analytical results were used to calculate a nitrate/nitrite trigger level, which will be used as the interim trigger level until sufficient nitrate results are collected.

3 Overview of Statistical Approach

The statistical approach used in this appendix is based on the Statistical Guidance (United States Environmental Protection Agency [USEPA] 2009). The use of Shewhart Control Limits (SCLs) is one of the recommended core strategies for detection monitoring. The Statistical Guidance (USEPA 2009) recommends the following steps for establishing SCLs for groundwater:

- Perform an exploratory data analysis, which includes determination of normality, calculation of descriptive statistics, and creation of graphical representations (Sections 4.1, 4.2, and 4.3).
- Calculate SCLs (Section 5).

4 Exploratory Data Analysis

The first step in the calculation of SCLs is to complete exploratory data analysis, which includes the determination of normality, calculation of descriptive statistics, and creation of graphical representations. This section describes how the exploratory data analysis was completed and presents the associated statistics for each step of the analysis.

4.1 Determination of Normality

Many of the tests in this appendix are predicated on the normality of the dataset; therefore, when necessary, datasets were tested to demonstrate normality. The Shapiro-Wilk Test for Normality was used for datasets with sample sizes up to 50 (USEPA 2009, Shapiro and Wilk 1965). The test was run at the 5 percent critical level. For datasets with a sample size greater than 50, the Shapiro-Francia Test for Normality was used (USEPA 2009, Shapiro and Francia 1972).

If a dataset did not pass a test of normality, data were transformed following the ladder of powers. The ladder of powers is a sequency of transformations: square root, square, cube root, cube, logarithmic transformation, x^4, x^5, and x^6 (Helsel and Hirsch 2002, Box and Cox 1964). All points in the untransformed dataset were changed by one of these operations, and the new dataset was tested to determine if the transformed data met the criterion of normality. If the test failed, the original data were transformed using the next transformation in the ladder. Transformations were attempted in the order of the ladder of powers until normality was achieved or until all of the options were exhausted. In the latter case, non-parametric tests were necessary.

4.2 Descriptive Statistics

Descriptive statistics quantitatively describe the main features of a dataset. The development of descriptive statistics followed the Data Quality Assessment: Statistical Methods for Practitioners (USEPA 2006). Commonly performed descriptive statistics are described below and were performed on the complete dataset (as described in Section 2):

- Number of detects, number of non-detects, and frequency of detection (FOD). These statistics describe the sample size, number of detects and non-detects, and frequency of uncensored (i.e., detect) data.
- Minimum, maximum, and standard deviation. These statistics are measures of dispersion and characterize the distribution of the data. The minimum and maximum show the range of the data, and the standard deviation shows the spread of the data. A low standard deviation indicates that the observations are close to the mean, and a high standard deviation indicates that the observations are spread out over a larger range. The standard deviation was computed using only detected data.
- Mean and median. These statistics are measures of central tendency and characterize the center of a dataset. The mean represents the arithmetic average, and the median represents the middle of the ordered dataset. These statistics were calculated using only detected data.

Data qualified as estimated (i.e., J flagged) were included as detected values. Descriptive statistics were calculated in ProUCL using the following treatment of non-detects for calculation of the mean and standard deviation values:

- If the dataset contains fewer than 100 percent detections, but greater than 85 percent detections, the values were calculated using the reporting limit for non-detects.
- If the dataset has fewer than or equal to 85 percent detections, but greater than 50 percent detections, the values were calculated using the Kaplan-Meier substitution method for non-detects.
- If the dataset contains fewer than or equal to 50 percent detections, then the mean and standard deviation were not calculated.

Additionally, if a transformation was required to normalize the dataset, then the mean and standard deviation were based on transformed data.

Table D-2 presents descriptive statistics for each monitoring well.

4.3 Graphical Representations

Graphical representations visually communicate the features of a dataset. Concentration time series charts and box and whisker plots and were created for each well-constituent pair in the groundwater analytical dataset.

Concentration time series charts show constituent concentrations through time. They are useful for identifying inconsistent observations. Concentration time series charts were created using Microsoft Excel. Attachment A provides concentration time series charts for each well-constituent pair in the groundwater analytical dataset.

Box and whisker plots present an overall picture of the distribution of a dataset by displaying several percentiles (10th, 25th, 50th, 75th, and 90th). They provide insight into the location, shape, and spread of the data. Data are commonly plotted together in side-by-side box and whisker plots to determine if concentrations are comparable across multiple datasets. Additionally, potential elevated or extreme values (i.e., outliers) are identified on box and whisker plots as either 1.5 or 3 times the interquartile range (IQR; defined as the third quartile [75th percentile] minus the first quartile [25th percentile]; USEPA 2006, 2015) from either end of the box, respectively. Box and whisker plots were created using R studio. Attachment B presents side-by-side box and whisker plots for each well-constituent pair in the groundwater analytical dataset.

5 Statistical Calculation of Shewhart Control Limits

Following the determination of the data distribution and calculation of the mean and standard deviation values, an SCL was calculated for use as a trigger level for 2022 constituent concentrations. The most recent eight concentrations were used in the calculation.

For datasets with fewer than 15 percent non-detections, the reporting limit was used to represent non-detects. For datasets with greater than or equal to 15 percent non-detections, the Kaplan-Meier method for non-detects was used. If there are more than 50 percent non-detections, a non-parametric method was used. For highly censored datasets, the highest detected value was used as the non-parametric SCL. For totally censored datasets (datasets composed exclusively of non-detections), the Double Quantification (DQ) rule was applied. The DQ rule (USEPA 2009) states that:

> "*A confirmed exceedance is registered if any well-constituent pair in the '100% non-detect' group exhibits quantified measurements (i.e., at or greater than the reporting limit) in two consecutive sample and resample events.*"

Before calculating SCLs, the dataset was checked for normality (Section 4.1) to determine which SCL is appropriate to represent the dataset. If the data were not found to be normally distributed, then a transformation was applied using the ladder of powers. The resulting SCL was back-transformed using the inverse of the applied transformation.

The SCLs for datasets with normal distributions and data normalized by a transformation were calculated using the following equation:

$$SCL = \bar{x} + standardized\ control\ limit \times s$$

Where $\bar{x}$ is the mean, s is the standard deviation, and the standardized control limit is equal to 5 (USEPA 2009).

Well-constituent pairs that were not normally distributed and could not be normalized were represented by a non-parametric SCL equal to the maximum detected value.

The SCLs for each well-constituent pair are presented in Table D-2. The SCLs will be updated annually using the most recent eight sample results.

6 Final COPC Trigger Levels

In accordance with the BOD SMP, COPC trigger levels were selected using the following logic:

- If the baseline concentration (defined based on the median of the available data) is below the ARAR, and the SCL is higher than the ARAR, then the ARAR is used as the trigger level. This approach provides a conservative means of establishing a trigger level that will bring attention to rising COPC concentrations before the ARAR concentration is reached. The ARARs for selenium and nitrate are 50 micrograms per liter (µg/L) and 10 milligrams per liter (mg/L), respectively. There is no ARAR for molybdenum.
- If the criteria described above are not met, then the SCL is used as the trigger level.

For all well-constituent pairs presented in Table D-2, the baseline selenium and nitrate concentrations are below the ARARs, and the SCLs are below the ARARs; therefore, the selenium and nitrate SCLs are used as the trigger levels. Because molybdenum does not have an ARAR, the molybdenum SCLs are used as the trigger levels.

7 References

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Shapiro, S.S. and R.S. Francia. 1972. An approximate analysis of variance test for normality. *J. Amer. Stat. Assn., 67*, 215-216.

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Tables

Table D-1
Groundwater Analytical Dataset
Appendix D COPC Perimeter Assessment Plan Methodology
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

Location ID	Sample Date	Constituent	Result	Detect or Non-Detect	Units
MW-14	12/13/2017	Molybdenum, dissolved	13	Detect	µg/L
MW-14	5/1/2018	Molybdenum, dissolved	12	Detect	µg/L
MW-14	12/11/2018	Molybdenum, dissolved	13	Detect	µg/L
MW-14	5/15/2019	Molybdenum, dissolved	11	Detect	µg/L
MW-14	12/9/2019	Molybdenum, dissolved	13	Detect	µg/L
MW-14	6/24/2020	Molybdenum, dissolved	10	Detect	µg/L
MW-14	12/10/2020	Molybdenum, dissolved	10	Detect	µg/L
MW-14	5/28/2021	Molybdenum, dissolved	12	Detect	µg/L
MW-14	12/13/2017	Nitrate/Nitrite as Nitrogen	3.4	Detect	mg/L
MW-14	5/1/2018	Nitrate/Nitrite as Nitrogen	3.8	Detect	mg/L
MW-14	12/11/2018	Nitrate/Nitrite as Nitrogen	3.5	Detect	mg/L
MW-14	5/15/2019	Nitrate/Nitrite as Nitrogen	3.1	Detect	mg/L
MW-14	12/9/2019	Nitrate/Nitrite as Nitrogen	3.3	Detect	mg/L
MW-14	6/24/2020	Nitrate/Nitrite as Nitrogen	3.2	Detect	mg/L
MW-14	12/10/2020	Nitrate/Nitrite as Nitrogen	2.8	Detect	mg/L
MW-14	5/28/2021	Nitrate/Nitrite as Nitrogen	3.7	Detect	mg/L
MW-14	12/13/2017	Selenium, dissolved	2	Detect	µg/L
MW-14	5/1/2018	Selenium, dissolved	2.1	Detect	µg/L
MW-14	12/11/2018	Selenium, dissolved	2.2	Detect	µg/L
MW-14	5/15/2019	Selenium, dissolved	2	Detect	µg/L
MW-14	12/9/2019	Selenium, dissolved	1.8	Detect	µg/L
MW-14	6/24/2020	Selenium, dissolved	1.8	Detect	µg/L
MW-14	12/10/2020	Selenium, dissolved	2	Detect	µg/L
MW-14	5/28/2021	Selenium, dissolved	2	Detect	µg/L
MW-22	4/30/2014	Molybdenum, dissolved	38	Detect	µg/L
MW-22	12/18/2014	Molybdenum, dissolved	32	Detect	µg/L
MW-22	12/3/2015	Molybdenum, dissolved	38	Detect	µg/L
MW-22	12/6/2016	Molybdenum, dissolved	39	Detect	µg/L
MW-22	12/6/2017	Molybdenum, dissolved	30	Detect	µg/L
MW-22	12/4/2018	Molybdenum, dissolved	31	Detect	µg/L
MW-22	12/11/2019	Molybdenum, dissolved	28	Detect	µg/L
MW-22	12/8/2020	Molybdenum, dissolved	32	Detect	µg/L
MW-22	4/30/2014	Selenium, dissolved	0.55	Detect	µg/L
MW-22	12/18/2014	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-22	12/3/2015	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-22	12/6/2016	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-22	12/6/2017	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-22	12/4/2018	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-22	12/11/2019	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-22	12/8/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-23-060	12/13/2011	Molybdenum, dissolved	12	Detect	µg/L
MW-23-060	2/14/2012	Molybdenum, dissolved	9.6	Detect	µg/L
MW-23-060	12/3/2015	Molybdenum, dissolved	24	Detect	µg/L
MW-23-060	12/14/2016	Molybdenum, dissolved	23	Detect	µg/L
MW-23-060	12/8/2017	Molybdenum, dissolved	23	Detect	µg/L
MW-23-060	12/11/2018	Molybdenum, dissolved	25	Detect	µg/L
MW-23-060	12/9/2019	Molybdenum, dissolved	22	Detect	µg/L
MW-23-060	12/8/2020	Molybdenum, dissolved	21	Detect	µg/L
MW-23-060	12/13/2011	Selenium, dissolved	4.7	Detect	µg/L
MW-23-060	2/14/2012	Selenium, dissolved	4.5	Detect	µg/L
MW-23-060	12/3/2015	Selenium, dissolved	4.8	Detect	µg/L
MW-23-060	12/14/2016	Selenium, dissolved	5.3	Detect	µg/L

Table D-1
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Location ID	Sample Date	Constituent	Result	Detect or Non-Detect	Units
MW-23-060	12/8/2017	Selenium, dissolved	4.8	Detect	µg/L
MW-23-060	12/11/2018	Selenium, dissolved	5.9	Detect	µg/L
MW-23-060	12/9/2019	Selenium, dissolved	5.1	Detect	µg/L
MW-23-060	12/8/2020	Selenium, dissolved	4.8	Detect	µg/L
MW-23-080	12/12/2011	Molybdenum, dissolved	41	Detect	µg/L
MW-23-080	2/14/2012	Molybdenum, dissolved	31	Detect	µg/L
MW-23-080	12/3/2015	Molybdenum, dissolved	43	Detect	µg/L
MW-23-080	12/14/2016	Molybdenum, dissolved	43	Detect	µg/L
MW-23-080	12/8/2017	Molybdenum, dissolved	40	Detect	µg/L
MW-23-080	12/11/2018	Molybdenum, dissolved	46	Detect	µg/L
MW-23-080	12/9/2019	Molybdenum, dissolved	47	Detect	µg/L
MW-23-080	12/8/2020	Molybdenum, dissolved	45	Detect	µg/L
MW-23-080	12/12/2011	Selenium, dissolved	4.8	Detect	µg/L
MW-23-080	2/14/2012	Selenium, dissolved	5.3	Detect	µg/L
MW-23-080	12/3/2015	Selenium, dissolved	5.4	Detect	µg/L
MW-23-080	12/14/2016	Selenium, dissolved	5.6	Detect	µg/L
MW-23-080	12/8/2017	Selenium, dissolved	5.1	Detect	µg/L
MW-23-080	12/11/2018	Selenium, dissolved	5.3	Detect	µg/L
MW-23-080	12/9/2019	Selenium, dissolved	5.1	Detect	µg/L
MW-23-080	12/8/2020	Selenium, dissolved	5	Detect	µg/L
MW-27-060	4/14/2014	Molybdenum, dissolved	4.1	Detect	µg/L
MW-27-060	11/4/2014	Molybdenum, dissolved	3.7	Detect	µg/L
MW-27-060	12/3/2015	Molybdenum, dissolved	4.5	Detect	µg/L
MW-27-060	12/6/2016	Molybdenum, dissolved	4.4	Detect	µg/L
MW-27-060	12/4/2017	Molybdenum, dissolved	4.5	Detect	µg/L
MW-27-060	12/5/2018	Molybdenum, dissolved	4.3	Detect	µg/L
MW-27-060	12/10/2019	Molybdenum, dissolved	3.9	Detect	µg/L
MW-27-060	12/3/2020	Molybdenum, dissolved	4.6	Detect	µg/L
MW-27-060	4/14/2014	Nitrate/Nitrite as Nitrogen	0.01	Non-Detect	mg/L
MW-27-060	11/4/2014	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-27-060	12/3/2015	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-27-060	12/6/2016	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-27-060	12/4/2017	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-27-060	12/5/2018	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-27-060	12/10/2019	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-27-060	12/3/2020	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-27-060	4/14/2014	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-27-060	11/4/2014	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-27-060	12/3/2015	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-27-060	12/6/2016	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-27-060	12/4/2017	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-27-060	12/5/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-27-060	12/10/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-27-060	12/3/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-27-085	12/4/2017	Molybdenum, dissolved	18	Detect	µg/L
MW-27-085	4/24/2018	Molybdenum, dissolved	18	Detect	µg/L
MW-27-085	12/5/2018	Molybdenum, dissolved	19	Detect	µg/L
MW-27-085	4/22/2019	Molybdenum, dissolved	17	Detect	µg/L
MW-27-085	12/10/2019	Molybdenum, dissolved	19	Detect	µg/L
MW-27-085	6/18/2020	Molybdenum, dissolved	16	Detect	µg/L
MW-27-085	12/3/2020	Molybdenum, dissolved	21	Detect	µg/L
MW-27-085	4/27/2021	Molybdenum, dissolved	16	Detect	µg/L

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Location ID	Sample Date	Constituent	Result	Detect or Non-Detect	Units
MW-27-085	12/4/2017	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-27-085	4/24/2018	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-27-085	12/5/2018	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-27-085	4/22/2019	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-27-085	12/10/2019	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-27-085	6/18/2020	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-27-085	12/3/2020	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-27-085	4/27/2021	Nitrate/Nitrite as Nitrogen	0.061	Detect	mg/L
MW-27-085	12/4/2017	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-27-085	4/24/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-27-085	12/5/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-27-085	4/22/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-27-085	12/10/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-27-085	6/18/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-27-085	12/3/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-27-085	4/27/2021	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-32-035	11/11/2014	Molybdenum, dissolved	15	Detect	µg/L
MW-32-035	4/20/2015	Molybdenum, dissolved	9.7	Detect	µg/L
MW-32-035	12/3/2015	Molybdenum, dissolved	14	Detect	µg/L
MW-32-035	12/6/2016	Molybdenum, dissolved	12	Detect	µg/L
MW-32-035	12/4/2017	Molybdenum, dissolved	13	Detect	µg/L
MW-32-035	12/4/2018	Molybdenum, dissolved	14	Detect	µg/L
MW-32-035	12/9/2019	Molybdenum, dissolved	12	Detect	µg/L
MW-32-035	12/7/2020	Molybdenum, dissolved	13	Detect	µg/L
MW-32-035	12/1/2014	Nitrate/Nitrite as Nitrogen	0.093	Detect	mg/L
MW-32-035	4/20/2015	Nitrate/Nitrite as Nitrogen	2.3	Detect	mg/L
MW-32-035	12/3/2015	Nitrate/Nitrite as Nitrogen	0.058	Detect	mg/L
MW-32-035	12/6/2016	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-32-035	12/4/2017	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-32-035	12/4/2018	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-32-035	12/9/2019	Nitrate/Nitrite as Nitrogen	0.051	Detect	mg/L
MW-32-035	12/7/2020	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-32-035	11/11/2014	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-32-035	4/20/2015	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-32-035	12/3/2015	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-32-035	12/6/2016	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-32-035	12/4/2017	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-32-035	12/4/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-32-035	12/9/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-32-035	12/7/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-33-040	12/7/2017	Molybdenum, dissolved	340	Detect	µg/L
MW-33-040	4/25/2018	Molybdenum, dissolved	130	Detect	µg/L
MW-33-040	12/7/2018	Molybdenum, dissolved	530	Detect	µg/L
MW-33-040	4/23/2019	Molybdenum, dissolved	130	Detect	µg/L
MW-33-040	12/5/2019	Molybdenum, dissolved	220	Detect	µg/L
MW-33-040	6/17/2020	Molybdenum, dissolved	120	Detect	µg/L
MW-33-040	12/2/2020	Molybdenum, dissolved	440	Detect	µg/L
MW-33-040	4/29/2021	Molybdenum, dissolved	140	Detect	µg/L
MW-33-040	12/7/2017	Nitrate/Nitrite as Nitrogen	0.3	Detect	mg/L
MW-33-040	4/25/2018	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-33-040	12/7/2018	Nitrate/Nitrite as Nitrogen	0.24	Detect	mg/L
MW-33-040	4/23/2019	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L

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MW-33-040	12/5/2019	Nitrate/Nitrite as Nitrogen	0.28	Detect	mg/L
MW-33-040	6/17/2020	Nitrate/Nitrite as Nitrogen	0.077	Detect	mg/L
MW-33-040	12/2/2020	Nitrate/Nitrite as Nitrogen	0.41	Detect	mg/L
MW-33-040	4/29/2021	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-33-040	12/7/2017	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-33-040	4/25/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-33-040	12/7/2018	Selenium, dissolved	1.5	Detect	µg/L
MW-33-040	4/23/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-33-040	12/5/2019	Selenium, dissolved	0.85	Detect	µg/L
MW-33-040	6/17/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-33-040	12/2/2020	Selenium, dissolved	11	Detect	µg/L
MW-33-040	4/29/2021	Selenium, dissolved	0.52	Detect	µg/L
MW-33-090	12/7/2017	Molybdenum, dissolved	11	Detect	µg/L
MW-33-090	4/24/2018	Molybdenum, dissolved	9.8	Detect	µg/L
MW-33-090	12/7/2018	Molybdenum, dissolved	11	Detect	µg/L
MW-33-090	4/22/2019	Molybdenum, dissolved	8.6	Detect	µg/L
MW-33-090	12/5/2019	Molybdenum, dissolved	8.3	Detect	µg/L
MW-33-090	6/17/2020	Molybdenum, dissolved	8.2	Detect	µg/L
MW-33-090	12/2/2020	Molybdenum, dissolved	9.9	Detect	µg/L
MW-33-090	4/29/2021	Molybdenum, dissolved	8.4	Detect	µg/L
MW-33-090	12/7/2017	Nitrate/Nitrite as Nitrogen	1.1	Detect	mg/L
MW-33-090	4/24/2018	Nitrate/Nitrite as Nitrogen	0.99	Detect	mg/L
MW-33-090	12/7/2018	Nitrate/Nitrite as Nitrogen	0.71	Detect	mg/L
MW-33-090	4/22/2019	Nitrate/Nitrite as Nitrogen	1.1	Detect	mg/L
MW-33-090	12/5/2019	Nitrate/Nitrite as Nitrogen	1.1	Detect	mg/L
MW-33-090	6/17/2020	Nitrate/Nitrite as Nitrogen	1.1	Detect	mg/L
MW-33-090	12/2/2020	Nitrate/Nitrite as Nitrogen	0.99	Detect	mg/L
MW-33-090	4/29/2021	Nitrate/Nitrite as Nitrogen	1.1	Detect	mg/L
MW-33-090	12/7/2017	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-33-090	4/24/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-33-090	12/7/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-33-090	4/22/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-33-090	12/5/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-33-090	6/17/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-33-090	12/2/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-33-090	4/29/2021	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-33-150	12/7/2017	Molybdenum, dissolved	41	Detect	µg/L
MW-33-150	4/25/2018	Molybdenum, dissolved	47	Detect	µg/L
MW-33-150	12/7/2018	Molybdenum, dissolved	50	Detect	µg/L
MW-33-150	5/21/2019	Molybdenum, dissolved	48	Detect	µg/L
MW-33-150	12/5/2019	Molybdenum, dissolved	48	Detect	µg/L
MW-33-150	6/17/2020	Molybdenum, dissolved	48	Detect	µg/L
MW-33-150	12/2/2020	Molybdenum, dissolved	41	Detect	µg/L
MW-33-150	4/29/2021	Molybdenum, dissolved	45	Detect	µg/L
MW-33-150	12/7/2017	Nitrate/Nitrite as Nitrogen	1.6	Detect	mg/L
MW-33-150	4/25/2018	Nitrate/Nitrite as Nitrogen	1.3	Detect	mg/L
MW-33-150	12/7/2018	Nitrate/Nitrite as Nitrogen	0.91	Detect	mg/L
MW-33-150	5/21/2019	Nitrate/Nitrite as Nitrogen	1.5	Detect	mg/L
MW-33-150	12/5/2019	Nitrate/Nitrite as Nitrogen	1.8	Detect	mg/L
MW-33-150	6/17/2020	Nitrate/Nitrite as Nitrogen	1.4	Detect	mg/L
MW-33-150	12/2/2020	Nitrate/Nitrite as Nitrogen	1.4	Detect	mg/L
MW-33-150	4/29/2021	Nitrate/Nitrite as Nitrogen	1.6	Detect	mg/L

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MW-33-150	12/7/2017	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-33-150	4/25/2018	Selenium, dissolved	0.79	Detect	µg/L
MW-33-150	12/7/2018	Selenium, dissolved	0.9	Detect	µg/L
MW-33-150	5/21/2019	Selenium, dissolved	0.93	Detect	µg/L
MW-33-150	12/5/2019	Selenium, dissolved	0.85	Detect	µg/L
MW-33-150	6/17/2020	Selenium, dissolved	0.83	Detect	µg/L
MW-33-150	12/2/2020	Selenium, dissolved	0.61	Detect	µg/L
MW-33-150	4/29/2021	Selenium, dissolved	0.82	Detect	µg/L
MW-34-055	11/20/2013	Molybdenum, dissolved	4.9	Detect	µg/L
MW-34-055	11/6/2014	Molybdenum, dissolved	4.9	Detect	µg/L
MW-34-055	12/3/2015	Molybdenum, dissolved	4.6	Detect	µg/L
MW-34-055	12/6/2016	Molybdenum, dissolved	5	Detect	µg/L
MW-34-055	12/6/2017	Molybdenum, dissolved	5	Detect	µg/L
MW-34-055	12/5/2018	Molybdenum, dissolved	5.4	Detect	µg/L
MW-34-055	12/10/2019	Molybdenum, dissolved	4.6	Detect	µg/L
MW-34-055	12/3/2020	Molybdenum, dissolved	5.2	Detect	µg/L
MW-34-055	11/20/2013	Nitrate/Nitrite as Nitrogen	0.01	Non-Detect	mg/L
MW-34-055	11/6/2014	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-34-055	12/3/2015	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-34-055	12/6/2016	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-34-055	12/6/2017	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-34-055	12/5/2018	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-34-055	12/10/2019	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-34-055	12/3/2020	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-34-055	11/20/2013	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-34-055	11/6/2014	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-34-055	12/3/2015	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-34-055	12/6/2016	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-34-055	12/6/2017	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-34-055	12/5/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-34-055	12/10/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-34-055	12/3/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-34-100	12/10/2019	Molybdenum, dissolved	47	Detect	µg/L
MW-34-100	2/20/2020	Molybdenum, dissolved	53	Detect	µg/L
MW-34-100	6/18/2020	Molybdenum, dissolved	64	Detect	µg/L
MW-34-100	10/1/2020	Molybdenum, dissolved	85	Detect	µg/L
MW-34-100	12/3/2020	Molybdenum, dissolved	57	Detect	µg/L
MW-34-100	2/25/2021	Molybdenum, dissolved	55	Detect	µg/L
MW-34-100	4/28/2021	Molybdenum, dissolved	63	Detect	µg/L
MW-34-100	8/26/2021	Molybdenum, dissolved	65	Detect	µg/L
MW-34-100	12/10/2019	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-34-100	2/20/2020	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-34-100	6/18/2020	Nitrate/Nitrite as Nitrogen	0.18	Detect	mg/L
MW-34-100	10/1/2020	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-34-100	12/3/2020	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-34-100	2/25/2021	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-34-100	4/28/2021	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-34-100	8/26/2021	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-34-100	12/10/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-34-100	2/20/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-34-100	6/18/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-34-100	10/1/2020	Selenium, dissolved	0.5	Non-Detect	µg/L

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MW-34-100	12/3/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-34-100	2/25/2021	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-34-100	4/28/2021	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-34-100	8/26/2021	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-35-060	12/8/2017	Molybdenum, dissolved	8.9	Detect	µg/L
MW-35-060	4/27/2018	Molybdenum, dissolved	10	Detect	µg/L
MW-35-060	12/10/2018	Molybdenum, dissolved	9.8	Detect	µg/L
MW-35-060	5/24/2019	Molybdenum, dissolved	11	Detect	µg/L
MW-35-060	12/13/2019	Molybdenum, dissolved	10	Detect	µg/L
MW-35-060	4/27/2020	Molybdenum, dissolved	15	Detect	µg/L
MW-35-060	12/8/2020	Molybdenum, dissolved	10	Detect	µg/L
MW-35-060	4/30/2021	Molybdenum, dissolved	12	Detect	µg/L
MW-35-060	12/8/2017	Nitrate/Nitrite as Nitrogen	2.3	Detect	mg/L
MW-35-060	4/27/2018	Nitrate/Nitrite as Nitrogen	2.2	Detect	mg/L
MW-35-060	12/10/2018	Nitrate/Nitrite as Nitrogen	2.3	Detect	mg/L
MW-35-060	5/24/2019	Nitrate/Nitrite as Nitrogen	2	Detect	mg/L
MW-35-060	12/13/2019	Nitrate/Nitrite as Nitrogen	2.1	Detect	mg/L
MW-35-060	4/27/2020	Nitrate/Nitrite as Nitrogen	2.8	Detect	mg/L
MW-35-060	12/8/2020	Nitrate/Nitrite as Nitrogen	2	Detect	mg/L
MW-35-060	4/30/2021	Nitrate/Nitrite as Nitrogen	2.3	Detect	mg/L
MW-35-060	12/8/2017	Selenium, dissolved	1.1	Detect	µg/L
MW-35-060	4/27/2018	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-35-060	12/10/2018	Selenium, dissolved	1.4	Detect	µg/L
MW-35-060	5/24/2019	Selenium, dissolved	1.5	Detect	µg/L
MW-35-060	12/13/2019	Selenium, dissolved	1.1	Detect	µg/L
MW-35-060	4/27/2020	Selenium, dissolved	1.5	Detect	µg/L
MW-35-060	12/8/2020	Selenium, dissolved	1.3	Detect	µg/L
MW-35-060	4/30/2021	Selenium, dissolved	1.2	Detect	µg/L
MW-35-135	12/8/2017	Molybdenum, dissolved	24	Detect	µg/L
MW-35-135	4/27/2018	Molybdenum, dissolved	19	Detect	µg/L
MW-35-135	12/10/2018	Molybdenum, dissolved	24	Detect	µg/L
MW-35-135	5/24/2019	Molybdenum, dissolved	19	Detect	µg/L
MW-35-135	12/13/2019	Molybdenum, dissolved	22	Detect	µg/L
MW-35-135	4/27/2020	Molybdenum, dissolved	20	Detect	µg/L
MW-35-135	12/8/2020	Molybdenum, dissolved	21	Detect	µg/L
MW-35-135	4/30/2021	Molybdenum, dissolved	20	Detect	µg/L
MW-35-135	12/8/2017	Nitrate/Nitrite as Nitrogen	2.7	Detect	mg/L
MW-35-135	4/27/2018	Nitrate/Nitrite as Nitrogen	2.7	Detect	mg/L
MW-35-135	12/10/2018	Nitrate/Nitrite as Nitrogen	2.3	Detect	mg/L
MW-35-135	5/24/2019	Nitrate/Nitrite as Nitrogen	2.4	Detect	mg/L
MW-35-135	12/13/2019	Nitrate/Nitrite as Nitrogen	2.5	Detect	mg/L
MW-35-135	4/27/2020	Nitrate/Nitrite as Nitrogen	2.6	Detect	mg/L
MW-35-135	12/8/2020	Nitrate/Nitrite as Nitrogen	2.6	Detect	mg/L
MW-35-135	4/30/2021	Nitrate/Nitrite as Nitrogen	2.4	Detect	mg/L
MW-35-135	12/8/2017	Selenium, dissolved	1.1	Detect	µg/L
MW-35-135	4/27/2018	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-35-135	12/10/2018	Selenium, dissolved	1.4	Detect	µg/L
MW-35-135	5/24/2019	Selenium, dissolved	1.3	Detect	µg/L
MW-35-135	12/13/2019	Selenium, dissolved	1	Detect	µg/L
MW-35-135	4/27/2020	Selenium, dissolved	0.92	Detect	µg/L
MW-35-135	12/8/2020	Selenium, dissolved	1	Detect	µg/L
MW-35-135	4/30/2021	Selenium, dissolved	1.1	Detect	µg/L

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Location ID	Sample Date	Constituent	Result	Detect or Non-Detect	Units
MW-36-100	12/6/2017	Molybdenum, dissolved	23	Detect	µg/L
MW-36-100	4/24/2018	Molybdenum, dissolved	22	Detect	µg/L
MW-36-100	12/6/2018	Molybdenum, dissolved	19	Detect	µg/L
MW-36-100	4/24/2019	Molybdenum, dissolved	19	Detect	µg/L
MW-36-100	12/4/2019	Molybdenum, dissolved	18	Detect	µg/L
MW-36-100	6/16/2020	Molybdenum, dissolved	20	Detect	µg/L
MW-36-100	12/15/2020	Molybdenum, dissolved	19	Detect	µg/L
MW-36-100	4/28/2021	Molybdenum, dissolved	21	Detect	µg/L
MW-36-100	12/6/2017	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-36-100	4/24/2018	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-36-100	12/6/2018	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-36-100	4/24/2019	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-36-100	12/4/2019	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-36-100	6/16/2020	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-36-100	12/15/2020	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-36-100	4/28/2021	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-36-100	12/6/2017	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-36-100	4/24/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-36-100	12/6/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-36-100	4/24/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-36-100	12/4/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-36-100	6/16/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-36-100	12/15/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-36-100	4/28/2021	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-37S	5/4/2006	Molybdenum, dissolved	19.9	Detect	µg/L
MW-37S	11/12/2014	Molybdenum, dissolved	18	Detect	µg/L
MW-37S	12/8/2015	Molybdenum, dissolved	16	Detect	µg/L
MW-37S	12/8/2016	Molybdenum, dissolved	16	Detect	µg/L
MW-37S	12/8/2017	Molybdenum, dissolved	15	Detect	µg/L
MW-37S	12/6/2018	Molybdenum, dissolved	15	Detect	µg/L
MW-37S	12/19/2019	Molybdenum, dissolved	14	Detect	µg/L
MW-37S	12/10/2020	Molybdenum, dissolved	15	Detect	µg/L
MW-37S	5/4/2006	Selenium, dissolved	1.37	Detect	µg/L
MW-37S	11/12/2014	Selenium, dissolved	0.85	Detect	µg/L
MW-37S	12/8/2015	Selenium, dissolved	0.68	Detect	µg/L
MW-37S	12/8/2016	Selenium, dissolved	0.8	Detect	µg/L
MW-37S	12/8/2017	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-37S	12/6/2018	Selenium, dissolved	0.76	Detect	µg/L
MW-37S	12/19/2019	Selenium, dissolved	0.7	Detect	µg/L
MW-37S	12/10/2020	Selenium, dissolved	0.82	Detect	µg/L
MW-40D	5/4/2016	Molybdenum, dissolved	49	Detect	µg/L
MW-40D	4/25/2018	Molybdenum, dissolved	50	Detect	µg/L
MW-40D	12/12/2018	Molybdenum, dissolved	54	Detect	µg/L
MW-40D	5/22/2019	Molybdenum, dissolved	54	Detect	µg/L
MW-40D	12/11/2019	Molybdenum, dissolved	50	Detect	µg/L
MW-40D	6/17/2020	Molybdenum, dissolved	41	Detect	µg/L
MW-40D	12/10/2020	Molybdenum, dissolved	41	Detect	µg/L
MW-40D	5/19/2021	Molybdenum, dissolved	49	Detect	µg/L
MW-40D	5/4/2016	Nitrate/Nitrite as Nitrogen	2.7	Detect	mg/L
MW-40D	4/25/2018	Nitrate/Nitrite as Nitrogen	2.7	Detect	mg/L
MW-40D	12/12/2018	Nitrate/Nitrite as Nitrogen	10	Detect	mg/L
MW-40D	5/22/2019	Nitrate/Nitrite as Nitrogen	2.5	Detect	mg/L

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Location ID	Sample Date	Constituent	Result	Detect or Non-Detect	Units
MW-40D	12/11/2019	Nitrate/Nitrite as Nitrogen	3.1	Detect	mg/L
MW-40D	6/17/2020	Nitrate/Nitrite as Nitrogen	0.57	Detect	mg/L
MW-40D	12/10/2020	Nitrate/Nitrite as Nitrogen	2	Detect	mg/L
MW-40D	5/19/2021	Nitrate/Nitrite as Nitrogen	2.1	Detect	mg/L
MW-40D	5/4/2016	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-40D	4/25/2018	Selenium, dissolved	1.8	Detect	µg/L
MW-40D	12/12/2018	Selenium, dissolved	2.5	Detect	µg/L
MW-40D	5/22/2019	Selenium, dissolved	2	Detect	µg/L
MW-40D	12/11/2019	Selenium, dissolved	2	Detect	µg/L
MW-40D	6/17/2020	Selenium, dissolved	0.78	Detect	µg/L
MW-40D	12/10/2020	Selenium, dissolved	1	Detect	µg/L
MW-40D	5/19/2021	Selenium, dissolved	1.8	Detect	µg/L
MW-40S	12/7/2015	Molybdenum, dissolved	9.2	Detect	µg/L
MW-40S	4/25/2018	Molybdenum, dissolved	27	Detect	µg/L
MW-40S	12/12/2018	Molybdenum, dissolved	13	Detect	µg/L
MW-40S	5/22/2019	Molybdenum, dissolved	18	Detect	µg/L
MW-40S	12/11/2019	Molybdenum, dissolved	19	Detect	µg/L
MW-40S	6/17/2020	Molybdenum, dissolved	30	Detect	µg/L
MW-40S	12/10/2020	Molybdenum, dissolved	5.2	Detect	µg/L
MW-40S	5/19/2021	Molybdenum, dissolved	15	Detect	µg/L
MW-40S	12/7/2015	Nitrate/Nitrite as Nitrogen	3.7	Detect	mg/L
MW-40S	4/25/2018	Nitrate/Nitrite as Nitrogen	9.5	Detect	mg/L
MW-40S	12/12/2018	Nitrate/Nitrite as Nitrogen	3.5	Detect	mg/L
MW-40S	5/22/2019	Nitrate/Nitrite as Nitrogen	5.6	Detect	mg/L
MW-40S	12/11/2019	Nitrate/Nitrite as Nitrogen	8.9	Detect	mg/L
MW-40S	6/17/2020	Nitrate/Nitrite as Nitrogen	10	Detect	mg/L
MW-40S	12/10/2020	Nitrate/Nitrite as Nitrogen	3.5	Detect	mg/L
MW-40S	5/19/2021	Nitrate/Nitrite as Nitrogen	5.9	Detect	mg/L
MW-40S	12/7/2015	Selenium, dissolved	2	Detect	µg/L
MW-40S	4/25/2018	Selenium, dissolved	6.1	Detect	µg/L
MW-40S	12/12/2018	Selenium, dissolved	3.4	Detect	µg/L
MW-40S	5/22/2019	Selenium, dissolved	5.6	Detect	µg/L
MW-40S	12/11/2019	Selenium, dissolved	5.8	Detect	µg/L
MW-40S	6/17/2020	Selenium, dissolved	6.1	Detect	µg/L
MW-40S	12/10/2020	Selenium, dissolved	1.8	Detect	µg/L
MW-40S	5/19/2021	Selenium, dissolved	3.9	Detect	µg/L
MW-41M	11/4/2013	Nitrate/Nitrite as Nitrogen	0.675	Detect	mg/L
MW-41M	11/4/2014	Nitrate/Nitrite as Nitrogen	0.66	Detect	mg/L
MW-41M	12/7/2015	Nitrate/Nitrite as Nitrogen	0.64	Detect	mg/L
MW-41M	12/8/2016	Nitrate/Nitrite as Nitrogen	0.67	Detect	mg/L
MW-41M	12/13/2017	Nitrate/Nitrite as Nitrogen	0.66	Detect	mg/L
MW-41M	12/11/2018	Nitrate/Nitrite as Nitrogen	0.52	Detect	mg/L
MW-41M	12/17/2019	Nitrate/Nitrite as Nitrogen	0.58	Detect	mg/L
MW-41M	12/17/2020	Nitrate/Nitrite as Nitrogen	0.59	Detect	mg/L
MW-41S	11/4/2013	Molybdenum, dissolved	16	Detect	µg/L
MW-41S	11/4/2014	Molybdenum, dissolved	16	Detect	µg/L
MW-41S	12/7/2015	Molybdenum, dissolved	16	Detect	µg/L
MW-41S	12/8/2016	Molybdenum, dissolved	16	Detect	µg/L
MW-41S	12/13/2017	Molybdenum, dissolved	14	Detect	µg/L
MW-41S	12/7/2018	Molybdenum, dissolved	13	Detect	µg/L
MW-41S	12/17/2019	Molybdenum, dissolved	13	Detect	µg/L
MW-41S	12/17/2020	Molybdenum, dissolved	13	Detect	µg/L

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Location ID	Sample Date	Constituent	Result	Detect or Non-Detect	Units
MW-41S	11/4/2013	Nitrate/Nitrite as Nitrogen	1.25	Detect	mg/L
MW-41S	11/4/2014	Nitrate/Nitrite as Nitrogen	1.2	Detect	mg/L
MW-41S	12/7/2015	Nitrate/Nitrite as Nitrogen	1.3	Detect	mg/L
MW-41S	12/8/2016	Nitrate/Nitrite as Nitrogen	1.5	Detect	mg/L
MW-41S	12/13/2017	Nitrate/Nitrite as Nitrogen	1.6	Detect	mg/L
MW-41S	12/7/2018	Nitrate/Nitrite as Nitrogen	2.1	Detect	mg/L
MW-41S	12/17/2019	Nitrate/Nitrite as Nitrogen	2.2	Detect	mg/L
MW-41S	12/17/2020	Nitrate/Nitrite as Nitrogen	2.5	Detect	mg/L
MW-41S	11/4/2013	Selenium, dissolved	0.61	Detect	µg/L
MW-41S	11/4/2014	Selenium, dissolved	0.73	Detect	µg/L
MW-41S	12/7/2015	Selenium, dissolved	0.65	Detect	µg/L
MW-41S	12/8/2016	Selenium, dissolved	1	Detect	µg/L
MW-41S	12/13/2017	Selenium, dissolved	1.2	Detect	µg/L
MW-41S	12/7/2018	Selenium, dissolved	1.7	Detect	µg/L
MW-41S	12/17/2019	Selenium, dissolved	1.8	Detect	µg/L
MW-41S	12/17/2020	Selenium, dissolved	1.9	Detect	µg/L
MW-42-030	11/5/2013	Molybdenum, dissolved	22	Detect	µg/L
MW-42-030	11/5/2014	Molybdenum, dissolved	19	Detect	µg/L
MW-42-030	12/3/2015	Molybdenum, dissolved	21	Detect	µg/L
MW-42-030	12/6/2016	Molybdenum, dissolved	20	Detect	µg/L
MW-42-030	12/4/2017	Molybdenum, dissolved	20	Detect	µg/L
MW-42-030	12/5/2018	Molybdenum, dissolved	29	Detect	µg/L
MW-42-030	12/11/2019	Molybdenum, dissolved	24	Detect	µg/L
MW-42-030	12/16/2020	Molybdenum, dissolved	27	Detect	µg/L
MW-42-030	11/5/2013	Nitrate/Nitrite as Nitrogen	0.0125	Detect	mg/L
MW-42-030	11/5/2014	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-42-030	12/3/2015	Nitrate/Nitrite as Nitrogen	0.15	Detect	mg/L
MW-42-030	12/6/2016	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-42-030	12/4/2017	Nitrate/Nitrite as Nitrogen	0.053	Detect	mg/L
MW-42-030	12/5/2018	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-42-030	12/11/2019	Nitrate/Nitrite as Nitrogen	0.075	Detect	mg/L
MW-42-030	12/16/2020	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-42-030	11/5/2013	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-42-030	11/5/2014	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-42-030	12/3/2015	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-42-030	12/6/2016	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-42-030	12/4/2017	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-42-030	12/5/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-42-030	12/11/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-42-030	12/16/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-44-125	12/6/2017	Molybdenum, dissolved	230	Detect	µg/L
MW-44-125	4/24/2018	Molybdenum, dissolved	12	Detect	µg/L
MW-44-125	12/5/2018	Molybdenum, dissolved	170	Detect	µg/L
MW-44-125	4/24/2019	Molybdenum, dissolved	120	Detect	µg/L
MW-44-125	12/11/2019	Molybdenum, dissolved	220	Detect	µg/L
MW-44-125	6/23/2020	Molybdenum, dissolved	13	Detect	µg/L
MW-44-125	12/11/2020	Molybdenum, dissolved	27	Detect	µg/L
MW-44-125	4/28/2021	Molybdenum, dissolved	10	Detect	µg/L
MW-44-125	12/6/2017	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-44-125	4/24/2018	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-44-125	12/5/2018	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-44-125	4/24/2019	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L

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Location ID	Sample Date	Constituent	Result	Detect or Non-Detect	Units
MW-44-125	12/11/2019	Nitrate/Nitrite as Nitrogen	0.09	Detect	mg/L
MW-44-125	6/23/2020	Nitrate/Nitrite as Nitrogen	0.18	Detect	mg/L
MW-44-125	12/11/2020	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-44-125	4/28/2021	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-44-125	12/6/2017	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-44-125	4/24/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-44-125	12/5/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-44-125	4/24/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-44-125	12/11/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-44-125	6/23/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-44-125	12/11/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-44-125	4/28/2021	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-46-175	12/4/2019	Molybdenum, dissolved	180	Detect	µg/L
MW-46-175	2/21/2020	Molybdenum, dissolved	190	Detect	µg/L
MW-46-175	6/23/2020	Molybdenum, dissolved	180	Detect	µg/L
MW-46-175	10/1/2020	Molybdenum, dissolved	190	Detect	µg/L
MW-46-175	12/15/2020	Molybdenum, dissolved	190	Detect	µg/L
MW-46-175	2/25/2021	Molybdenum, dissolved	180	Detect	µg/L
MW-46-175	4/29/2021	Molybdenum, dissolved	210	Detect	µg/L
MW-46-175	8/26/2021	Molybdenum, dissolved	200	Detect	µg/L
MW-46-175	12/4/2019	Nitrate/Nitrite as Nitrogen	1.1	Detect	mg/L
MW-46-175	2/21/2020	Nitrate/Nitrite as Nitrogen	1	Detect	mg/L
MW-46-175	6/23/2020	Nitrate/Nitrite as Nitrogen	1.1	Detect	mg/L
MW-46-175	10/1/2020	Nitrate/Nitrite as Nitrogen	0.92	Detect	mg/L
MW-46-175	12/15/2020	Nitrate/Nitrite as Nitrogen	1	Detect	mg/L
MW-46-175	2/25/2021	Nitrate/Nitrite as Nitrogen	1.1	Detect	mg/L
MW-46-175	4/29/2021	Nitrate/Nitrite as Nitrogen	1	Detect	mg/L
MW-46-175	8/26/2021	Nitrate/Nitrite as Nitrogen	0.94	Detect	mg/L
MW-46-175	12/4/2019	Selenium, dissolved	0.72	Detect	µg/L
MW-46-175	2/21/2020	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-46-175	6/23/2020	Selenium, dissolved	0.55	Detect	µg/L
MW-46-175	10/1/2020	Selenium, dissolved	1	Detect	µg/L
MW-46-175	12/15/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-46-175	2/25/2021	Selenium, dissolved	0.62	Detect	µg/L
MW-46-175	4/29/2021	Selenium, dissolved	0.56	Detect	µg/L
MW-46-175	8/26/2021	Selenium, dissolved	0.79	Detect	µg/L
MW-71-035	12/12/2017	Molybdenum, dissolved	15	Detect	µg/L
MW-71-035	5/2/2018	Molybdenum, dissolved	21	Detect	µg/L
MW-71-035	12/11/2018	Molybdenum, dissolved	17	Detect	µg/L
MW-71-035	5/23/2019	Molybdenum, dissolved	13	Detect	µg/L
MW-71-035	12/18/2019	Molybdenum, dissolved	15	Detect	µg/L
MW-71-035	5/1/2020	Molybdenum, dissolved	15	Detect	µg/L
MW-71-035	12/15/2020	Molybdenum, dissolved	16	Detect	µg/L
MW-71-035	5/26/2021	Molybdenum, dissolved	15	Detect	µg/L
MW-71-035	12/12/2017	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-71-035	5/2/2018	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-71-035	12/11/2018	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-71-035	5/23/2019	Nitrate/Nitrite as Nitrogen	0.085	Detect	mg/L
MW-71-035	12/18/2019	Nitrate/Nitrite as Nitrogen	0.051	Detect	mg/L
MW-71-035	5/1/2020	Nitrate/Nitrite as Nitrogen	0.19	Detect	mg/L
MW-71-035	12/15/2020	Nitrate/Nitrite as Nitrogen	0.092	Detect	mg/L
MW-71-035	5/26/2021	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L

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Location ID	Sample Date	Constituent	Result	Detect or Non-Detect	Units
MW-71-035	12/12/2017	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-71-035	5/2/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-71-035	12/11/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-71-035	5/23/2019	Selenium, dissolved	0.52	Detect	µg/L
MW-71-035	12/18/2019	Selenium, dissolved	2.5	Non-Detect	µg/L
MW-71-035	5/1/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-71-035	12/15/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-71-035	5/26/2021	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-89-183	12/11/2019	Molybdenum, dissolved	9.2	Detect	µg/L
MW-89-183	2/19/2020	Molybdenum, dissolved	7.8	Detect	µg/L
MW-89-183	5/20/2020	Molybdenum, dissolved	10	Detect	µg/L
MW-89-183	8/19/2020	Molybdenum, dissolved	9.5	Detect	µg/L
MW-89-183	12/10/2020	Molybdenum, dissolved	8.1	Detect	µg/L
MW-89-183	2/24/2021	Molybdenum, dissolved	7.4	Detect	µg/L
MW-89-183	5/19/2021	Molybdenum, dissolved	9.7	Detect	µg/L
MW-89-183	8/25/2021	Molybdenum, dissolved	8.3	Detect	µg/L
MW-89-183	12/11/2019	Nitrate/Nitrite as Nitrogen	2.2	Detect	mg/L
MW-89-183	2/19/2020	Nitrate/Nitrite as Nitrogen	2.2	Detect	mg/L
MW-89-183	5/20/2020	Nitrate/Nitrite as Nitrogen	2.6	Detect	mg/L
MW-89-183	8/19/2020	Nitrate/Nitrite as Nitrogen	3.3	Detect	mg/L
MW-89-183	12/10/2020	Nitrate/Nitrite as Nitrogen	2.8	Detect	mg/L
MW-89-183	2/24/2021	Nitrate/Nitrite as Nitrogen	2.6	Detect	mg/L
MW-89-183	5/19/2021	Nitrate/Nitrite as Nitrogen	2.9	Detect	mg/L
MW-89-183	8/25/2021	Nitrate/Nitrite as Nitrogen	2.7	Detect	mg/L
MW-89-183	12/11/2019	Selenium, dissolved	2.1	Detect	µg/L
MW-89-183	2/19/2020	Selenium, dissolved	1.9	Detect	µg/L
MW-89-183	5/20/2020	Selenium, dissolved	2.7	Detect	µg/L
MW-89-183	8/19/2020	Selenium, dissolved	2.7	Detect	µg/L
MW-89-183	12/10/2020	Selenium, dissolved	2.4	Detect	µg/L
MW-89-183	2/24/2021	Selenium, dissolved	2.2	Detect	µg/L
MW-89-183	5/19/2021	Selenium, dissolved	3.1	Detect	µg/L
MW-89-183	8/25/2021	Selenium, dissolved	2.8	Detect	µg/L
MW-89-273	12/11/2019	Molybdenum, dissolved	39	Detect	µg/L
MW-89-273	2/19/2020	Molybdenum, dissolved	43	Detect	µg/L
MW-89-273	5/20/2020	Molybdenum, dissolved	42	Detect	µg/L
MW-89-273	8/19/2020	Molybdenum, dissolved	39	Detect	µg/L
MW-89-273	12/10/2020	Molybdenum, dissolved	35	Detect	µg/L
MW-89-273	2/24/2021	Molybdenum, dissolved	36	Detect	µg/L
MW-89-273	5/19/2021	Molybdenum, dissolved	34	Detect	µg/L
MW-89-273	8/25/2021	Molybdenum, dissolved	33	Detect	µg/L
MW-89-273	12/11/2019	Nitrate/Nitrite as Nitrogen	2.7	Detect	mg/L
MW-89-273	2/19/2020	Nitrate/Nitrite as Nitrogen	2.9	Detect	mg/L
MW-89-273	5/20/2020	Nitrate/Nitrite as Nitrogen	2.1	Detect	mg/L
MW-89-273	8/19/2020	Nitrate/Nitrite as Nitrogen	2.8	Detect	mg/L
MW-89-273	12/10/2020	Nitrate/Nitrite as Nitrogen	3	Detect	mg/L
MW-89-273	2/24/2021	Nitrate/Nitrite as Nitrogen	2.7	Detect	mg/L
MW-89-273	5/19/2021	Nitrate/Nitrite as Nitrogen	2.8	Detect	mg/L
MW-89-273	8/25/2021	Nitrate/Nitrite as Nitrogen	2.8	Detect	mg/L
MW-89-273	12/11/2019	Selenium, dissolved	3.5	Detect	µg/L
MW-89-273	2/19/2020	Selenium, dissolved	3.3	Detect	µg/L
MW-89-273	5/20/2020	Selenium, dissolved	3.5	Detect	µg/L
MW-89-273	8/19/2020	Selenium, dissolved	3.9	Detect	µg/L

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Location ID	Sample Date	Constituent	Result	Detect or Non-Detect	Units
MW-89-273	12/10/2020	Selenium, dissolved	3.5	Detect	µg/L
MW-89-273	2/24/2021	Selenium, dissolved	3.5	Detect	µg/L
MW-89-273	5/19/2021	Selenium, dissolved	3.6	Detect	µg/L
MW-89-273	8/25/2021	Selenium, dissolved	3.7	Detect	µg/L
MW-90-031	12/9/2019	Molybdenum, dissolved	16	Detect	µg/L
MW-90-031	2/25/2020	Molybdenum, dissolved	16	Detect	µg/L
MW-90-031	5/26/2020	Molybdenum, dissolved	14	Detect	µg/L
MW-90-031	8/18/2020	Molybdenum, dissolved	16	Detect	µg/L
MW-90-031	12/2/2020	Molybdenum, dissolved	17	Detect	µg/L
MW-90-031	2/17/2021	Molybdenum, dissolved	16	Detect	µg/L
MW-90-031	5/25/2021	Molybdenum, dissolved	16	Detect	µg/L
MW-90-031	8/18/2021	Molybdenum, dissolved	13	Detect	µg/L
MW-90-031	12/9/2019	Nitrate/Nitrite as Nitrogen	0.077	Detect	mg/L
MW-90-031	2/25/2020	Nitrate/Nitrite as Nitrogen	0.082	Detect	mg/L
MW-90-031	5/26/2020	Nitrate/Nitrite as Nitrogen	0.14	Detect	mg/L
MW-90-031	8/18/2020	Nitrate/Nitrite as Nitrogen	0.094	Detect	mg/L
MW-90-031	12/2/2020	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-90-031	2/17/2021	Nitrate/Nitrite as Nitrogen	0.11	Detect	mg/L
MW-90-031	5/25/2021	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-90-031	8/18/2021	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-90-031	12/9/2019	Selenium, dissolved	0.52	Detect	µg/L
MW-90-031	2/25/2020	Selenium, dissolved	0.68	Detect	µg/L
MW-90-031	5/26/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-90-031	8/18/2020	Selenium, dissolved	0.56	Detect	µg/L
MW-90-031	12/2/2020	Selenium, dissolved	0.58	Detect	µg/L
MW-90-031	2/17/2021	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-90-031	5/25/2021	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-90-031	8/18/2021	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-95-113	8/19/2020	Molybdenum, dissolved	4.9	Detect	µg/L
MW-95-113	9/30/2020	Molybdenum, dissolved	4.5	Detect	µg/L
MW-95-113	10/20/2020	Molybdenum, dissolved	3.9	Detect	µg/L
MW-95-113	11/18/2020	Molybdenum, dissolved	4.6	Detect	µg/L
MW-95-113	12/15/2020	Molybdenum, dissolved	6.4	Detect	µg/L
MW-95-113	2/25/2021	Molybdenum, dissolved	4.2	Detect	µg/L
MW-95-113	5/19/2021	Molybdenum, dissolved	4.1	Detect	µg/L
MW-95-113	8/25/2021	Molybdenum, dissolved	4	Detect	µg/L
MW-95-113	8/19/2020	Nitrate/Nitrite as Nitrogen	5.6	Detect	mg/L
MW-95-113	9/30/2020	Nitrate/Nitrite as Nitrogen	5.7	Detect	mg/L
MW-95-113	10/20/2020	Nitrate/Nitrite as Nitrogen	4.8	Detect	mg/L
MW-95-113	11/18/2020	Nitrate/Nitrite as Nitrogen	5.2	Detect	mg/L
MW-95-113	12/15/2020	Nitrate/Nitrite as Nitrogen	4.4	Detect	mg/L
MW-95-113	2/25/2021	Nitrate/Nitrite as Nitrogen	5.7	Detect	mg/L
MW-95-113	5/19/2021	Nitrate/Nitrite as Nitrogen	5.6	Detect	mg/L
MW-95-113	8/25/2021	Nitrate/Nitrite as Nitrogen	6.2	Detect	mg/L
MW-95-113	8/19/2020	Selenium, dissolved	5.3	Detect	µg/L
MW-95-113	9/30/2020	Selenium, dissolved	5.2	Detect	µg/L
MW-95-113	10/20/2020	Selenium, dissolved	5.4	Detect	µg/L
MW-95-113	11/18/2020	Selenium, dissolved	4.8	Detect	µg/L
MW-95-113	12/15/2020	Selenium, dissolved	3.8	Detect	µg/L
MW-95-113	2/25/2021	Selenium, dissolved	4.8	Detect	µg/L
MW-95-113	5/19/2021	Selenium, dissolved	5	Detect	µg/L
MW-95-113	8/25/2021	Selenium, dissolved	4.7	Detect	µg/L

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MW-95-157	8/19/2020	Molybdenum, dissolved	7.4	Detect	µg/L
MW-95-157	9/30/2020	Molybdenum, dissolved	6.8	Detect	µg/L
MW-95-157	10/20/2020	Molybdenum, dissolved	4.7	Detect	µg/L
MW-95-157	11/18/2020	Molybdenum, dissolved	3.5	Detect	µg/L
MW-95-157	12/15/2020	Molybdenum, dissolved	5.7	Detect	µg/L
MW-95-157	2/25/2021	Molybdenum, dissolved	5	Detect	µg/L
MW-95-157	5/19/2021	Molybdenum, dissolved	4.8	Detect	µg/L
MW-95-157	8/25/2021	Molybdenum, dissolved	4.1	Detect	µg/L
MW-95-157	8/19/2020	Nitrate/Nitrite as Nitrogen	7.1	Detect	mg/L
MW-95-157	9/30/2020	Nitrate/Nitrite as Nitrogen	7.8	Detect	mg/L
MW-95-157	10/20/2020	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-95-157	11/18/2020	Nitrate/Nitrite as Nitrogen	8	Detect	mg/L
MW-95-157	12/15/2020	Nitrate/Nitrite as Nitrogen	7.8	Detect	mg/L
MW-95-157	2/25/2021	Nitrate/Nitrite as Nitrogen	8.9	Detect	mg/L
MW-95-157	5/19/2021	Nitrate/Nitrite as Nitrogen	8.7	Detect	mg/L
MW-95-157	8/25/2021	Nitrate/Nitrite as Nitrogen	9.3	Detect	mg/L
MW-95-157	8/19/2020	Selenium, dissolved	6.3	Detect	µg/L
MW-95-157	9/30/2020	Selenium, dissolved	7.7	Detect	µg/L
MW-95-157	10/20/2020	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-95-157	11/18/2020	Selenium, dissolved	0.55	Detect	µg/L
MW-95-157	12/15/2020	Selenium, dissolved	5.7	Detect	µg/L
MW-95-157	2/25/2021	Selenium, dissolved	6.3	Detect	µg/L
MW-95-157	5/19/2021	Selenium, dissolved	6.7	Detect	µg/L
MW-95-157	8/25/2021	Selenium, dissolved	7	Detect	µg/L
MW-14	9/8/2004	Nitrate (as nitrogen)	5.74	Detect	mg/L
MW-14	3/9/2006	Nitrate (as nitrogen)	5.18	Detect	mg/L
MW-14	5/2/2006	Nitrate (as nitrogen)	5.37	Detect	mg/L
MW-14	11/15/2007	Nitrate (as nitrogen)	6.3	Detect	mg/L
MW-14	10/3/2008	Nitrate (as nitrogen)	6.4	Detect	mg/L
MW-14	9/21/2009	Nitrate (as nitrogen)	5.8	Detect	mg/L
MW-14	12/7/2010	Nitrate (as nitrogen)	5.1	Detect	mg/L
MW-14	12/9/2011	Nitrate (as nitrogen)	4.7	Detect	mg/L
MW-22	6/7/2004	Nitrate (as nitrogen)	4	Non-Detect	mg/L
MW-22	6/17/2005	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-22	3/15/2006	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-22	10/10/2007	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-22	10/3/2008	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-22	9/29/2009	Nitrate (as nitrogen)	5	Non-Detect	mg/L
MW-22	12/7/2010	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-22	12/16/2011	Nitrate (as nitrogen)	5	Non-Detect	mg/L
MW-27-060	11/13/2007	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-27-060	10/3/2008	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-27-060	12/10/2008	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-27-060	10/1/2009	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-27-060	12/7/2010	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-27-060	12/5/2011	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-27-060	2/7/2012	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-27-060	10/1/2012	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-27-085	3/6/2006	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-27-085	12/11/2007	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-27-085	10/3/2008	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-27-085	10/1/2009	Nitrate (as nitrogen)	5	Non-Detect	mg/L

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MW-27-085	12/7/2010	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-27-085	12/5/2011	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-27-085	2/7/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-27-085	10/1/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-32-035	12/11/2006	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-32-035	3/6/2007	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-32-035	4/30/2007	Nitrate (as nitrogen)	0.2	Non-Detect	mg/L
MW-32-035	10/1/2007	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-32-035	10/3/2008	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-32-035	9/22/2009	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-32-035	12/9/2010	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-32-035	12/9/2011	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-33-040	12/12/2007	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-33-040	10/6/2008	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-33-040	9/24/2009	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-33-040	12/10/2010	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-33-040	12/12/2011	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-33-040	2/8/2012	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-33-040	4/23/2012	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-33-040	9/10/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-33-090	12/13/2007	Nitrate (as nitrogen)	1.87	Detect	mg/L
MW-33-090	10/6/2008	Nitrate (as nitrogen)	2.2	Detect	mg/L
MW-33-090	9/29/2009	Nitrate (as nitrogen)	2.6	Detect	mg/L
MW-33-090	12/10/2010	Nitrate (as nitrogen)	1.8	Detect	mg/L
MW-33-090	12/13/2011	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-33-090	2/9/2012	Nitrate (as nitrogen)	1.6	Detect	mg/L
MW-33-090	4/30/2012	Nitrate (as nitrogen)	1.5	Detect	mg/L
MW-33-090	9/24/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-33-150	10/9/2007	Nitrate (as nitrogen)	1.41	Detect	mg/L
MW-33-150	10/6/2008	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-33-150	9/29/2009	Nitrate (as nitrogen)	5	Non-Detect	mg/L
MW-33-150	12/10/2010	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-33-150	12/13/2011	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-33-150	2/9/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-33-150	4/23/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-33-150	9/11/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-34-055	3/8/2006	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-34-055	5/3/2006	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-34-055	10/4/2006	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-34-055	10/3/2007	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-34-055	10/7/2008	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-34-055	11/17/2009	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-34-055	12/7/2010	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-34-055	12/6/2011	Nitrate (as nitrogen)	0.5	Non-Detect	mg/L
MW-34-100	3/8/2006	Nitrate (as nitrogen)	1.39	Detect	mg/L
MW-34-100	5/3/2006	Nitrate (as nitrogen)	1.34	Detect	mg/L
MW-34-100	4/30/2007	Nitrate (as nitrogen)	1.38	Detect	mg/L
MW-34-100	10/3/2007	Nitrate (as nitrogen)	1.19	Detect	mg/L
MW-34-100	10/7/2008	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-34-100	9/30/2009	Nitrate (as nitrogen)	5	Non-Detect	mg/L
MW-34-100	12/8/2010	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-34-100	12/6/2011	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L

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MW-35-060	11/14/2007	Nitrate (as nitrogen)	2.38	Non-Detect	mg/L
MW-35-060	10/7/2008	Nitrate (as nitrogen)	2.3	Detect	mg/L
MW-35-060	9/24/2009	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-35-060	12/14/2010	Nitrate (as nitrogen)	1.9	Detect	mg/L
MW-35-060	12/7/2011	Nitrate (as nitrogen)	1.9	Detect	mg/L
MW-35-060	2/6/2012	Nitrate (as nitrogen)	1.9	Detect	mg/L
MW-35-060	4/26/2012	Nitrate (as nitrogen)	2	Detect	mg/L
MW-35-060	9/10/2012	Nitrate (as nitrogen)	1.8	Detect	mg/L
MW-35-135	5/2/2006	Nitrate (as nitrogen)	2.25	Detect	mg/L
MW-35-135	5/4/2007	Nitrate (as nitrogen)	2.39	Detect	mg/L
MW-35-135	11/14/2007	Nitrate (as nitrogen)	2.74	Non-Detect	mg/L
MW-35-135	10/7/2008	Nitrate (as nitrogen)	2.7	Detect	mg/L
MW-35-135	9/24/2009	Nitrate (as nitrogen)	3	Detect	mg/L
MW-35-135	12/14/2010	Nitrate (as nitrogen)	2.5	Detect	mg/L
MW-35-135	12/7/2011	Nitrate (as nitrogen)	2.6	Detect	mg/L
MW-35-135	4/26/2012	Nitrate (as nitrogen)	2.5	Detect	mg/L
MW-36-100	10/10/2007	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-36-100	10/7/2008	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-36-100	9/23/2009	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-36-100	12/15/2010	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-36-100	5/3/2011	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-36-100	12/6/2011	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-36-100	4/10/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-36-100	10/10/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-37S	6/10/2004	Nitrate (as nitrogen)	1.3	Detect	mg/L
MW-37S	3/13/2006	Nitrate (as nitrogen)	1.74	Detect	mg/L
MW-37S	5/4/2006	Nitrate (as nitrogen)	1.43	Detect	mg/L
MW-37S	11/14/2007	Nitrate (as nitrogen)	1.74	Non-Detect	mg/L
MW-37S	10/3/2008	Nitrate (as nitrogen)	1.8	Detect	mg/L
MW-37S	9/23/2009	Nitrate (as nitrogen)	1.8	Detect	mg/L
MW-37S	12/10/2010	Nitrate (as nitrogen)	1.5	Detect	mg/L
MW-37S	12/7/2011	Nitrate (as nitrogen)	1.4	Detect	mg/L
MW-40D	3/8/2006	Nitrate (as nitrogen)	2.35	Detect	mg/L
MW-40D	5/4/2007	Nitrate (as nitrogen)	19.7	Detect	mg/L
MW-40D	12/14/2007	Nitrate (as nitrogen)	2.91	Detect	mg/L
MW-40D	10/6/2008	Nitrate (as nitrogen)	3.5	Detect	mg/L
MW-40D	9/28/2009	Nitrate (as nitrogen)	3.3	Detect	mg/L
MW-40D	12/15/2010	Nitrate (as nitrogen)	2.9	Detect	mg/L
MW-40D	5/5/2011	Nitrate (as nitrogen)	2.7	Detect	mg/L
MW-40D	12/7/2011	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-41S	12/16/2004	Nitrate (as nitrogen)	1.33	Detect	mg/L
MW-41S	6/14/2005	Nitrate (as nitrogen)	1.3	Detect	mg/L
MW-41S	3/13/2006	Nitrate (as nitrogen)	1.32	Detect	mg/L
MW-41S	12/14/2007	Nitrate (as nitrogen)	1.32	Detect	mg/L
MW-41S	10/3/2008	Nitrate (as nitrogen)	1.5	Detect	mg/L
MW-41S	9/23/2009	Nitrate (as nitrogen)	1.6	Detect	mg/L
MW-41S	12/8/2010	Nitrate (as nitrogen)	1.3	Detect	mg/L
MW-41S	12/7/2011	Nitrate (as nitrogen)	1.2	Detect	mg/L
MW-44-125	9/23/2009	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-44-125	12/9/2010	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-44-125	5/3/2011	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-44-125	9/27/2011	Nitrate (as nitrogen)	1	Non-Detect	mg/L

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MW-44-125	12/8/2011	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-44-125	2/8/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-44-125	4/12/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-44-125	9/13/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-46-175	9/25/2009	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-46-175	12/8/2010	Nitrate (as nitrogen)	1	Non-Detect	mg/L
MW-46-175	5/3/2011	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-46-175	9/26/2011	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-46-175	12/13/2011	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-46-175	2/8/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-46-175	4/23/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-46-175	9/26/2012	Nitrate (as nitrogen)	2.5	Non-Detect	mg/L
MW-36-040	11/11/2013	Molybdenum, dissolved	8.8	Detect	µg/L
MW-36-040	12/15/2014	Molybdenum, dissolved	8	Detect	µg/L
MW-36-040	12/8/2015	Molybdenum, dissolved	5.8	Detect	µg/L
MW-36-040	12/7/2016	Molybdenum, dissolved	6.1	Detect	µg/L
MW-36-040	12/6/2017	Molybdenum, dissolved	4	Detect	µg/L
MW-36-040	12/6/2018	Molybdenum, dissolved	3.5	Detect	µg/L
MW-36-040	12/4/2019	Molybdenum, dissolved	2.4	Detect	µg/L
MW-36-040	12/15/2020	Molybdenum, dissolved	2.9	Detect	µg/L
MW-36-040	11/11/2013	Nitrate/Nitrite as Nitrogen	0.01	Non-Detect	mg/L
MW-36-040	12/15/2014	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-36-040	12/8/2015	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-36-040	12/7/2016	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-36-040	12/6/2017	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-36-040	12/6/2018	Nitrate/Nitrite as Nitrogen	0.1	Non-Detect	mg/L
MW-36-040	12/4/2019	Nitrate/Nitrite as Nitrogen	0.062	Detect	mg/L
MW-36-040	12/15/2020	Nitrate/Nitrite as Nitrogen	0.05	Non-Detect	mg/L
MW-36-040	11/11/2013	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-36-040	12/15/2014	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-36-040	12/8/2015	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-36-040	12/7/2016	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-36-040	12/6/2017	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-36-040	12/6/2018	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-36-040	12/4/2019	Selenium, dissolved	0.5	Non-Detect	µg/L
MW-36-040	12/15/2020	Selenium, dissolved	0.5	Non-Detect	µg/L

Notes:

1. Monitoring well MW-44-070 is included in the COPC Perimeter Assessment Plan. Shewhart control limits could not be calculated for this well because the sample size is less than eight; therefore, analytical results for this well are not shown in the table.

Abbreviations:

COPC = constituent of potential concern

ID = identification

mg/L= milligram(s) per liter

µg/L = microgram(s) per liter

Table D-2
Shewhart Control Limits
Appendix D COPC Perimeter Assessment Plan Methodology
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Topock, California

Well	Analyte	Sample Size	Detects	FOD	SS [1] Min Detect	SS [1] Max Detect	SS [1] Min ND	SS [1] Max ND	SS [1] Mean [2]	SS [1] Median	SS [1] SD [2]	Distribution [3]	SCL Basis [4]	Final SCL [2,4,5]
MW-14	Molybdenum, dissolved	8	8	100%	10	13	NA	NA	12	12	1.3	Normal	Normal SCL	19
MW-14	Nitrate (as nitrogen)	8	8	100%	4.7	6.4	NA	NA	5.6	5.6	0.59	Normal	Normal SCL	8.6
MW-14	Nitrate/Nitrite as Nitrogen	8	8	100%	2.8	3.8	NA	NA	3.4	3.4	0.33	Normal	Normal SCL	5.1
MW-14	Selenium, dissolved	8	8	100%	1.8	2.2	NA	NA	2.0	2	0.14	Normal	Normal SCL	2.7
MW-22	Molybdenum, dissolved	8	8	100%	28	39	NA	NA	34	32	4.2	Normal	Normal SCL	55
MW-22	Nitrate (as nitrogen)	8	0	0%	NA	NA	0.50	5.0	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-22	Selenium, dissolved	8	1	13%	0.55	0.55	0.50	2.5	NA	2.5	NA	Nonparametric	Max Detect (%NDs > 50%)	0.55 [6]
MW-23-060	Molybdenum, dissolved	8	8	100%	9.6	25	NA	NA	20	22.5	5.8	Quasi-Normal	Normal SCL	49
MW-23-060	Selenium, dissolved	8	8	100%	4.5	5.9	NA	NA	5.0	4.8	0.44	Normal	Normal SCL	7.2
MW-23-080	Molybdenum, dissolved	8	8	100%	31	47	NA	NA	42	43	5.0	Normal	Normal SCL	67
MW-23-080	Selenium, dissolved	8	8	100%	4.8	5.6	NA	NA	5.2	5.2	0.25	Normal	Normal SCL	6.5
MW-27-060	Molybdenum, dissolved	8	8	100%	3.7	4.6	NA	NA	4.3	4.35	0.32	Normal	Normal SCL	5.9
MW-27-060	Nitrate (as nitrogen)	8	0	0%	NA	NA	0.50	1.0	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-27-060	Nitrate/Nitrite as Nitrogen	8	0	0%	NA	NA	0.010	0.10	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-27-060	Selenium, dissolved	8	0	0%	NA	NA	0.50	0.50	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-27-085	Molybdenum, dissolved	8	8	100%	16	21	NA	NA	18	18	1.7	Normal	Normal SCL	27
MW-27-085	Nitrate (as nitrogen)	8	0	0%	NA	NA	0.50	5.0	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-27-085	Nitrate/Nitrite as Nitrogen	8	1	13%	0.061	0.061	0.050	0.10	NA	0.050	NA	Nonparametric	Max Detect (%NDs > 50%)	0.061 [6]
MW-27-085	Selenium, dissolved	8	0	0%	NA	NA	0.50	2.5	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-32-035	Molybdenum, dissolved	8	8	100%	9.7	15	NA	NA	13	13	1.6	Normal	Normal SCL	21
MW-32-035	Nitrate (as nitrogen)	8	0	0%	NA	NA	0.20	2.5	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-32-035	Nitrate/Nitrite as Nitrogen	8	4	50%	0.051	2.3	0.050	0.10	NA	0.076	NA	Nonparametric	Max Detect (distribution)	2.3
MW-32-035	Selenium, dissolved	8	0	0%	NA	NA	0.50	2.5	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-33-040	Molybdenum, dissolved	8	8	100%	120	530	NA	NA	260	180	160	Normal	Normal SCL	1100
MW-33-040	Nitrate (as nitrogen)	8	0	0%	NA	NA	1.0	2.50	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-33-040	Nitrate/Nitrite as Nitrogen	8	5	63%	0.077	0.41	0.050	0.050	0.18	0.16	0.13	Normal	Normal SCL	0.83
MW-33-040	Selenium, dissolved	8	4	50%	0.52	11	0.50	2.5	NA	0.69	NA	Nonparametric	Max Detect (distribution)	11
MW-33-090	Molybdenum, dissolved	8	8	100%	8.2	11	NA	NA	9.4	9.2	1.2	Normal	Normal SCL	15
MW-33-090	Nitrate (as nitrogen)	8	6	75%	1.5	2.6	2.5	2.5	1.9	2.0	0.35	Normal	Normal SCL	3.7
MW-33-090	Nitrate/Nitrite as Nitrogen	8	8	100%	0.71	1.1	NA	NA	NA	1.1	NA	Nonparametric	Max Detect (distribution)	1.1
MW-33-090	Selenium, dissolved	8	0	0%	NA	NA	0.50	0.50	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-33-150	Molybdenum, dissolved	8	8	100%	41	50	NA	NA	46	47.5	3.4	Normal	Normal SCL	63
MW-33-150	Nitrate (as nitrogen)	8	1	13%	1.41	1.41	2.5	5.0	NA	2.5	NA	Nonparametric	Max Detect (%NDs > 50%)	1.41 [6]
MW-33-150	Nitrate/Nitrite as Nitrogen	8	8	100%	0.91	1.8	NA	NA	1.4	1.5	0.26	Normal	Normal SCL	2.7
MW-33-150	Selenium, dissolved	8	7	88%	0.61	0.93	2.5	2.5	NA	0.84	NA	Nonparametric	Max Detect (distribution)	0.93 [6]
MW-34-055	Molybdenum, dissolved	8	8	100%	4.6	5.4	NA	NA	5.0	5.0	0.27	Normal	Normal SCL	6.4
MW-34-055	Nitrate (as nitrogen)	8	0	0%	NA	NA	0.50	1.0	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-34-055	Nitrate/Nitrite as Nitrogen	8	0	0%	NA	NA	0.010	0.10	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-34-055	Selenium, dissolved	8	0	0%	NA	NA	0.50	0.50	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-34-100	Molybdenum, dissolved	8	8	100%	47	85	NA	NA	61	60	11	Normal	Normal SCL	120
MW-34-100	Nitrate (as nitrogen)	8	4	50%	1.19	1.39	2.5	5.0	NA	1.9	NA	Nonparametric	Max Detect (distribution)	1.39 [6]
MW-34-100	Nitrate/Nitrite as Nitrogen	8	1	13%	0.18	0.18	0.050	0.10	NA	0.050	NA	Nonparametric	Max Detect (%NDs > 50%)	0.18
MW-34-100	Selenium, dissolved	8	0	0%	NA	NA	0.50	0.50	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-35-060	Molybdenum, dissolved	8	8	100%	8.9	15	NA	NA	3.3	10	0.28	Square Root Normal	Normal SCL	22
MW-35-060	Nitrate (as nitrogen)	8	6	75%	1.8	2.3	2.38	2.5	2.0	2.0	0.16	Normal	Normal SCL	2.8
MW-35-060	Nitrate/Nitrite as Nitrogen	8	8	100%	2.0	2.8	NA	NA	2.3	2.3	0.26	Normal	Normal SCL	3.6
MW-35-060	Selenium, dissolved	8	7	88%	1.1	1.5	2.5	2.5	0.25	1.4	0.12	Lognormal	Normal SCL	2.3
MW-35-135	Molybdenum, dissolved	8	8	100%	19	24	NA	NA	21	20.5	2.0	Normal	Normal SCL	31
MW-35-135	Nitrate (as nitrogen)	8	7	88%	2.25	3	2.74	2.74	2.4	2.6	0.48	Normal	Normal SCL	4.8
MW-35-135	Nitrate/Nitrite as Nitrogen	8	8	100%	2.3	2.7	NA	NA	2.5	2.6	0.15	Normal	Normal SCL	3.3
MW-35-135	Selenium, dissolved	8	7	88%	0.92	1.4	2.5	2.5	1.0	1.1	0.051	Quasi-Cube Root Normal	Normal SCL	2.0

Table D-2
Shewhart Control Limits
Appendix D COPC Perimeter Assessment Plan Methodology
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Topock, California

Well	Analyte	Sample Size	Detects	FOD	SS [1] Min Detect	SS [1] Max Detect	SS [1] Min ND	SS [1] Max ND	SS [1] Mean [2]	SS [1] Median	SS [1] SD [2]	Distribution [3]	SCL Basis [4]	Final SCL [2,4,5]
MW-36-040	Molybdenum, dissolved	8	8	100%	2.4	8.8	NA	NA	5.2	4.9	2.4	Normal	Normal SCL	17
MW-36-040	Nitrate/Nitrite as Nitrogen	8	1	13%	0.062	0.062	0.010	0.10	NA	0.05	NA	Nonparametric	Max Detect (%NDs > 50%)	0.062 [6]
MW-36-040	Selenium, dissolved	8	0	0%	NA	NA	0.50	0.50	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-36-100	Molybdenum, dissolved	8	8	100%	18	23	NA	NA	20	19.5	1.7	Normal	Normal SCL	29
MW-36-100	Nitrate (as nitrogen)	8	0	0%	NA	NA	1.0	2.5	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-36-100	Nitrate/Nitrite as Nitrogen	8	0	0%	NA	NA	0.050	0.10	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-36-100	Selenium, dissolved	8	0	0%	NA	NA	0.50	0.50	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-37S	Molybdenum, dissolved	8	8	100%	14	19.9	NA	NA	16	15.5	1.9	Normal	Normal SCL	26
MW-37S	Nitrate (as nitrogen)	8	7	88%	1.3	1.8	1.74	1.74	1.5	1.6	0.31	Normal	Normal SCL	3.1
MW-37S	Selenium, dissolved	8	7	88%	0.68	1.37	2.5	2.5	-0.13	0.81	0.26	Quasi-Lognormal	Normal SCL	3.2
MW-40D	Molybdenum, dissolved	8	8	100%	41	54	NA	NA	49	49.5	5.0	Normal	Normal SCL	74
MW-40D	Nitrate (as nitrogen)	8	7	88%	2.35	19.7	2.5	2.5	NA	2.9	NA	Nonparametric	Max Detect (distribution)	19.7
MW-40D	Nitrate/Nitrite as Nitrogen	8	8	100%	0.57	10	NA	NA	1.4	2.6	0.37	Cube Root Normal	Normal SCL	34
MW-40D	Selenium, dissolved	8	7	88%	0.78	2.5	2.5	2.5	1.6	1.9	0.58	Normal	Normal SCL	4.5
MW-40S	Molybdenum, dissolved	8	8	100%	5.2	30	NA	NA	17	16.5	8.4	Normal	Normal SCL	59
MW-40S	Nitrate/Nitrite as Nitrogen	8	8	100%	3.5	10	NA	NA	6.3	5.8	2.8	Normal	Normal SCL	20
MW-40S	Selenium, dissolved	8	8	100%	1.8	6.1	NA	NA	4.3	4.8	1.8	Normal	Normal SCL	13
MW-41M	Nitrate/Nitrite as Nitrogen	8	8	100%	0.52	0.675	NA	NA	0.62	0.65	0.055	Normal	Normal SCL	0.90
MW-41S	Molybdenum, dissolved	8	8	100%	13	16	NA	NA	NA	15	NA	Nonparametric	Max Detect (distribution)	16
MW-41S	Nitrate (as nitrogen)	8	8	100%	1.2	1.6	NA	NA	1.4	1.3	0.13	Normal	Normal SCL	2.1
MW-41S	Nitrate/Nitrite as Nitrogen	8	8	100%	1.2	2.5	NA	NA	1.7	1.6	0.50	Normal	Normal SCL	4.2
MW-41S	Selenium, dissolved	8	8	100%	0.61	1.9	NA	NA	1.2	1.1	0.54	Normal	Normal SCL	3.9
MW-42-030	Molybdenum, dissolved	8	8	100%	19	29	NA	NA	23	21.5	3.6	Normal	Normal SCL	41
MW-42-030	Nitrate/Nitrite as Nitrogen	8	4	50%	0.0125	0.15	0.050	0.10	0.045	0.052	0.046	Normal	Normal SCL	0.28
MW-42-030	Selenium, dissolved	8	0	0%	NA	NA	0.50	0.50	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-44-125	Molybdenum, dissolved	8	8	100%	10	230	NA	NA	100	73.5	97	Normal	Normal SCL	590
MW-44-125	Nitrate (as nitrogen)	8	0	0%	NA	NA	1.0	2.5	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-44-125	Nitrate/Nitrite as Nitrogen	8	2	25%	0.090	0.18	0.050	0.10	NA	0.050	NA	Nonparametric	Max Detect (%NDs > 50%)	0.18
MW-44-125	Selenium, dissolved	8	0	0%	NA	NA	0.50	0.50	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-46-175	Molybdenum, dissolved	8	8	100%	180	210	NA	NA	190	190	11	Normal	Normal SCL	250
MW-46-175	Nitrate (as nitrogen)	8	0	0%	NA	NA	1.0	2.5	NA	NA	NA	Unknown	%NDs = 100%	DQR
MW-46-175	Nitrate/Nitrite as Nitrogen	8	8	100%	0.92	1.1	NA	NA	1.0	1	0.073	Normal	Normal SCL	1.4
MW-46-175	Selenium, dissolved	8	6	75%	0.55	1.0	0.50	2.5	-0.42	0.67	0.23	Quasi-Lognormal	Normal SCL	2.1
MW-71-035	Molybdenum, dissolved	8	8	100%	13	21	NA	NA	16	15	2.4	Normal	Normal SCL	28
MW-71-035	Nitrate/Nitrite as Nitrogen	8	4	50%	0.051	0.19	0.050	0.10	NA	0.068	NA	Nonparametric	Max Detect (distribution)	0.19
MW-71-035	Selenium, dissolved	8	1	13%	0.52	0.52	0.50	2.5	NA	0.5	NA	Nonparametric	Max Detect (%NDs > 50%)	0.52 [6]
MW-89-183	Molybdenum, dissolved	8	8	100%	7.4	10	NA	NA	8.8	8.75	0.97	Normal	Normal SCL	14
MW-89-183	Nitrate/Nitrite as Nitrogen	8	8	100%	2.2	3.3	NA	NA	2.7	2.65	0.36	Normal	Normal SCL	4.5
MW-89-183	Selenium, dissolved	8	8	100%	1.9	3.1	NA	NA	2.5	2.55	0.41	Normal	Normal SCL	4.6
MW-89-273	Molybdenum, dissolved	8	8	100%	33	43	NA	NA	38	37.5	3.7	Normal	Normal SCL	57
MW-89-273	Nitrate/Nitrite as Nitrogen	8	8	100%	2.1	3.0	NA	NA	2.7	2.8	0.27	Quasi-Normal	Normal SCL	4.1
MW-89-273	Selenium, dissolved	8	8	100%	3.3	3.9	NA	NA	3.6	3.5	0.18	Normal	Normal SCL	4.5
MW-90-031	Molybdenum, dissolved	8	8	100%	13	17	NA	NA	16	16	1.3	Quasi-Normal	Normal SCL	23
MW-90-031	Nitrate/Nitrite as Nitrogen	8	5	63%	0.077	0.14	0.050	0.10	0.088	0.097	0.027	Normal	Normal SCL	0.22
MW-90-031	Selenium, dissolved	8	4	50%	0.52	0.68	0.50	0.50	NA	0.51	NA	Nonparametric	Max Detect (distribution)	0.68
MW-95-113	Molybdenum, dissolved	8	8	100%	3.9	6.4	NA	NA	1.7	4.35	0.091	Cube Root Normal	Normal SCL	10
MW-95-113	Nitrate/Nitrite as Nitrogen	8	8	100%	4.4	6.2	NA	NA	5.4	5.6	0.57	Normal	Normal SCL	8.3
MW-95-113	Selenium, dissolved	8	8	100%	3.8	5.4	NA	NA	4.9	4.9	0.50	Normal	Normal SCL	7.4
MW-95-157	Molybdenum, dissolved	8	8	100%	3.5	7.4	NA	NA	5.3	4.9	1.3	Normal	Normal SCL	12
MW-95-157	Nitrate/Nitrite as Nitrogen	8	7	88%	7.1	9.3	0.050	0.050	NA	7.9	NA	Nonparametric	Max Detect (distribution)	9.3
MW-95-157	Selenium, dissolved	8	7	88%	0.55	7.7	0.50	0.50	NA	6.3	NA	Nonparametric	Max Detect (distribution)	7.7

Table D-2
Shewhart Control Limits
Appendix D COPC Perimeter Assessment Plan Methodology
Fourth Quarter 2021 Quarterly Progress Report
Pacific Gas and Electric Company, Topock Compressor Station, Topock, California

Abbreviations:

COPC = constituent of potential concern
FOD = frequency of detection
NA = not available or not applicable
ND = non-detect
SCL = Shewhart Control Limit
SD = standard deviation
SS = Summary Statistics
USEPA = United States Environmental Protection Agency

Notes:

[1] Summary statistics and final SCLs are in units of micrograms per liter for molybdenum and selenium and milligrams per liter for nitrate/nitrite as nitrogen.

[2] Mean and standard deviation values based on frequency of detection as follows:
- If the dataset is 100% detect, then the values are directly calculated.
- If the dataset has less than 100% detects, but greater than 85% detects, the values are calculated using the reporting limit for non-detects.
- If the dataset has less than or equal to 85% detects, but greater than 50% detects, the values are calculated using Kaplan-Meier adjustment method.
- If the dataset is 0% detect, then the values are not calculated.

If a transformation is required to normalize the dataset, then the mean and standard deviation are based on transformed data.

[3] Distribution determined using Chemstat Software by Starpoint. Distribution was determined with the Shapiro-Wilk test with non-detects included at their full detection limit

[4] Final SCL values based on distribution and frequency of detections as follows:
- If the dataset is 100% non-detect, then future exceedances will be determined using the Double Quantification Rule (see text).
- If the dataset has non-detects greater than or equal to 50%, then final SCL is the maximum detect.
- If the dataset has non-detects less than 50% and fits either a normal, square root, cube root, or natural logarithm distribution, then the final SCL is either a normal SCL, square root SCL, cube root SCL, or lognormal SCL, respectively; if a transformation was required, then the SCL is back-transformed for convenience in comparing future data.
- If the dataset has non-detects greater than or equal to 50%, and fits either a normal, square root, cube root, or natural logarithm distribution, then the final SCL is a non-parametric SCL due to the high percentage of non-detects.

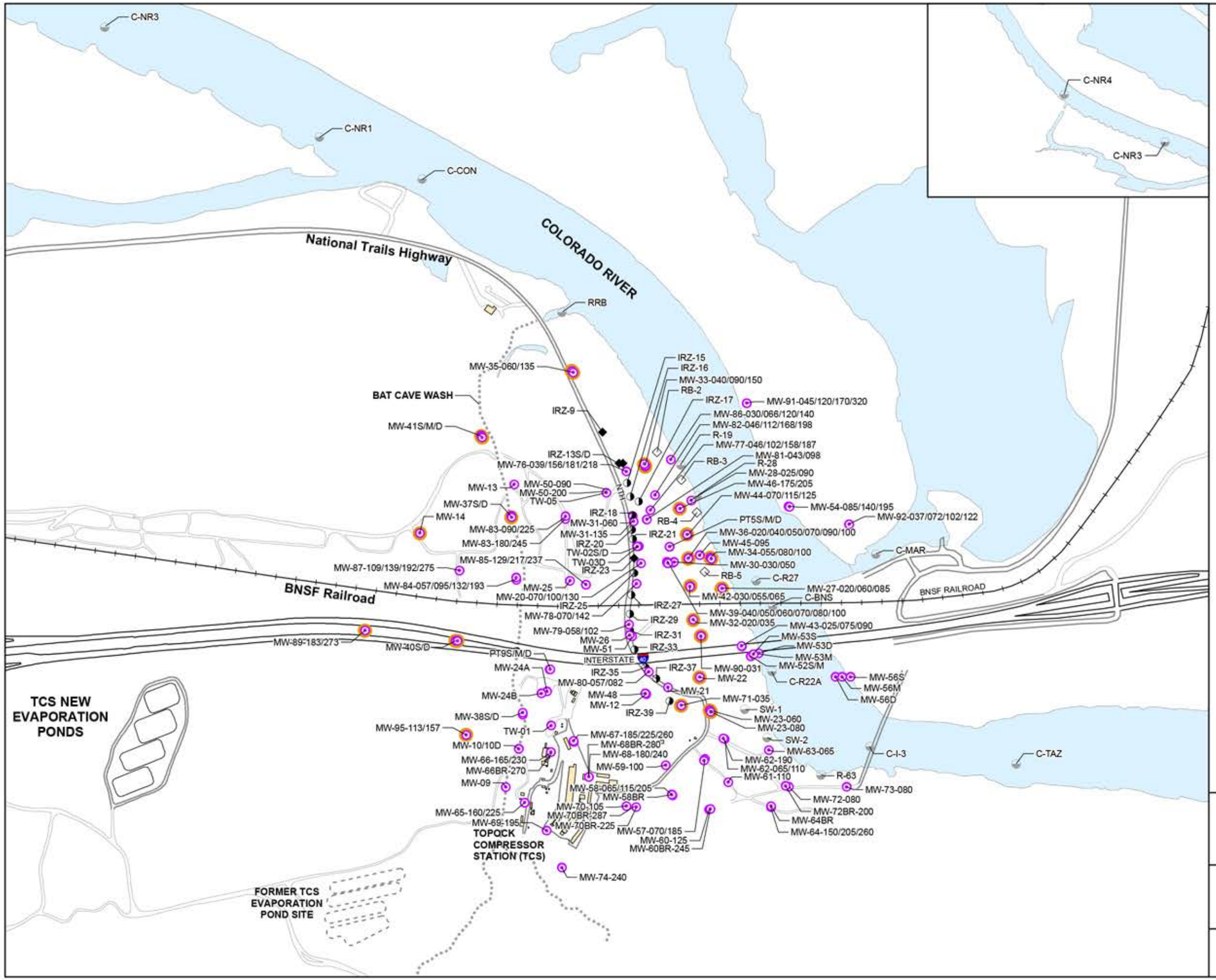
[5] SCL = average + standardized control limit x standard deviation
where the standardized control limit = 5 (USEPA 2009) and the average and standard deviation is transformed where applicable.

[6] The maximum reporting limit is greater than the maximum detected value. The maximum detected value is used as the SCL.

References:

USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. United States Environmental Protection Agency Office of Resource Conservation and Recovery. EPA 530/R-09-007. March.

Figures



LEGEND

- REMEDIATION WELL (EXTRACTION)
- REMEDIATION WELL (INJECTION)
- REMEDIATION WELL (NOT PLUMBED INTO SYSTEM CURRENTLY)
- SURFACE WATER MONITORING LOCATION (INCLUDED IN COPC MONITORING PROGRAM)
- COPC MONITORING WELL
- COPC PERIMETER ASSESSMENT PLAN MONITORING WELL
- BAT CAVE WASH

Notes:
1. NTH = National Trails Highway
2. IRZ = In Situ Reactive Zone
3. COPC = Constituent of Potential Concern

0 500 1,000
Feet

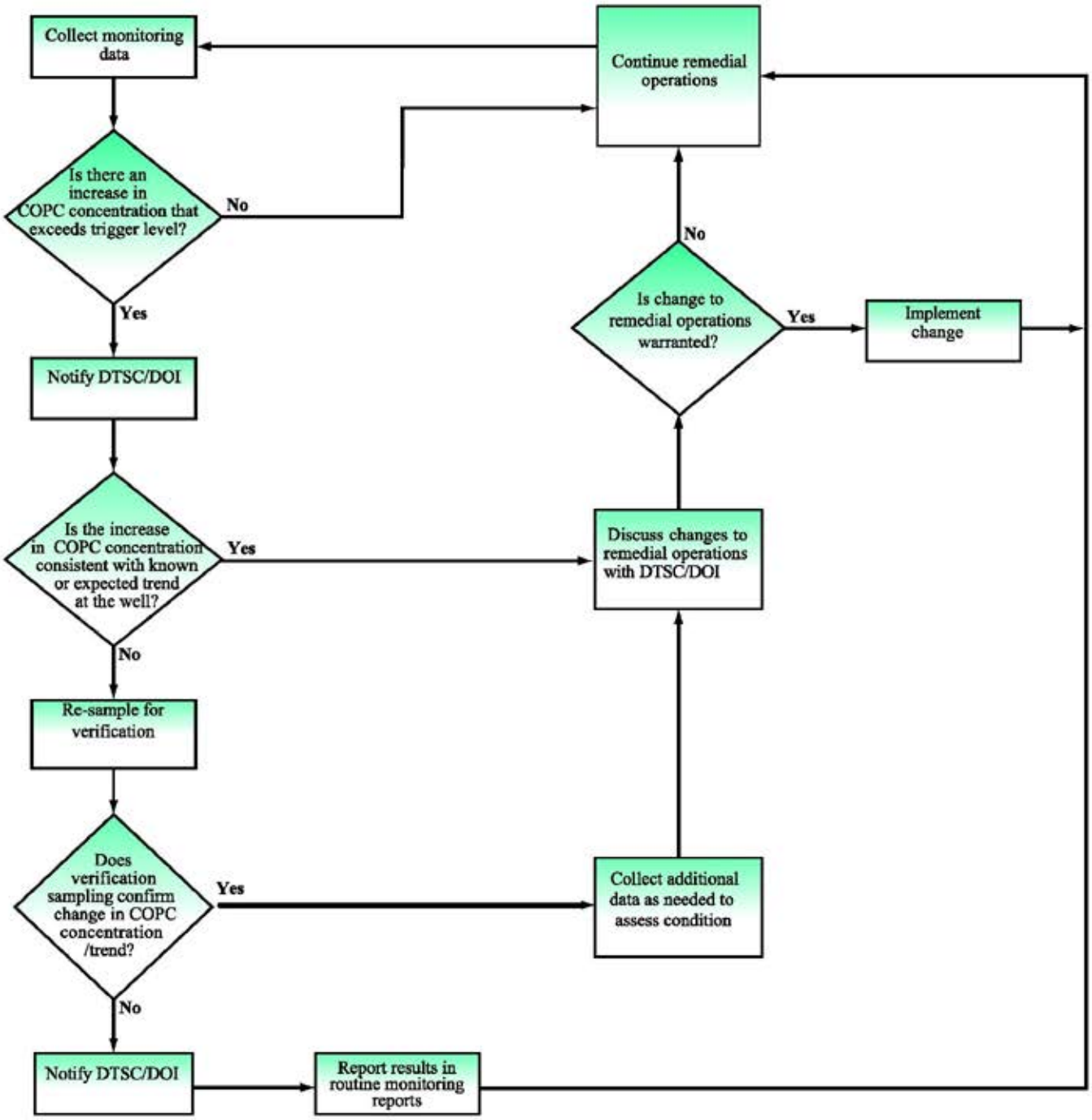
FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

COPC MONITORING NETWORK

ARCADIS

FIGURE
D-1

T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\4Q21\FINAL\FIGURE_D1_COPC MONITORING NETWORK.MXD 3/17/2022 6:55:56 PM



Notes:

1. Notification will be provided within 5 days following receipt of validated laboratory results.
2. Re-sampling to occur within 45 days of receipt of validated laboratory results.
3. Data needed to assess trend or condition may include increased sampling frequency at triggered well, increased sampling at adjacent wells (i.e., lateral, vertical), or collection of additional data to assess change in geochemical conditions.
4. Assess the gradient direction near the triggered well and evaluate potential for remedial measure optimization accordingly. Optimization may include change to pumping or injection rates.
5. Changes to manage constituents of potential concern (COPCs) will be balanced against optimization for chromium removal.
6. DTSC = California Department of Toxic Substances Control
7. DOI = U.S. Department of the Interior

FOURTH QUARTER 2021
QUARTERLY PROGRESS REPORT
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

COPC PERIMETER ASSESSMENT PLAN

ARCADIS

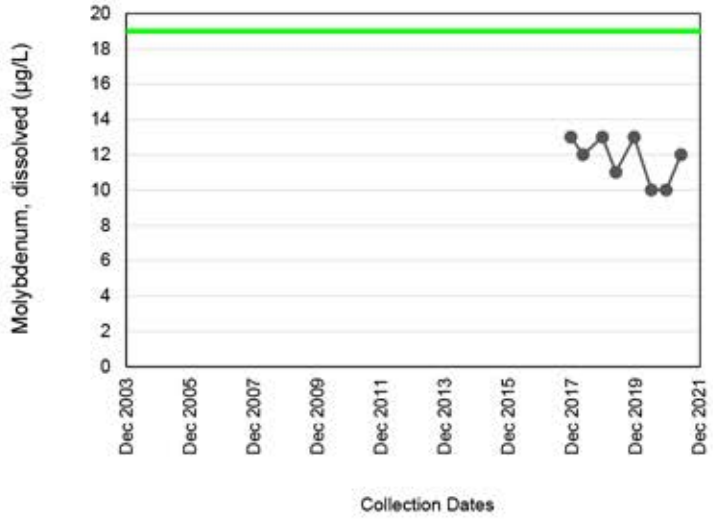
FIGURE
D-2

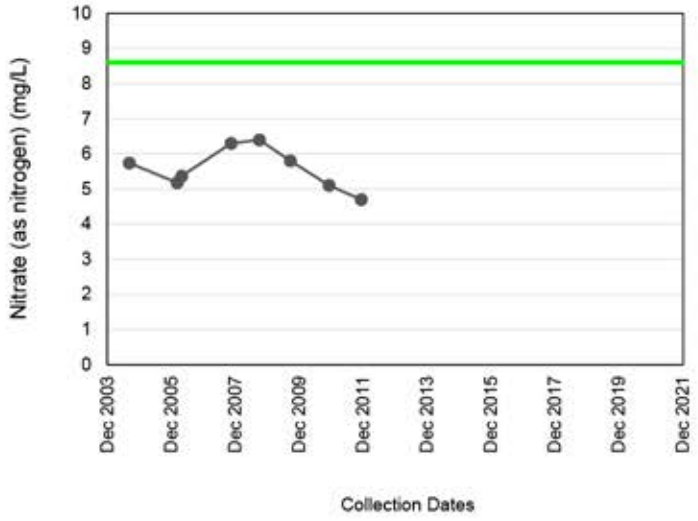
T:_ENV\PGE_TOPOCK\GEC\MXD\GMP\4Q21\FINAL\FIGURE_D2_COPC PAP DECISION TREE.MXD 3/18/2022 12:27:45 PM

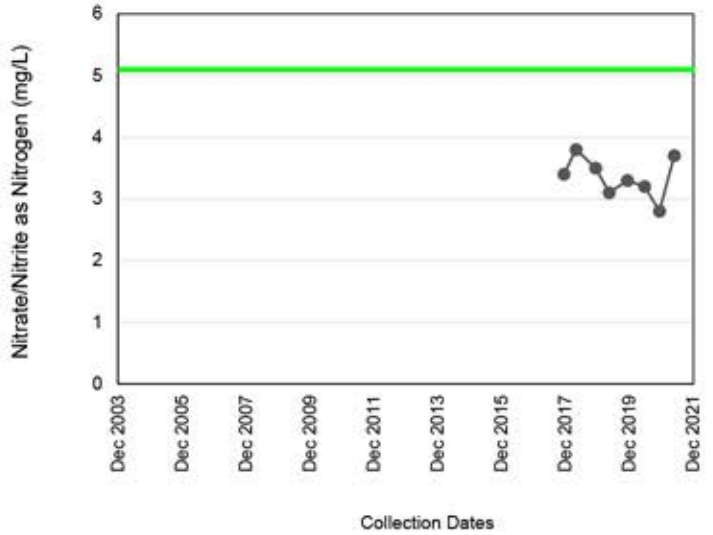
Attachment A

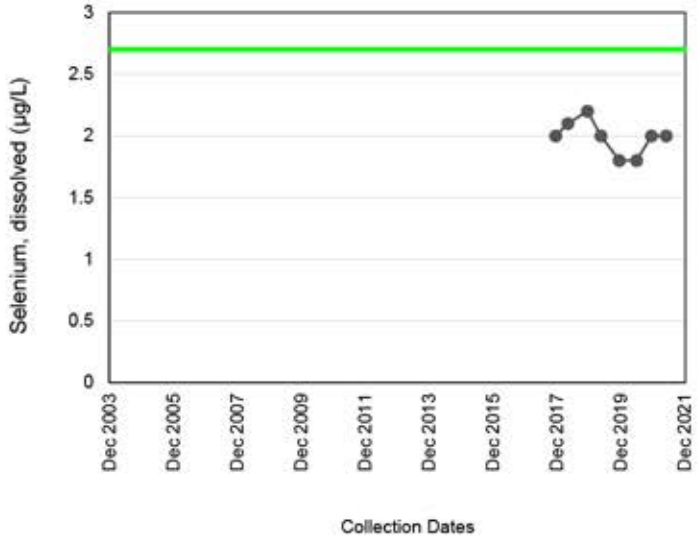
Concentration – Time Series Charts

Location: **MW-14**









Notes:

- Detects indicated by full circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

PACIFIC GAS AND ELECTRIC COMPANY
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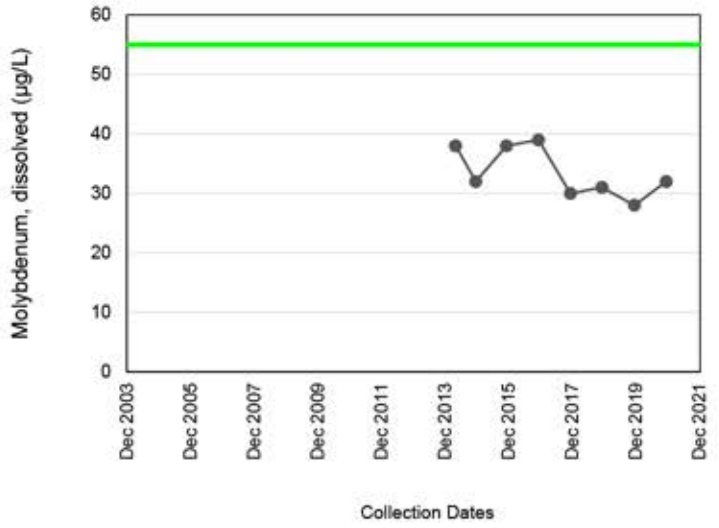
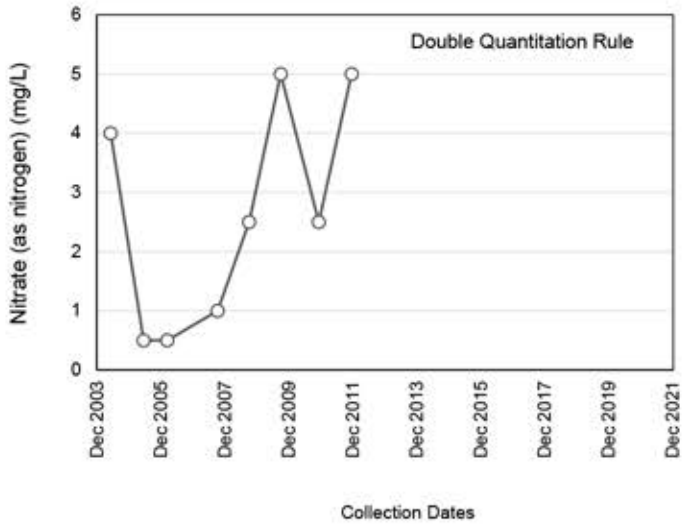
CONCENTRATION TIME SERIES CHARTS

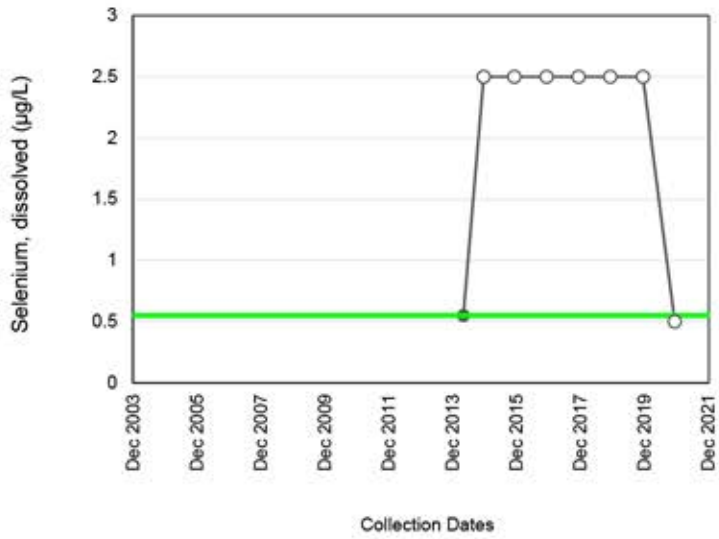
ARCADIS

FIGURE
A-1

Location: **MW-22**







Notes:

- Detects indicated by full circle and nondetects indicated by open circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

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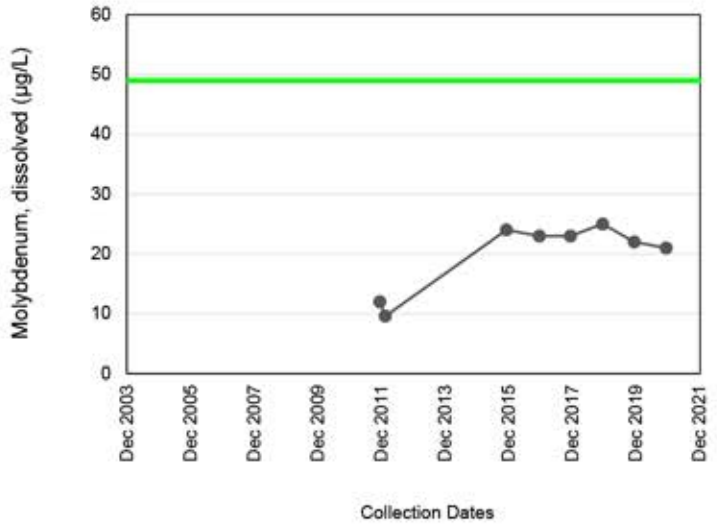
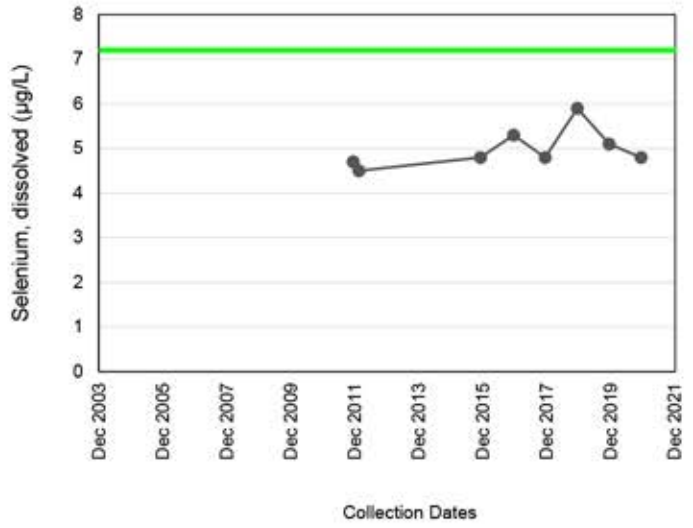
CONCENTRATION TIME SERIES CHARTS

ARCADIS

FIGURE
A-2

Location: **MW-23-060**





Notes:

- Detects indicated by full circle.
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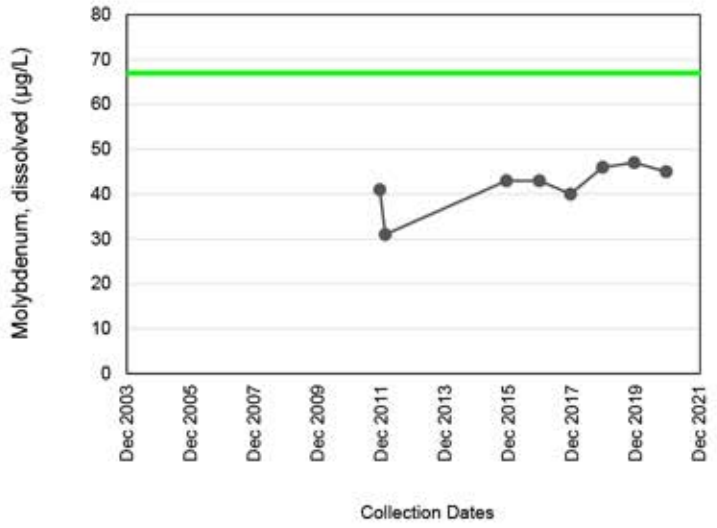
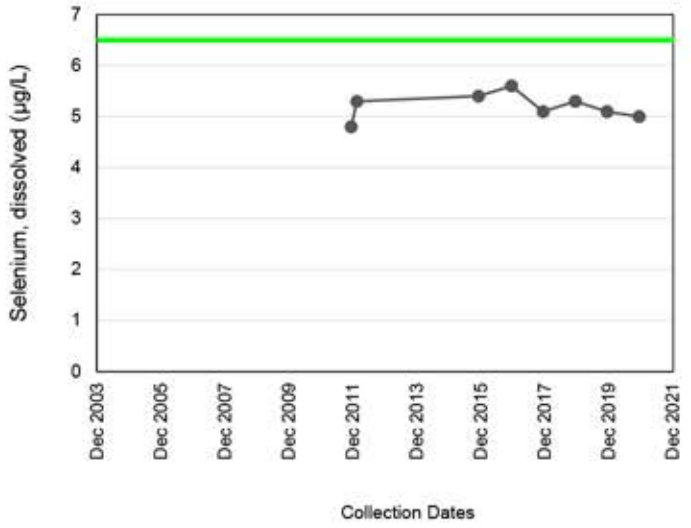
CONCENTRATION TIME SERIES CHARTS

ARCADIS

FIGURE
A-3

Location: **MW-23-080**





Notes:

- Detects indicated by full circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

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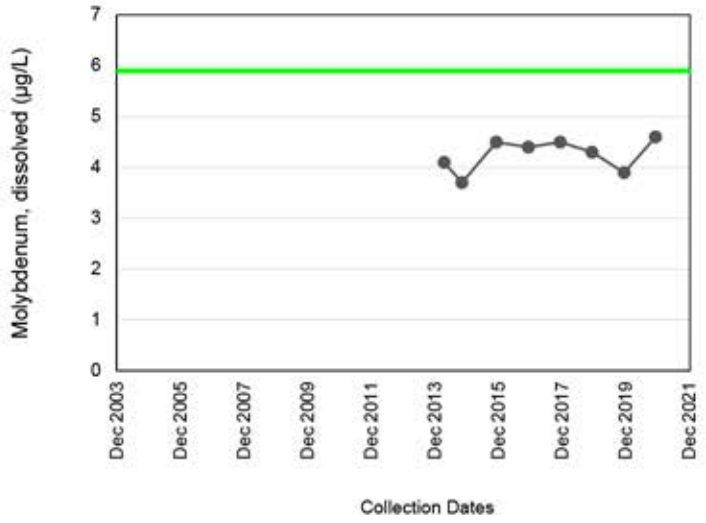
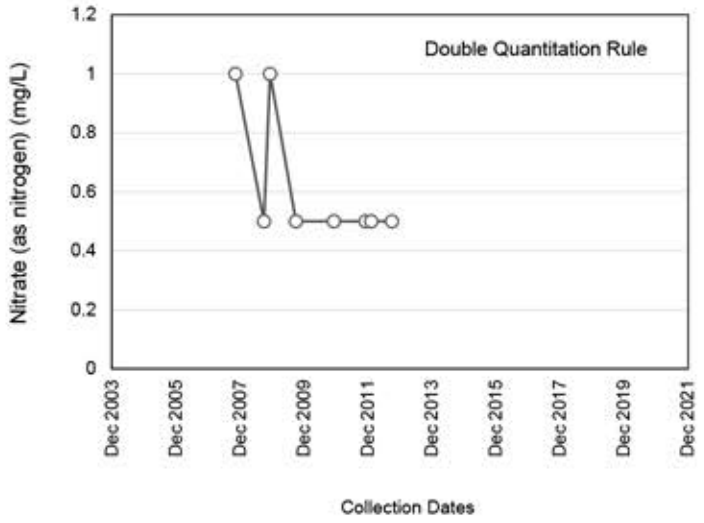
CONCENTRATION TIME SERIES CHARTS

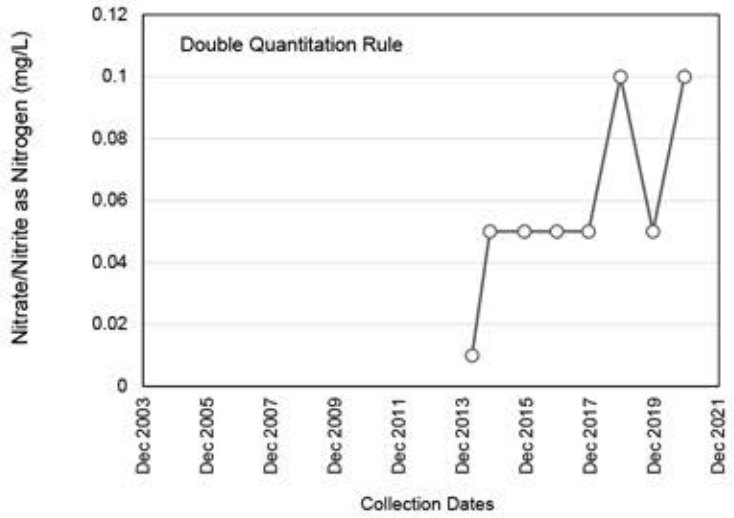
ARCADIS

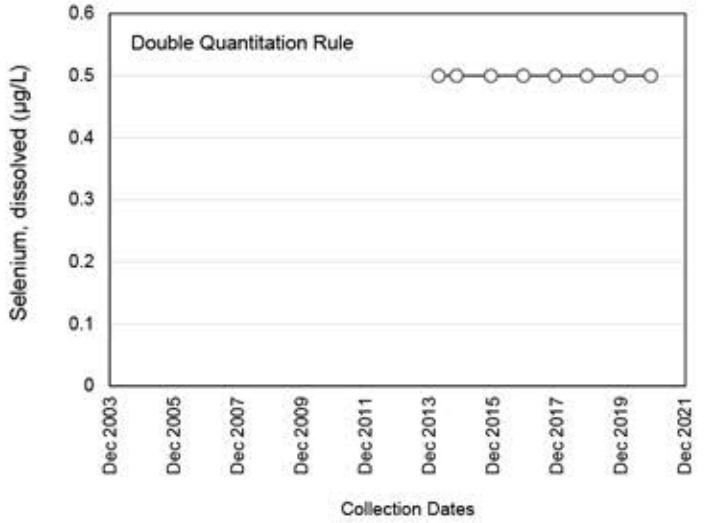
FIGURE
A-4

Location: **MW-27-060**









Notes:

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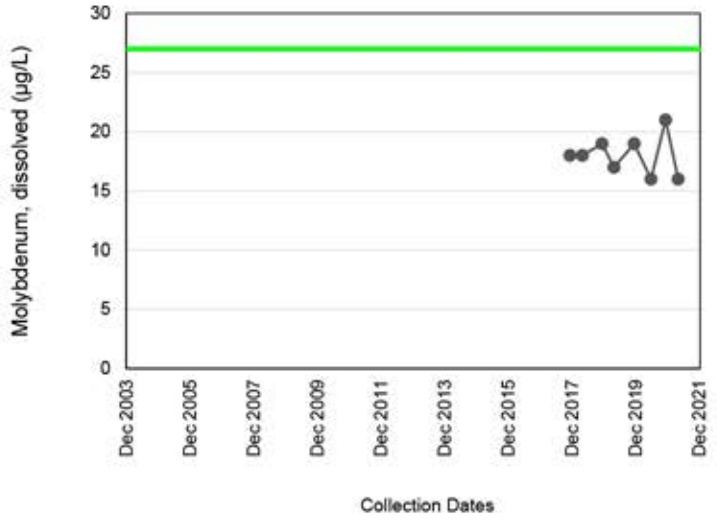
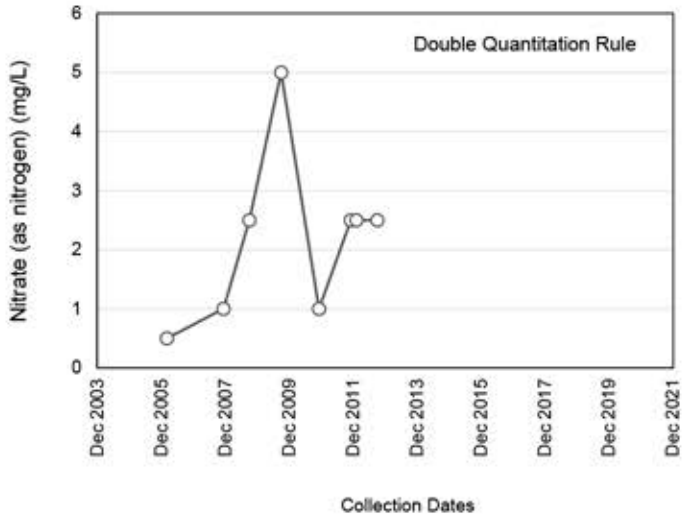
CONCENTRATION TIME SERIES CHARTS

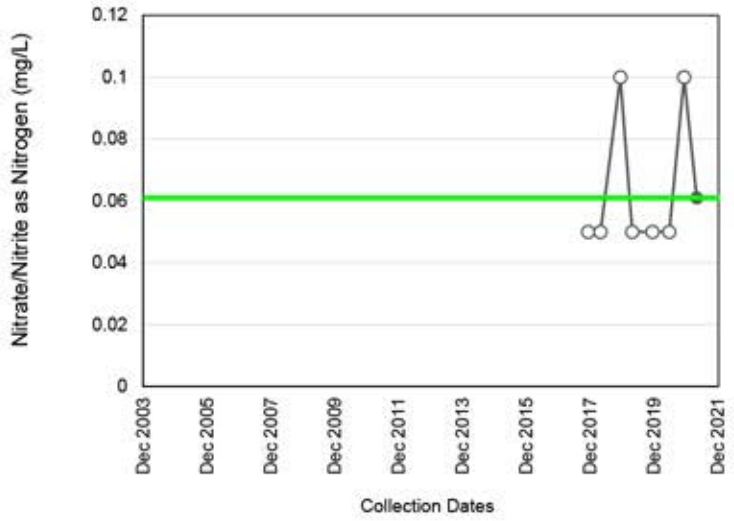
ARCADIS

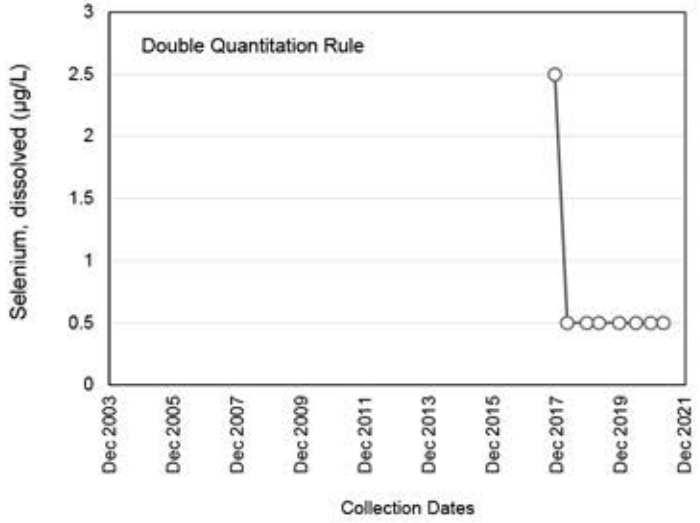
FIGURE
A-5

Location: **MW-27-085**









Notes:

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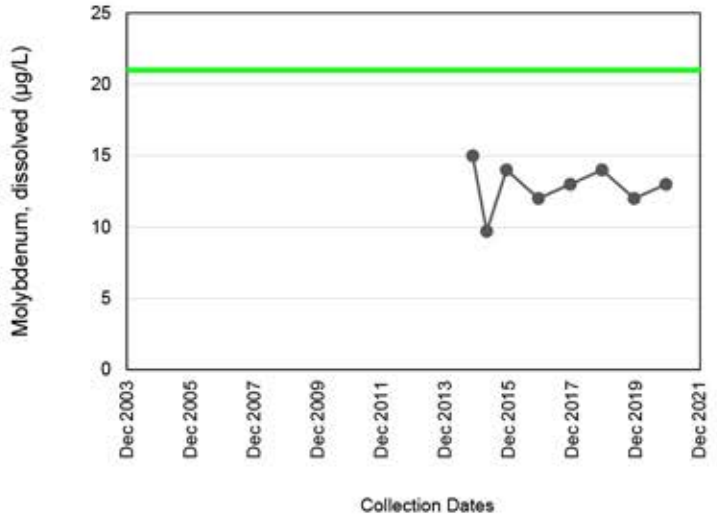
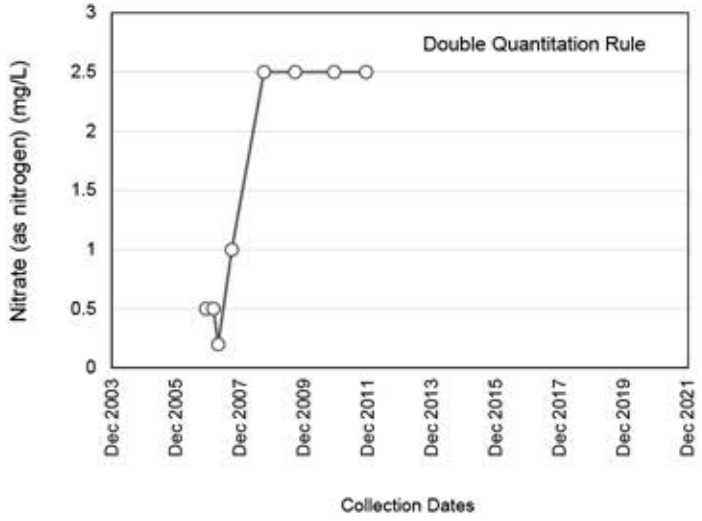
CONCENTRATION TIME SERIES CHARTS

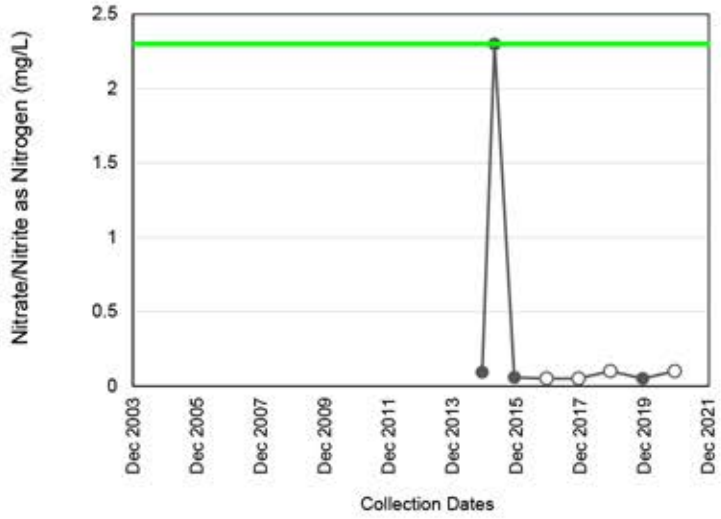
ARCADIS

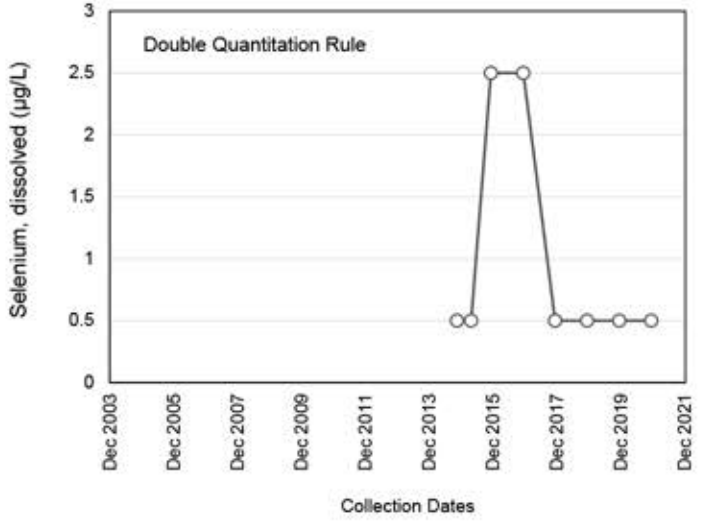
FIGURE
A-6

Location: **MW-32-035**









Notes:

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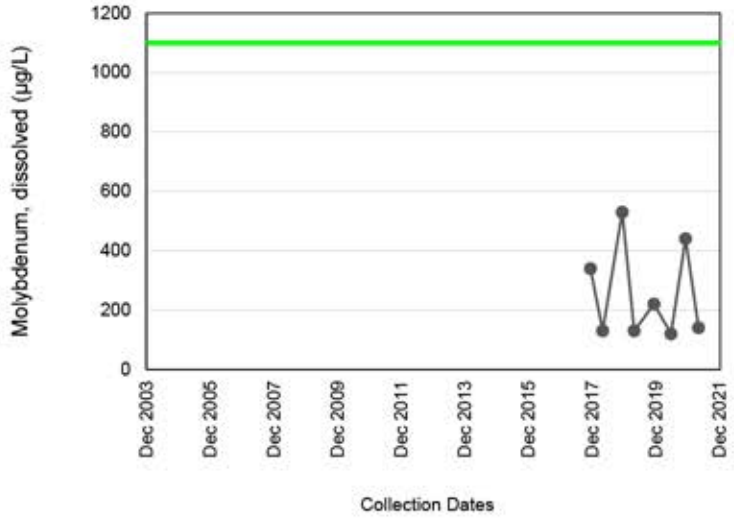
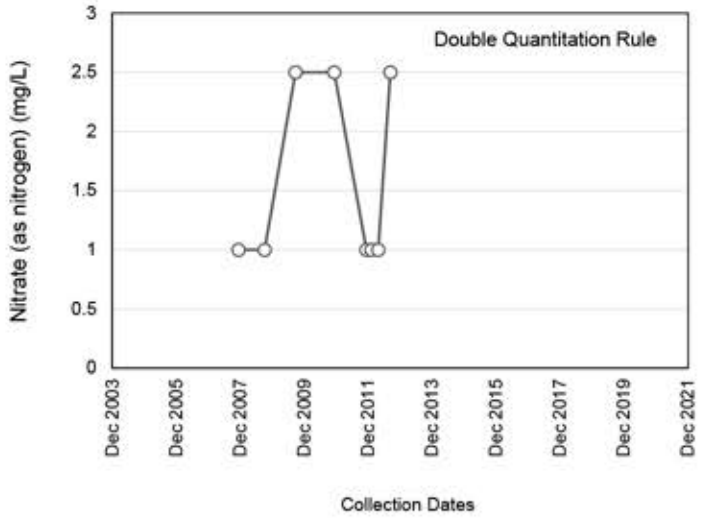
CONCENTRATION TIME SERIES CHARTS

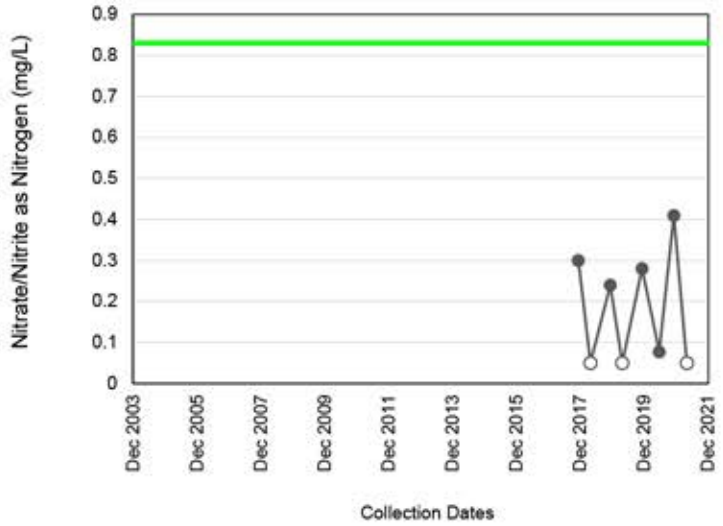
ARCADIS

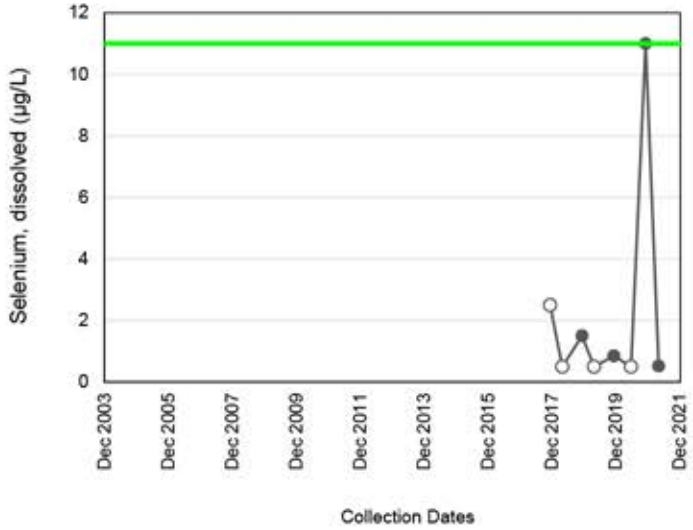
FIGURE
A-7

Location: MW-33-040









Notes:

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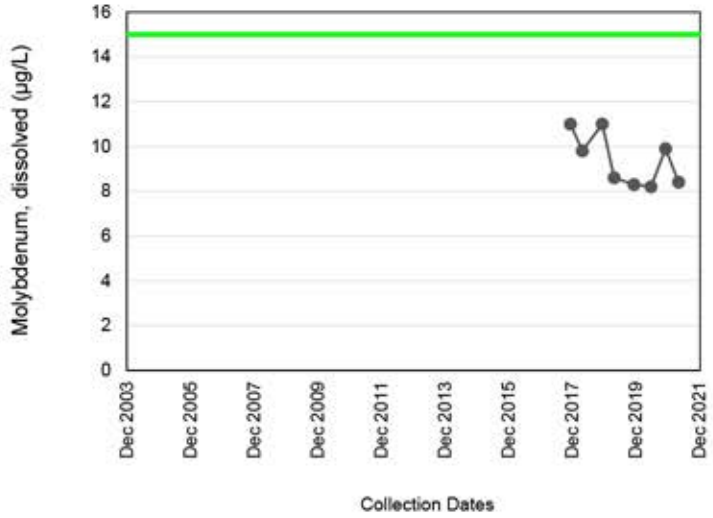
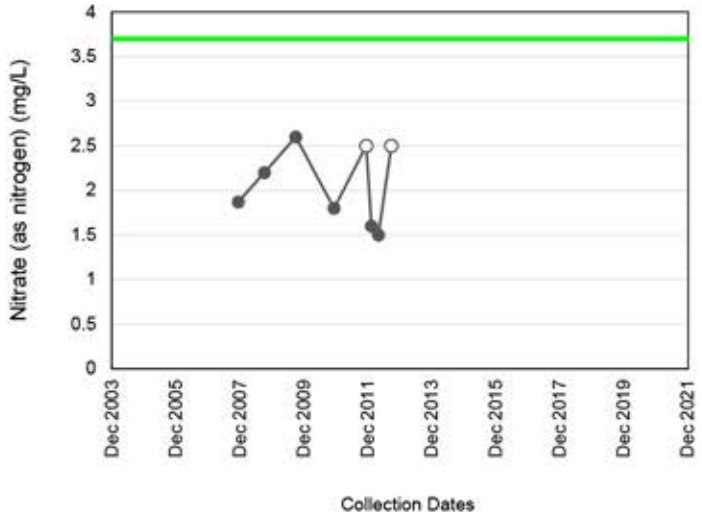
CONCENTRATION TIME SERIES CHARTS

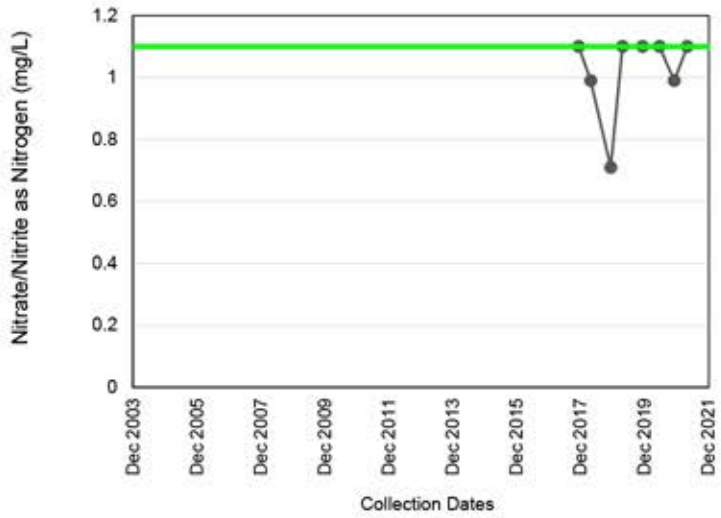
ARCADIS

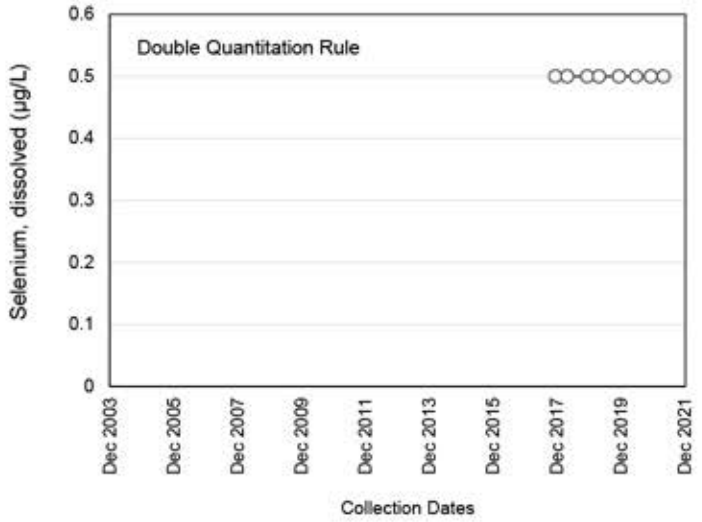
FIGURE
A-8

Location: **MW-33-090**









Notes:

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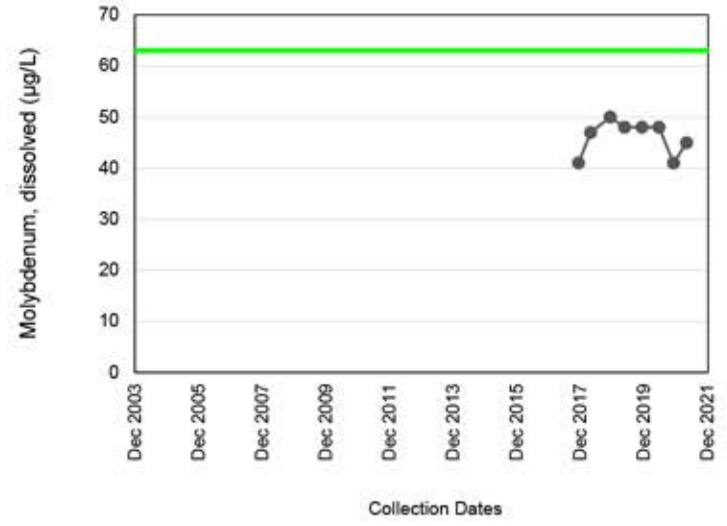
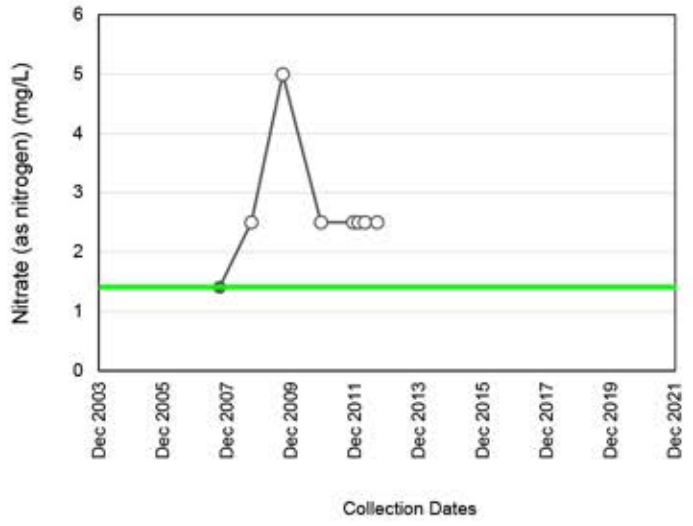
CONCENTRATION TIME SERIES CHARTS

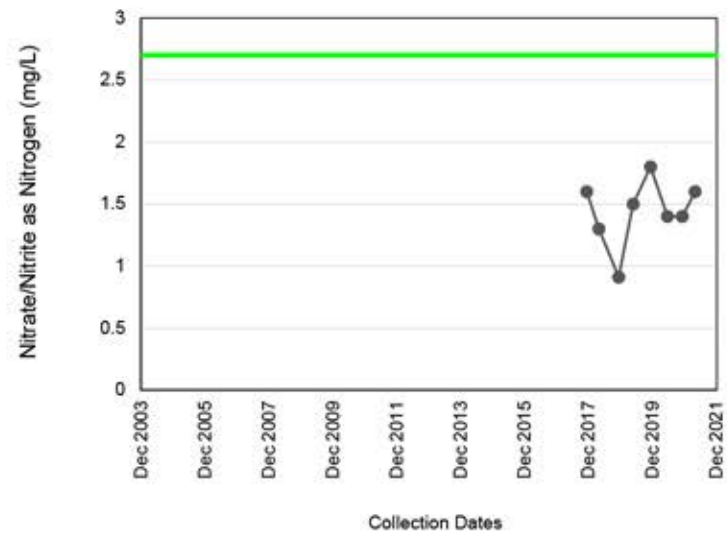
ARCADIS

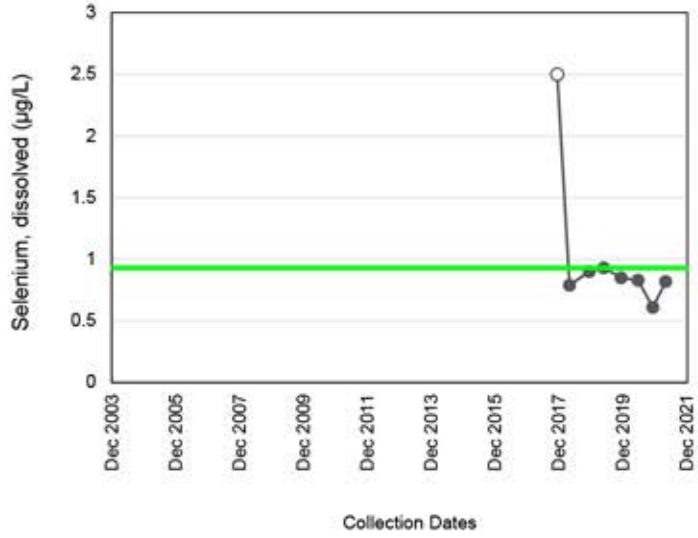
FIGURE
A-9

Location: **MW-33-150**









Notes:

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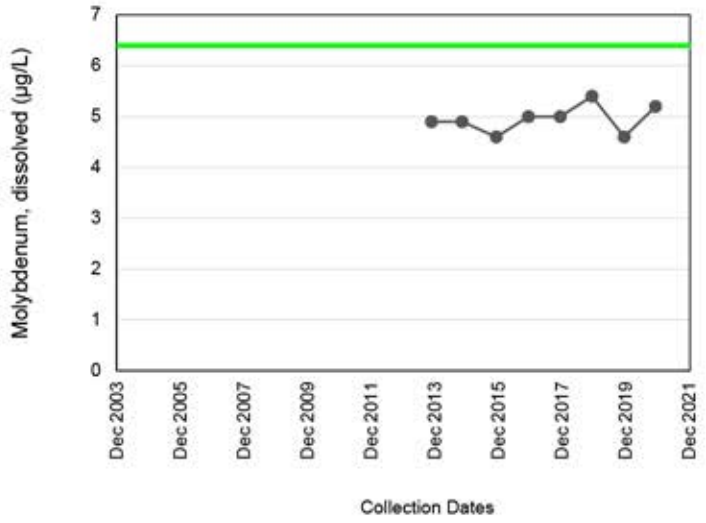
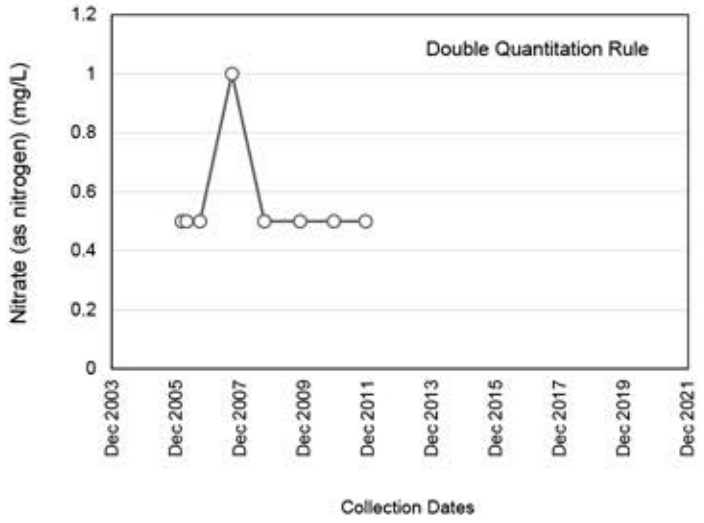
CONCENTRATION TIME SERIES CHARTS

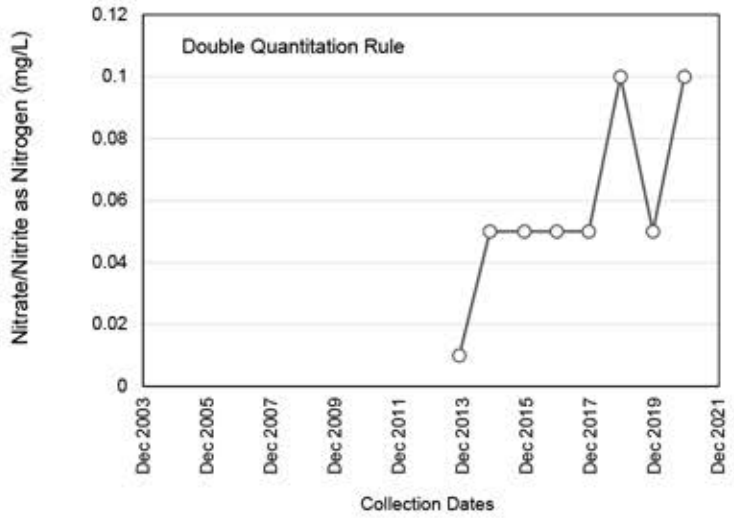
ARCADIS

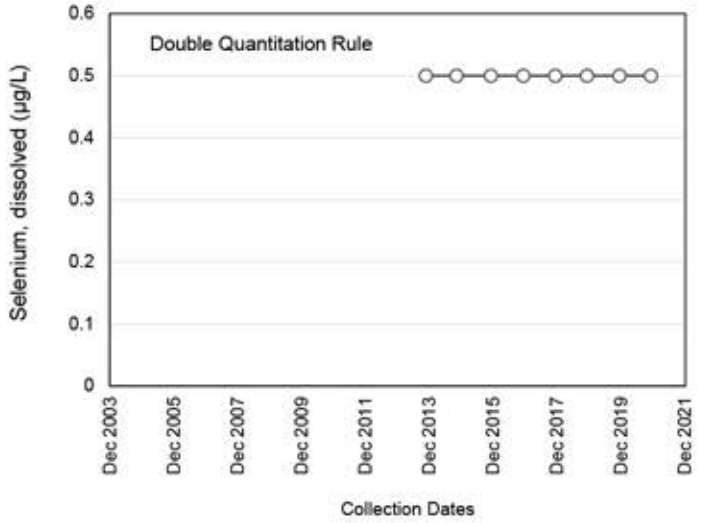
FIGURE
A-10

Location: **MW-34-055**









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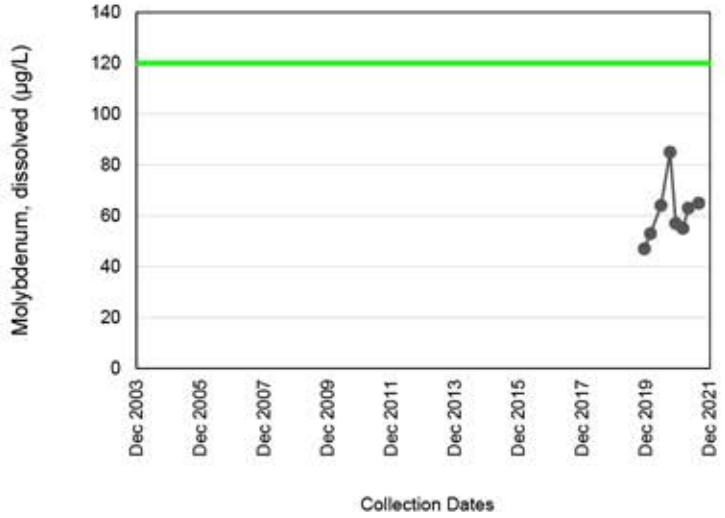
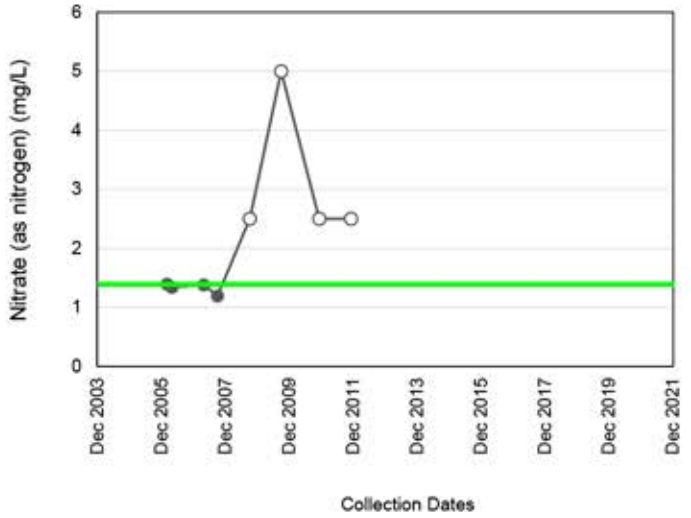
CONCENTRATION TIME SERIES CHARTS

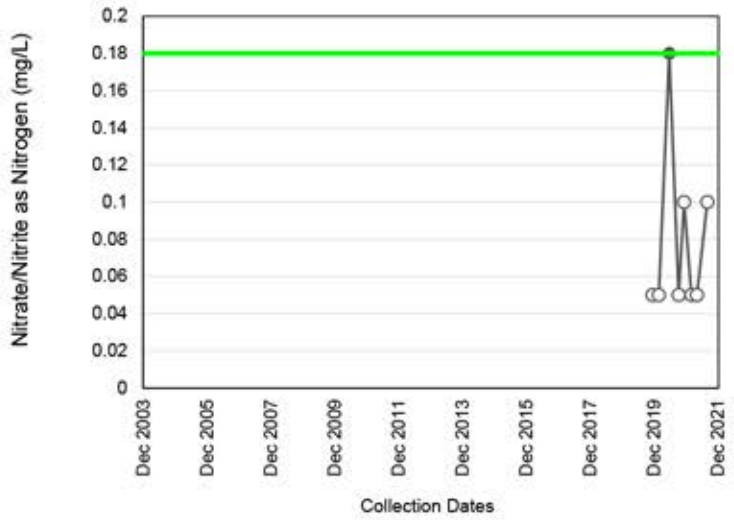
ARCADIS

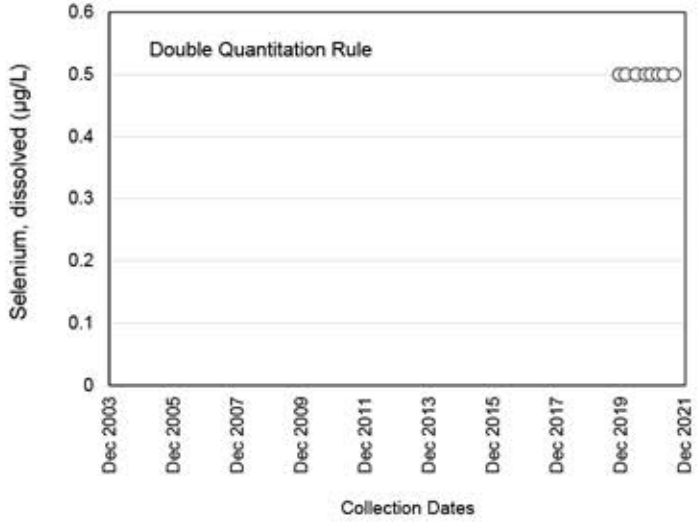
FIGURE
A-11

Location: **MW-34-100**









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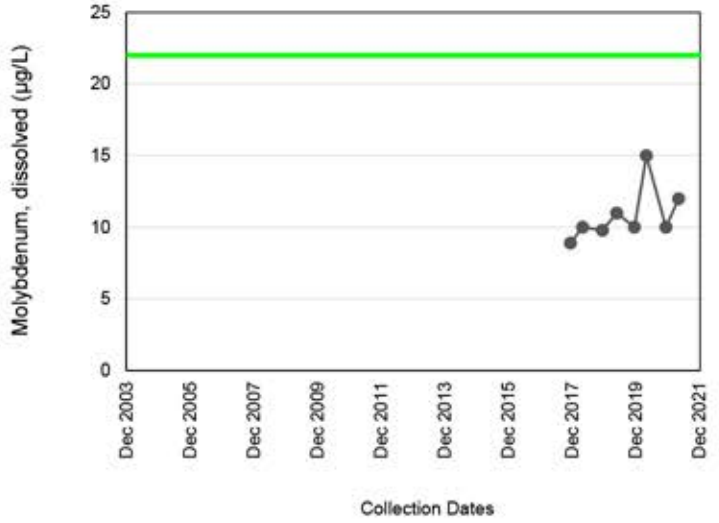
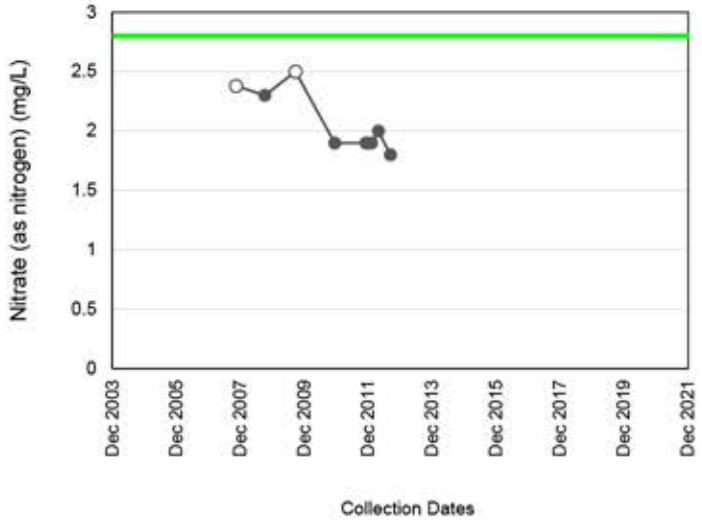
CONCENTRATION TIME SERIES CHARTS

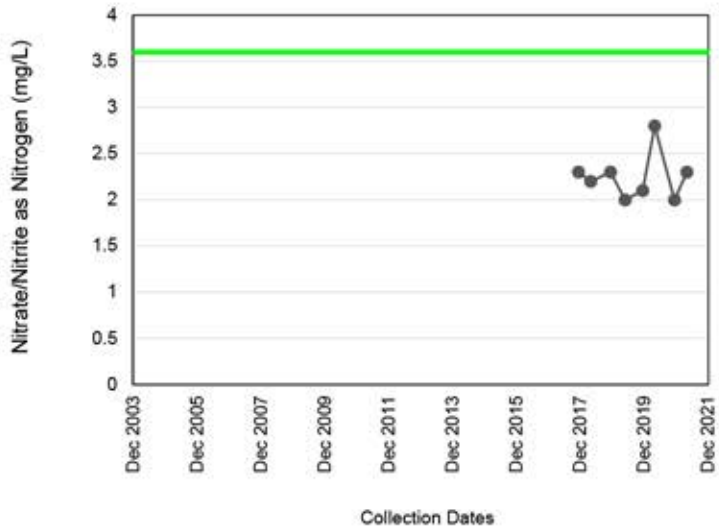
ARCADIS

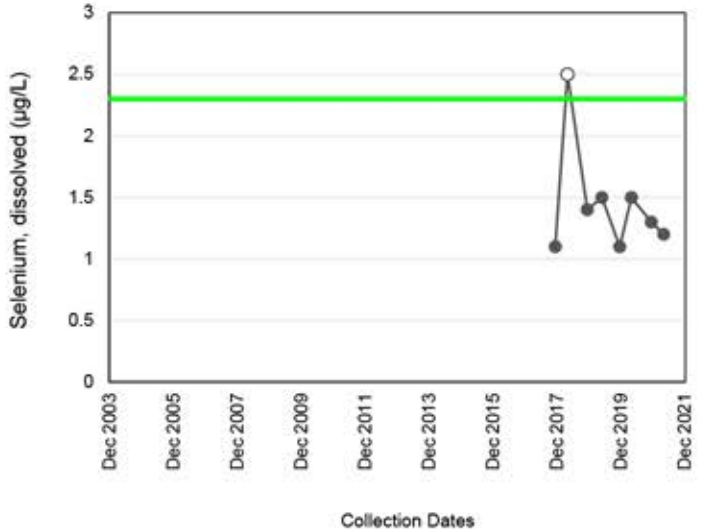
FIGURE
A-12

Location: MW-35-060









Notes:

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- mg/L : milligram per liter
- µg/L : microgram per liter

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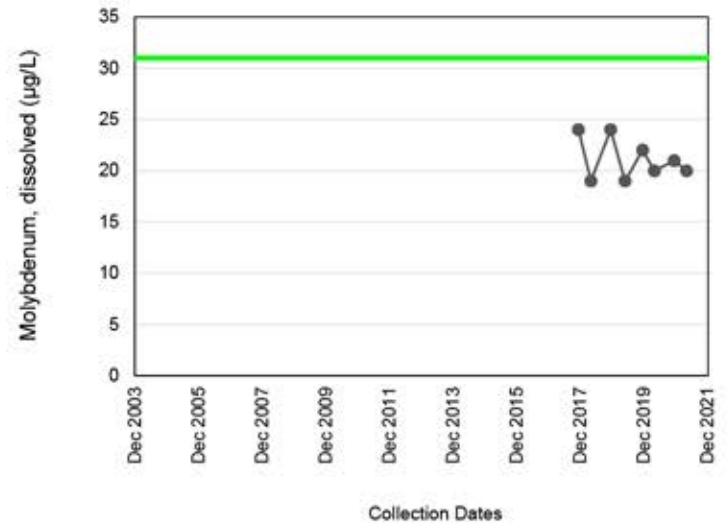
TOPOCK COMPRESSOR STATION
TOPOCK, CALIFORNIA

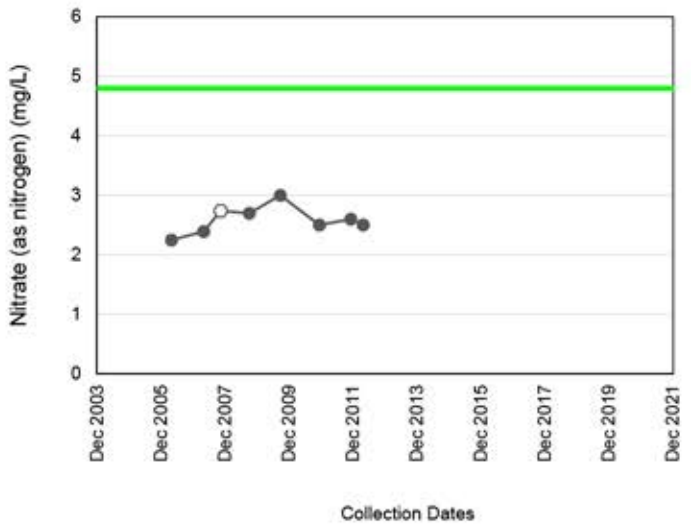
CONCENTRATION TIME SERIES CHARTS

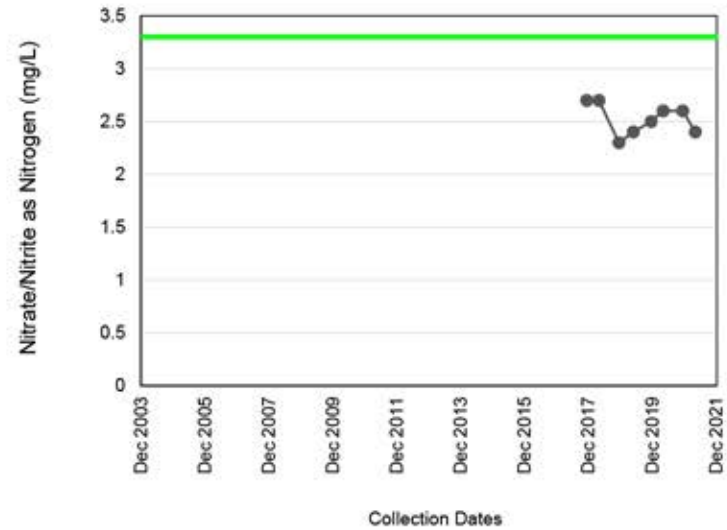
ARCADIS

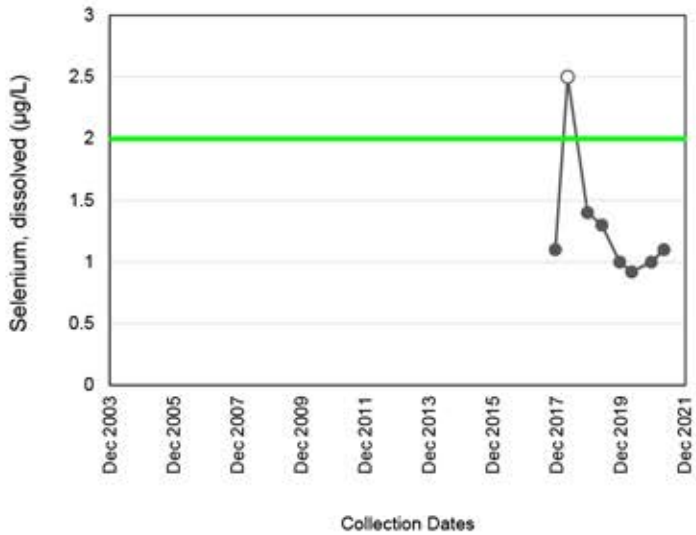
FIGURE
A-13

Location: **MW-35-135**









Notes:

- Detects indicated by full circle and nondetects indicated by open circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

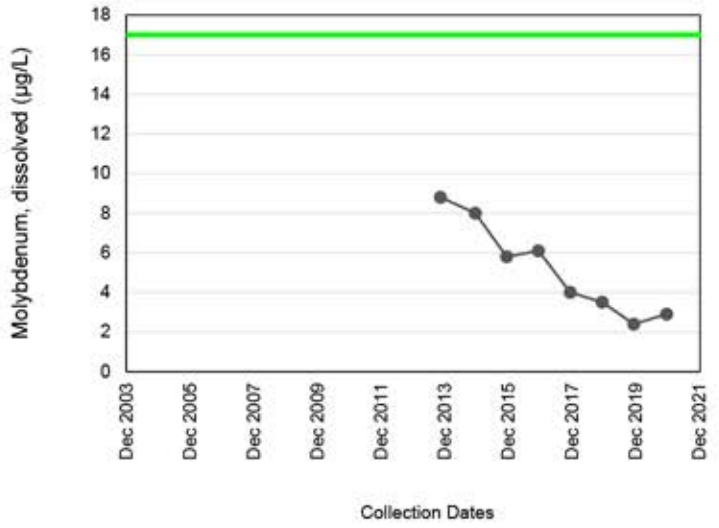
PACIFIC GAS AND ELECTRIC COMPANY
TOPOCK COMPRESSOR STATION
TOPOCK, CALIFORNIA

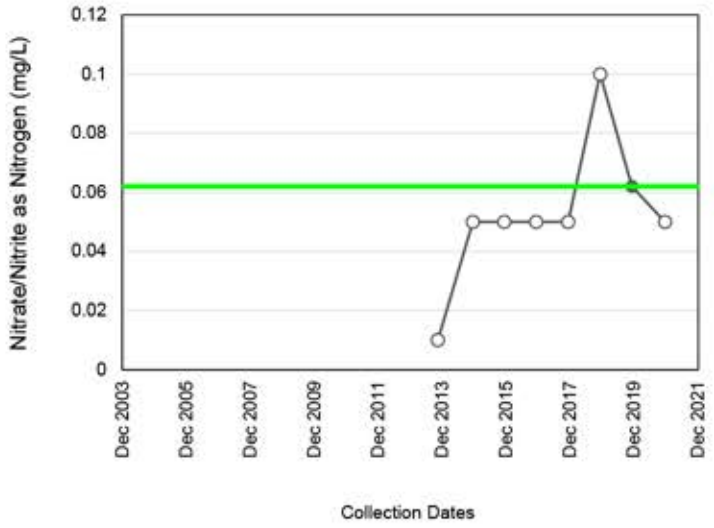
CONCENTRATION TIME SERIES CHARTS

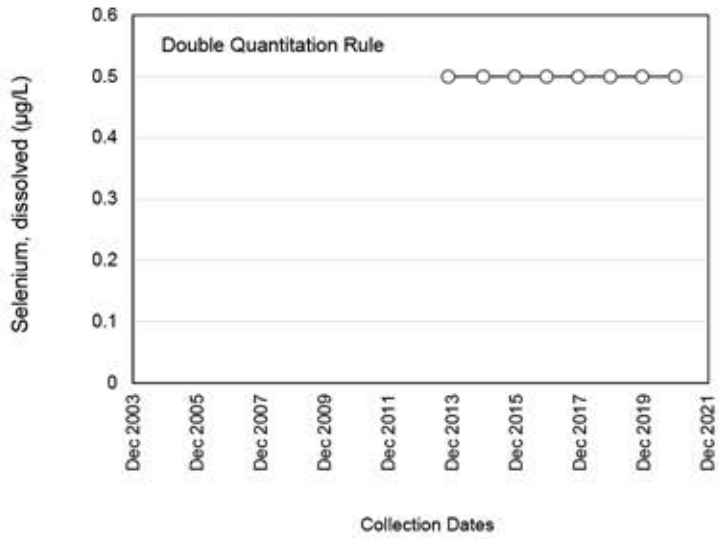
ARCADIS

FIGURE
A-14

Location: **MW-36-040**







Notes:

- Detects indicated by full circle and nondetects indicated by open circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

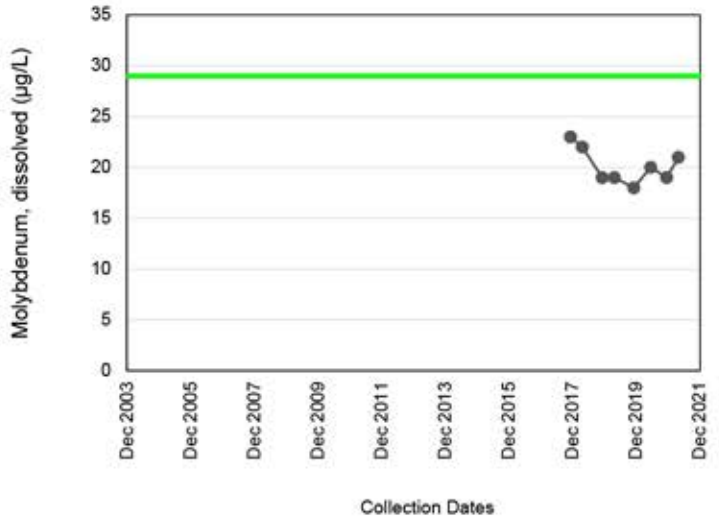
PACIFIC GAS AND ELECTRIC COMPANY
TOPOCK COMPRESSOR STATION
TOPOCK, CALIFORNIA

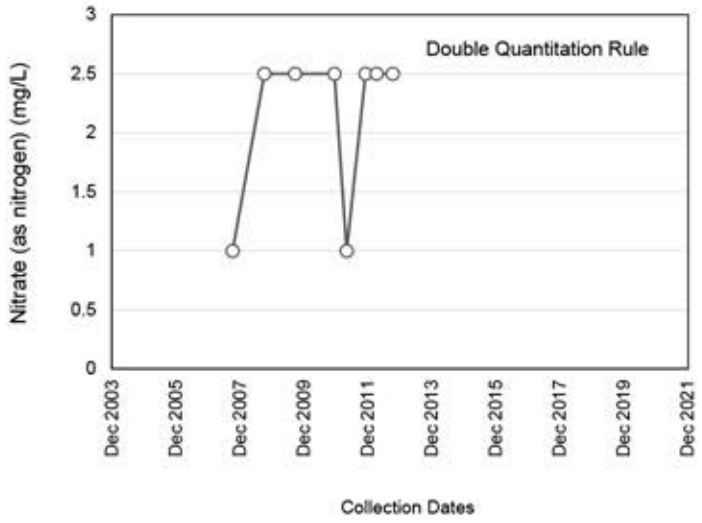
CONCENTRATION TIME SERIES CHARTS

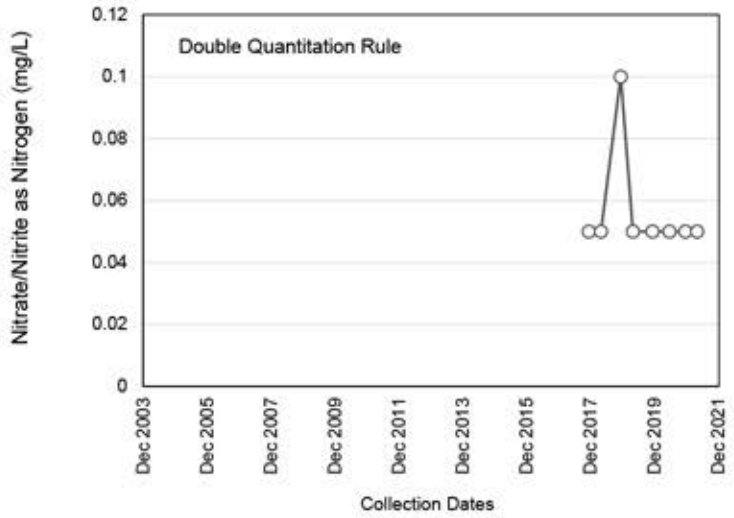
ARCADIS

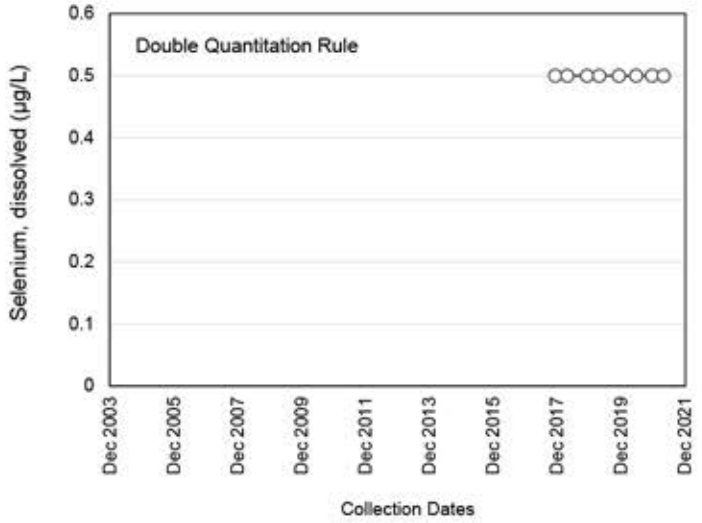
FIGURE
A-15

Location: **MW-36-100**









Notes:

- Detects indicated by full circle and nondetects indicated by open circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

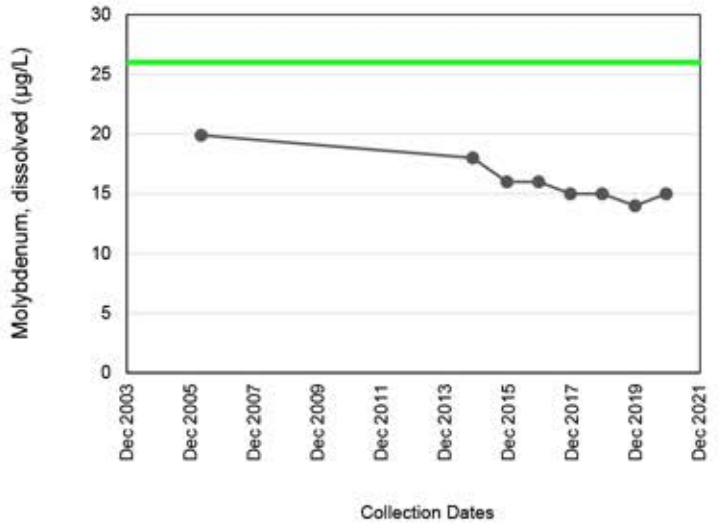
PACIFIC GAS AND ELECTRIC COMPANY
TOPOCK COMPRESSOR STATION
TOPOCK, CALIFORNIA

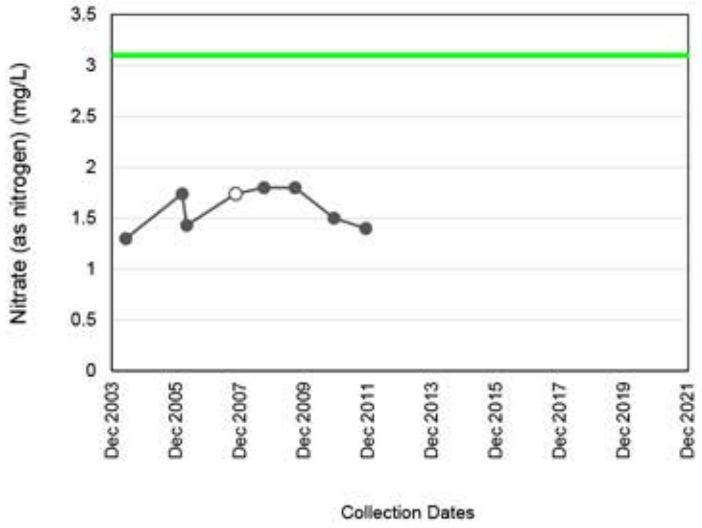
CONCENTRATION TIME SERIES CHARTS

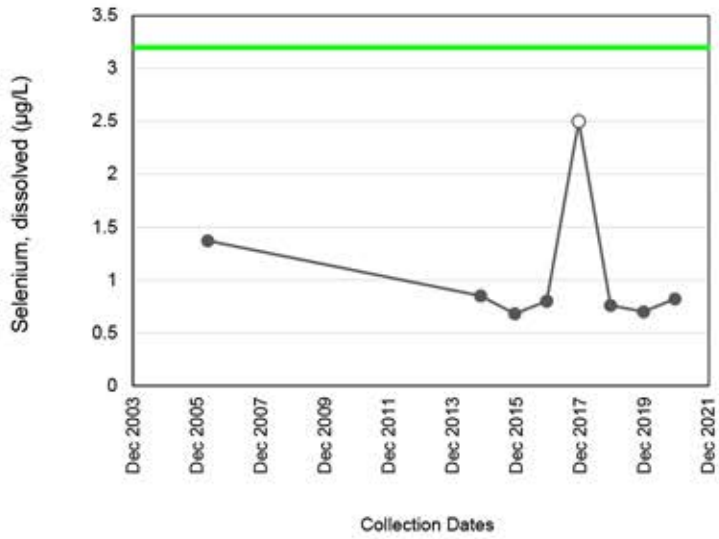
ARCADIS

FIGURE
A-16

Location: **MW-37S**







Notes:

- Detects indicated by full circle and nondetects indicated by open circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

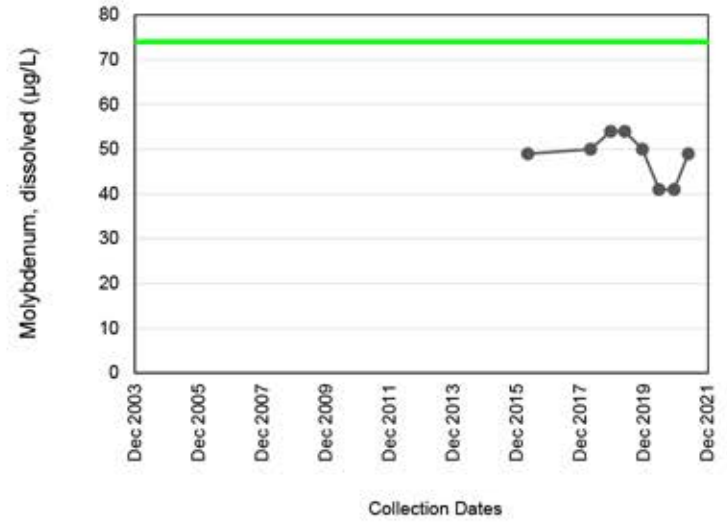
PACIFIC GAS AND ELECTRIC COMPANY
TOPOCK COMPRESSOR STATION
TOPOCK, CALIFORNIA

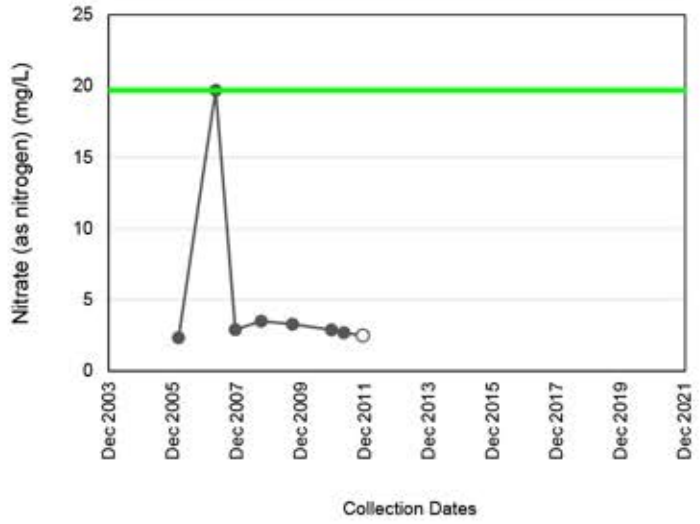
CONCENTRATION TIME SERIES CHARTS

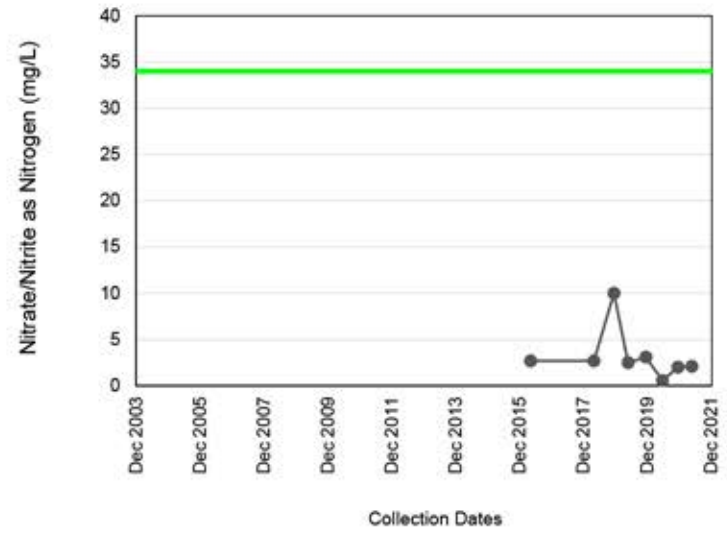
ARCADIS

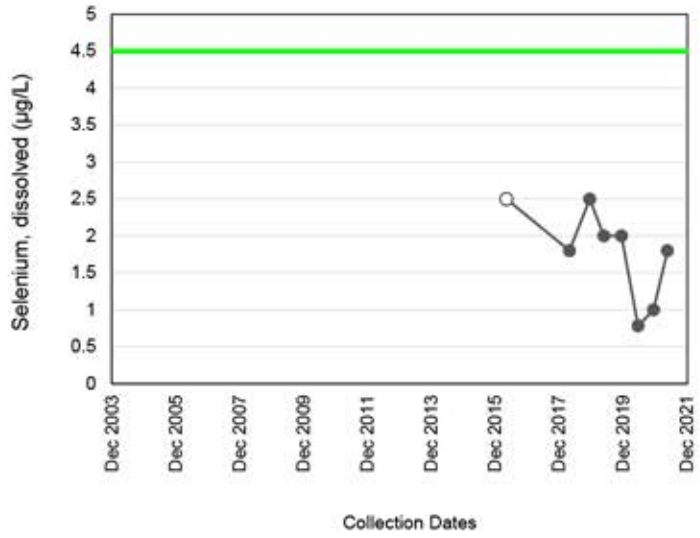
FIGURE
A-17

Location: **MW-40D**









Notes:

- Detects indicated by full circle and nondetects indicated by open circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

PACIFIC GAS AND ELECTRIC COMPANY
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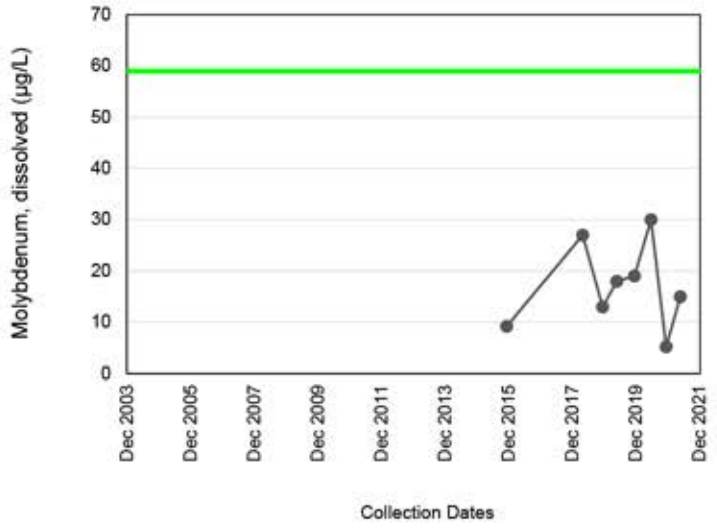
TOPOCK, CALIFORNIA

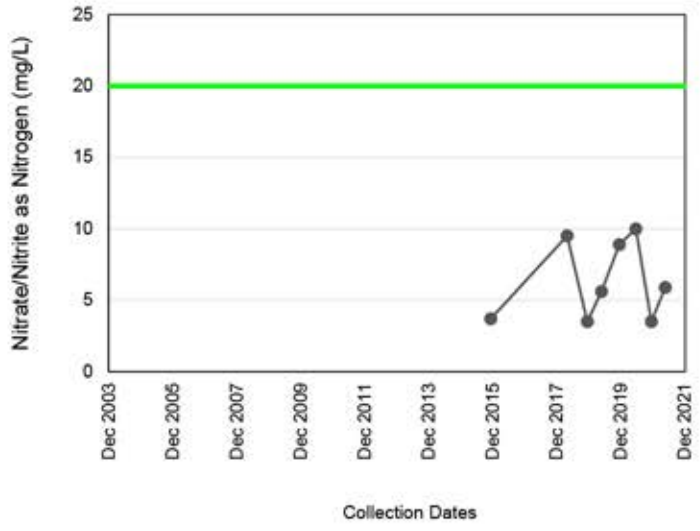
CONCENTRATION TIME SERIES CHARTS

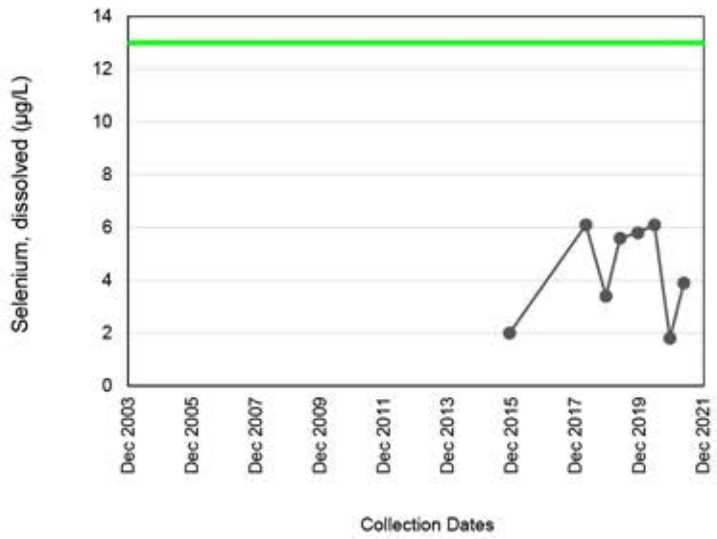
ARCADIS

FIGURE
A-18

Location: **MW-40S**







Notes:

- Detects indicated by full circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

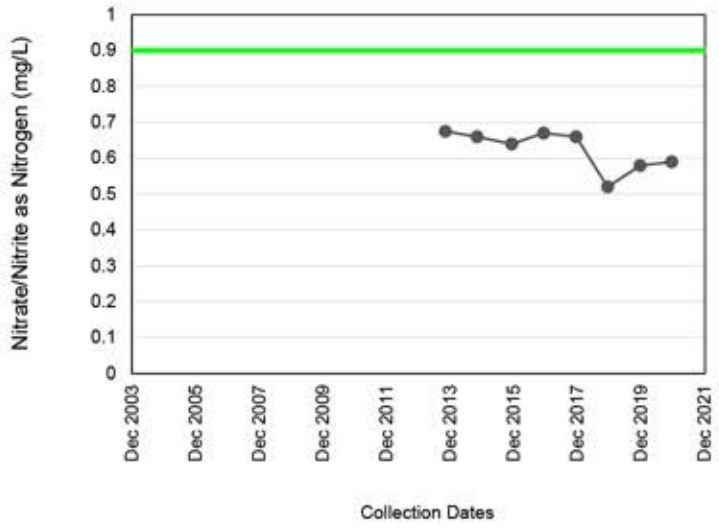
PACIFIC GAS AND ELECTRIC COMPANY
TOPOCK COMPRESSOR STATION
TOPOCK, CALIFORNIA

CONCENTRATION TIME SERIES CHARTS

ARCADIS

FIGURE
A-19

Location: **MW-41M**



Notes:

- Detects indicated by full circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

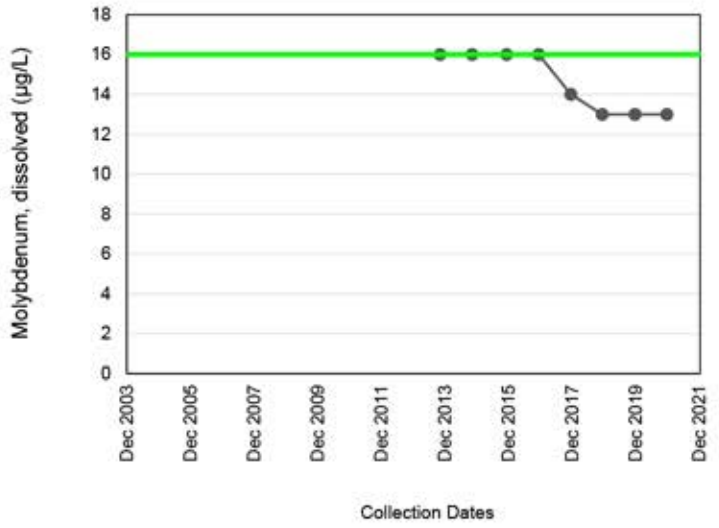
PACIFIC GAS AND ELECTRIC COMPANY
TOPOCK COMPRESSOR STATION
TOPOCK, CALIFORNIA

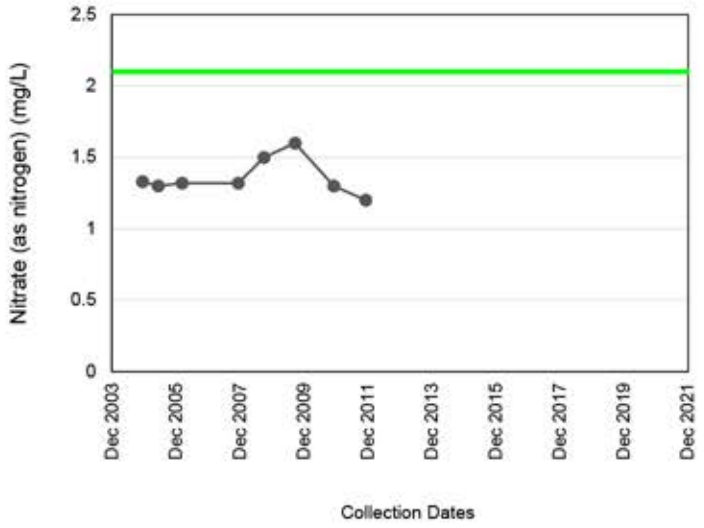
CONCENTRATION TIME SERIES CHARTS

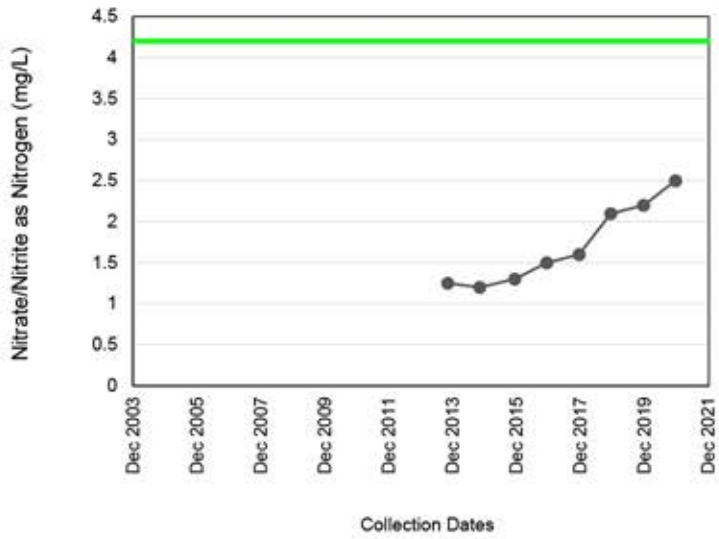
ARCADIS

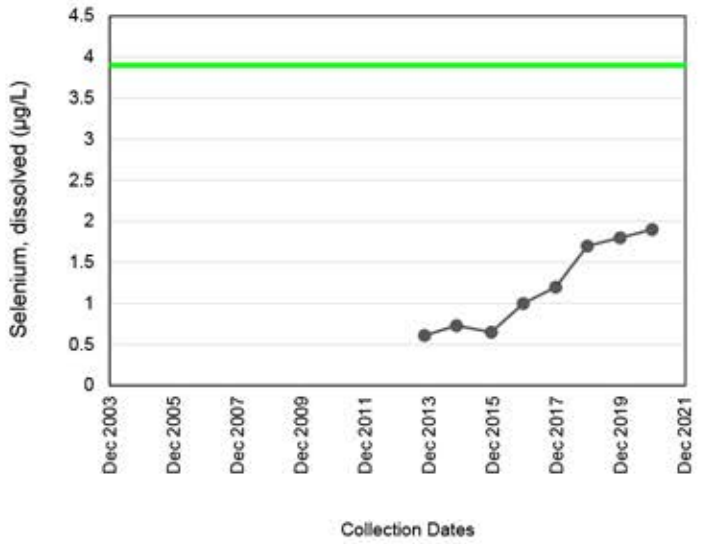
FIGURE
A-20

Location: **MW-41S**









Notes:

- Detects indicated by full circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

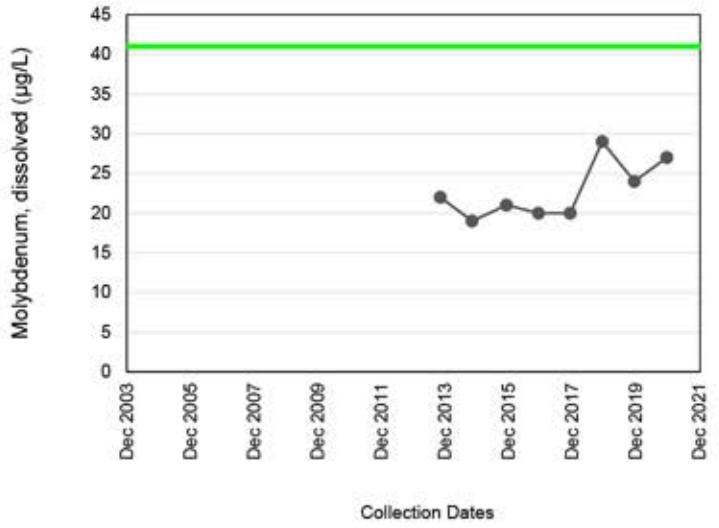
PACIFIC GAS AND ELECTRIC COMPANY
TOPOCK COMPRESSOR STATION
TOPOCK, CALIFORNIA

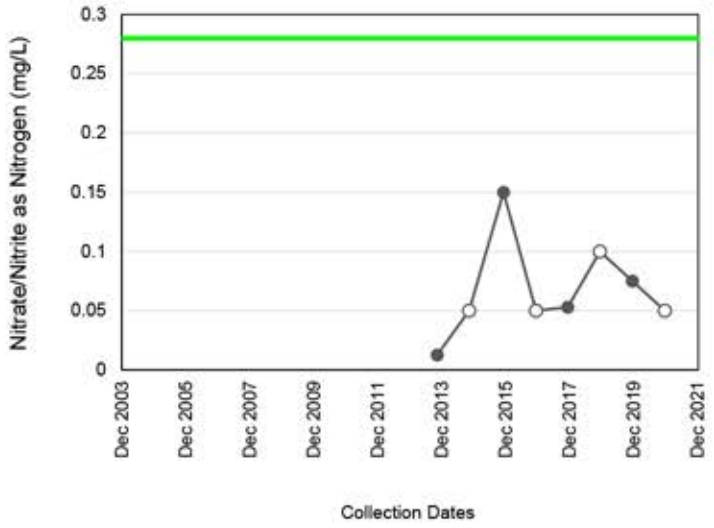
CONCENTRATION TIME SERIES CHARTS

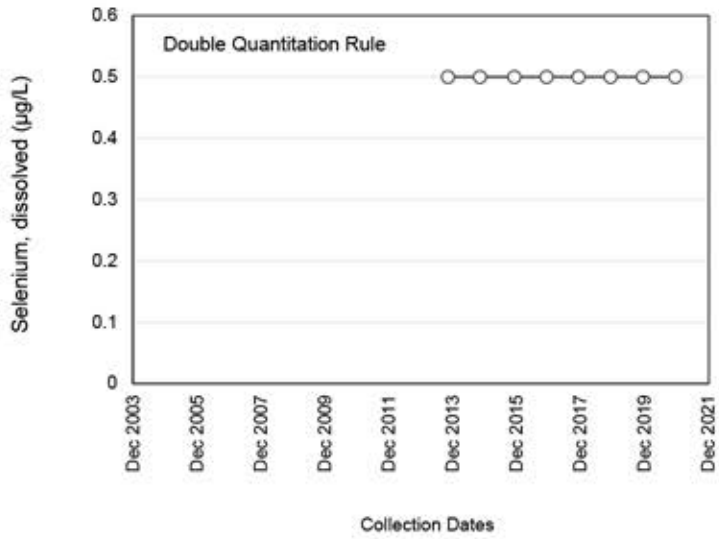
ARCADIS

FIGURE
A-21

Location: **MW-42-030**







Notes:

- Detects indicated by full circle and nondetects indicated by open circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

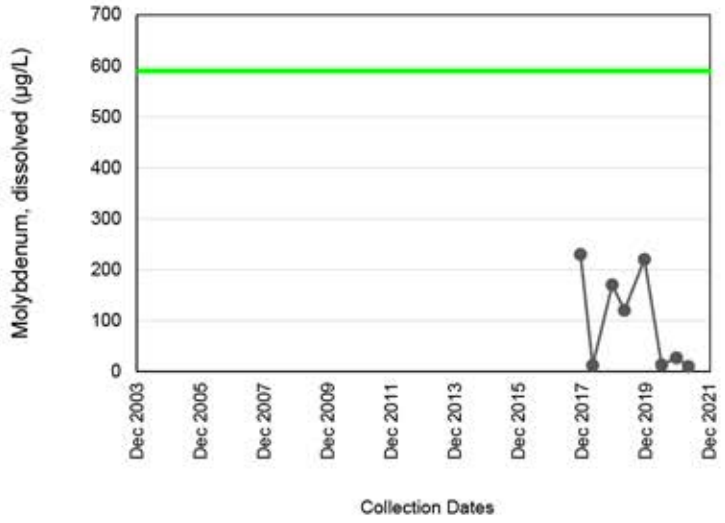
PACIFIC GAS AND ELECTRIC COMPANY
TOPOCK COMPRESSOR STATION
TOPOCK, CALIFORNIA

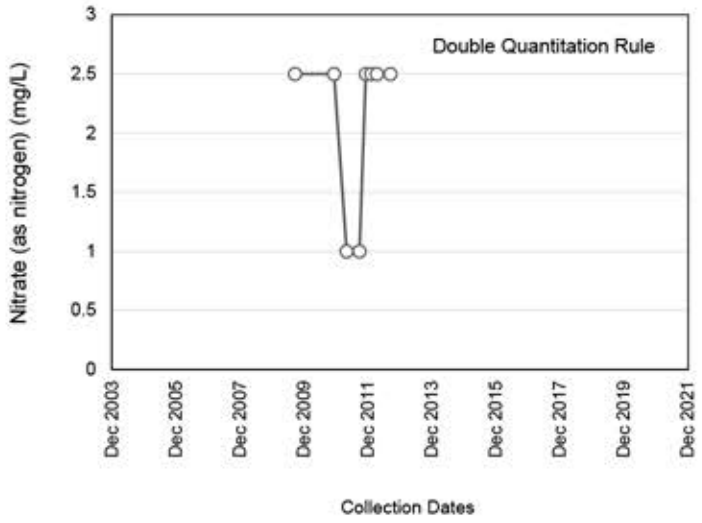
CONCENTRATION TIME SERIES CHARTS

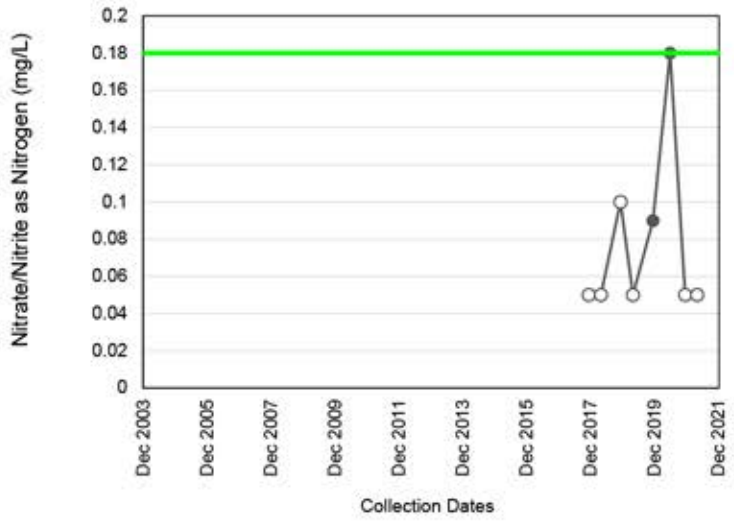
ARCADIS

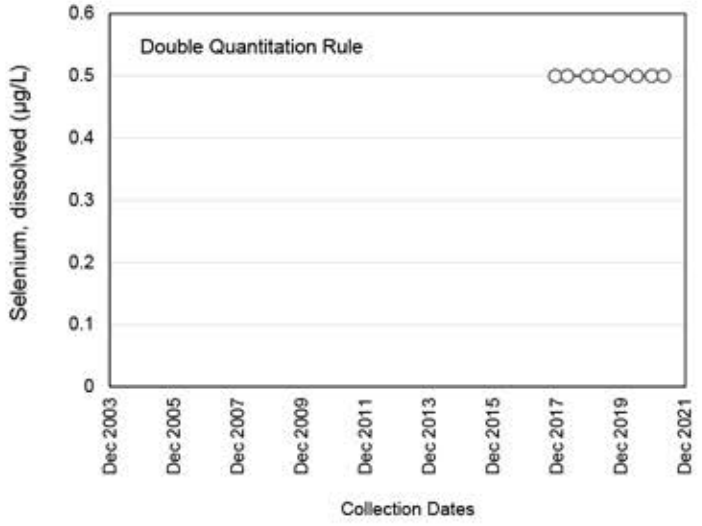
FIGURE
A-22

Location: **MW-44-125**









Notes:

- Detects indicated by full circle and nondetects indicated by open circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

PACIFIC GAS AND ELECTRIC COMPANY
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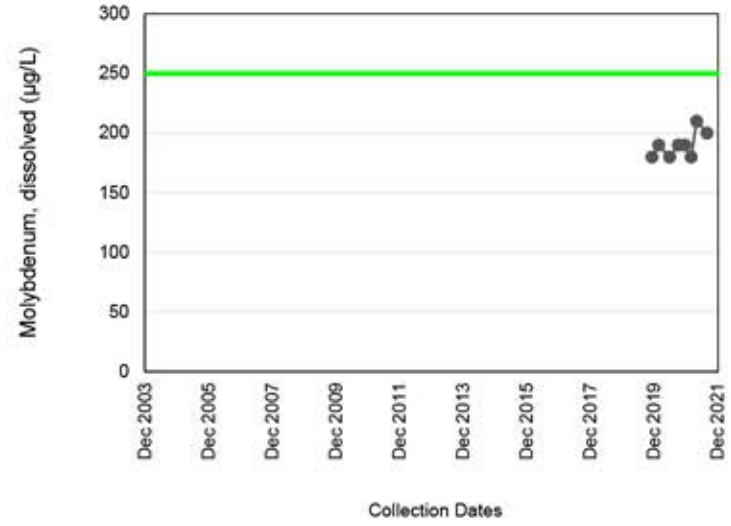
TOPOCK, CALIFORNIA

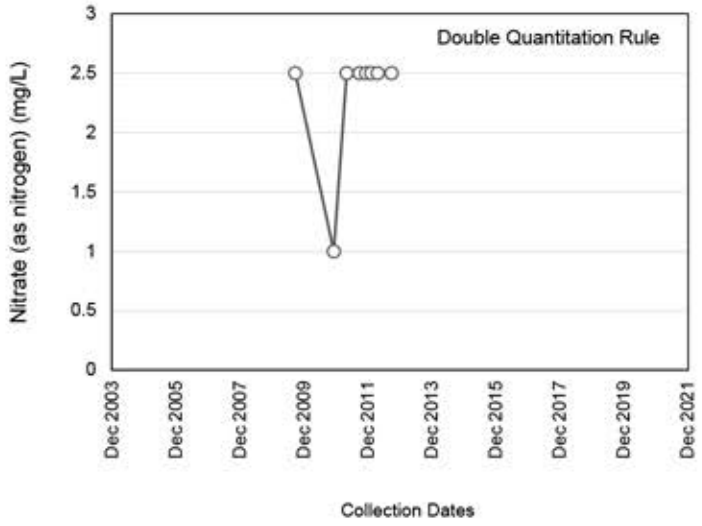
CONCENTRATION TIME SERIES CHARTS

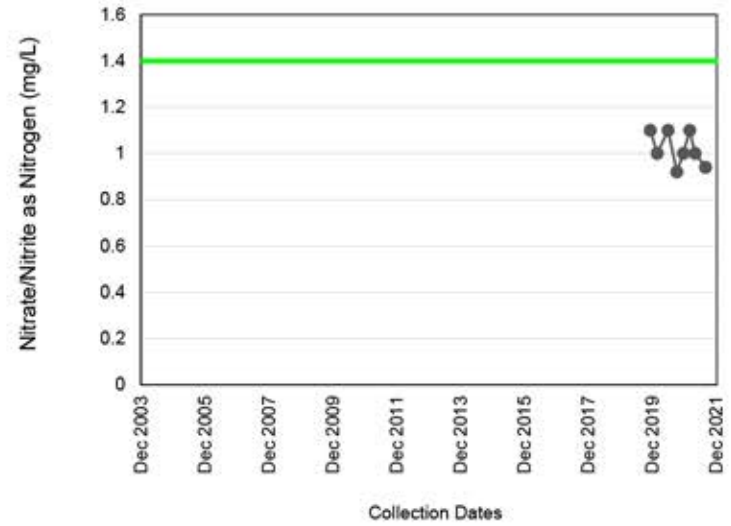
ARCADIS

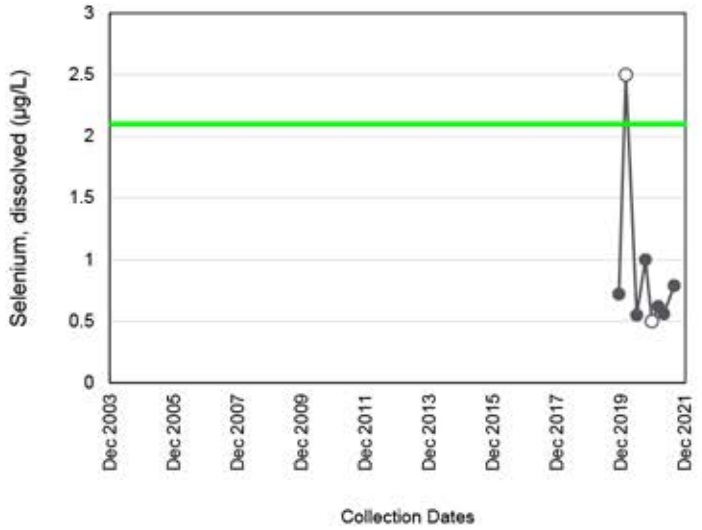
FIGURE
A-23

Location: **MW-46-175**









Notes:

- Detects indicated by full circle and nondetects indicated by open circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

PACIFIC GAS AND ELECTRIC COMPANY
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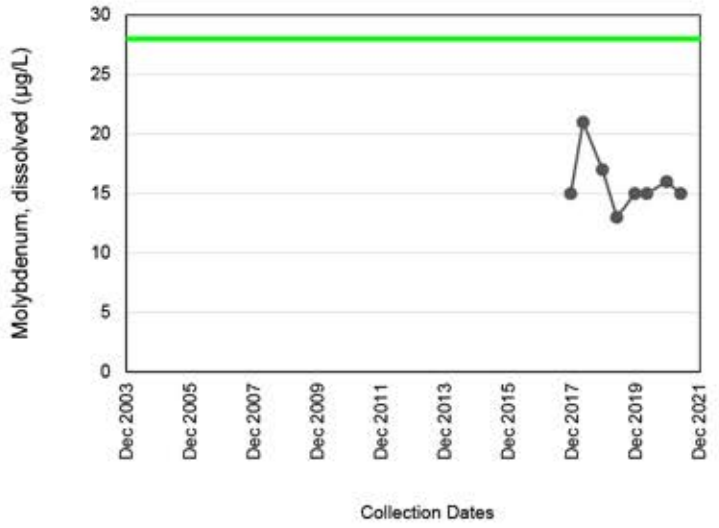
TOPOCK, CALIFORNIA

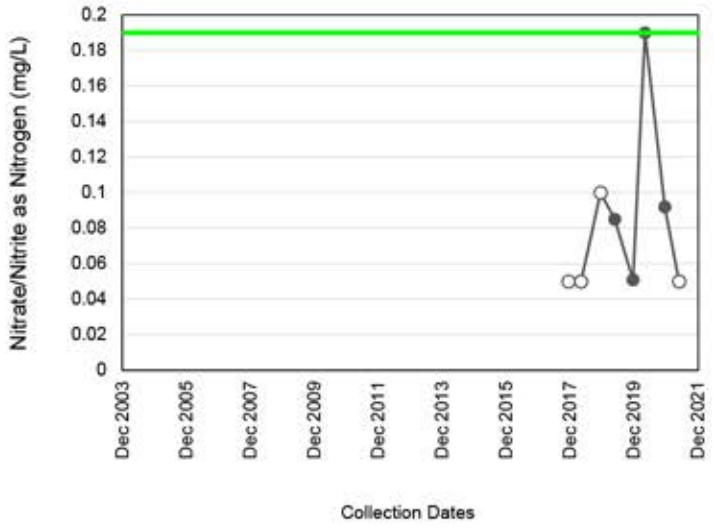
CONCENTRATION TIME SERIES CHARTS

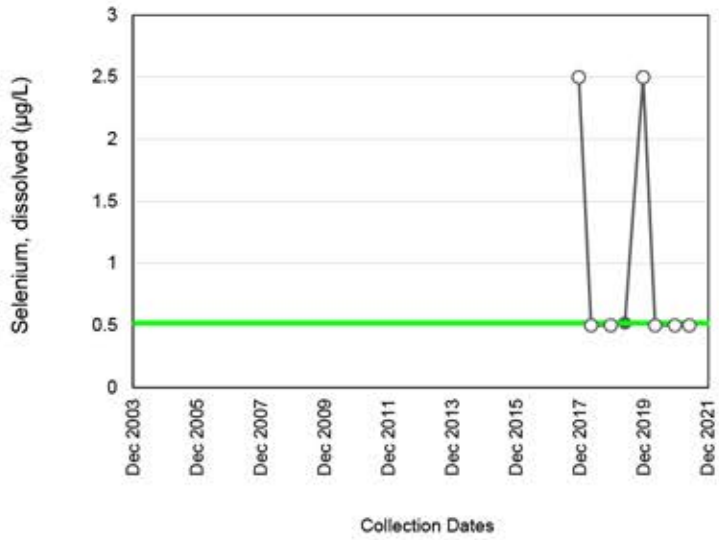
ARCADIS

FIGURE
A-24

Location: **MW-71-035**







Notes:

- Detects indicated by full circle and nondetects indicated by open circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

PACIFIC GAS AND ELECTRIC COMPANY
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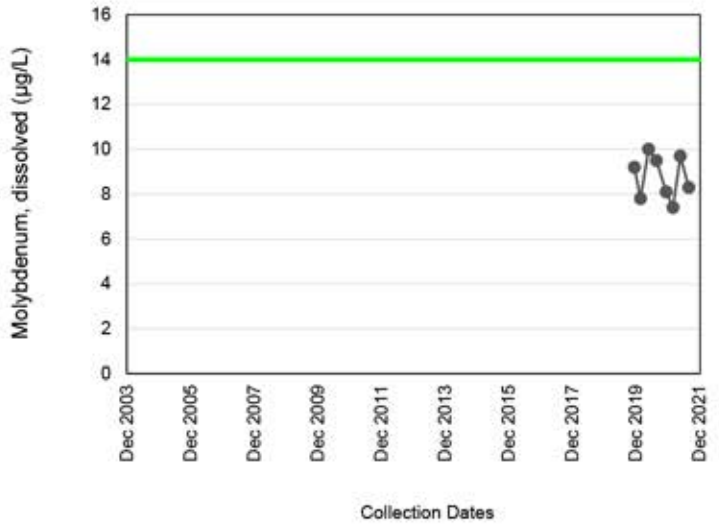
TOPOCK, CALIFORNIA

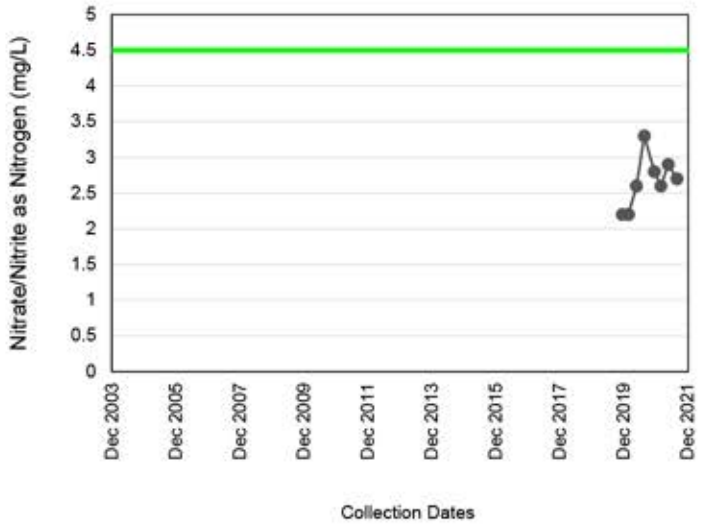
CONCENTRATION TIME SERIES CHARTS

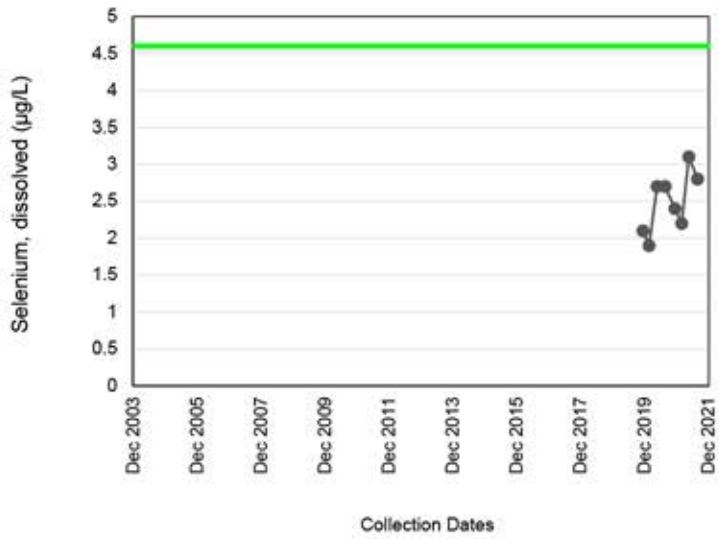
ARCADIS

FIGURE
A-25

Location: **MW-89-183**







Notes:

- Detects indicated by full circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

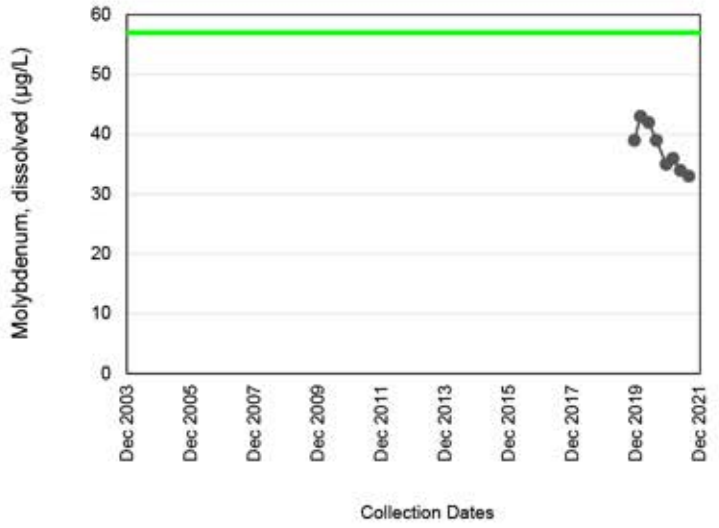
PACIFIC GAS AND ELECTRIC COMPANY
TOPOCK COMPRESSOR STATION
TOPOCK, CALIFORNIA

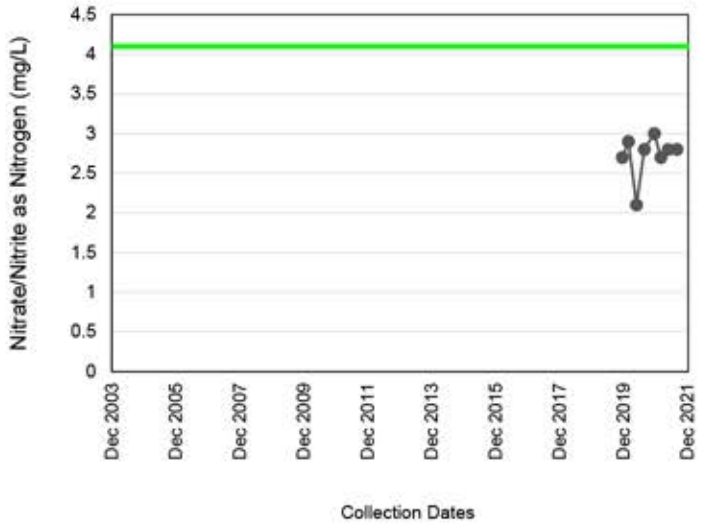
CONCENTRATION TIME SERIES CHARTS

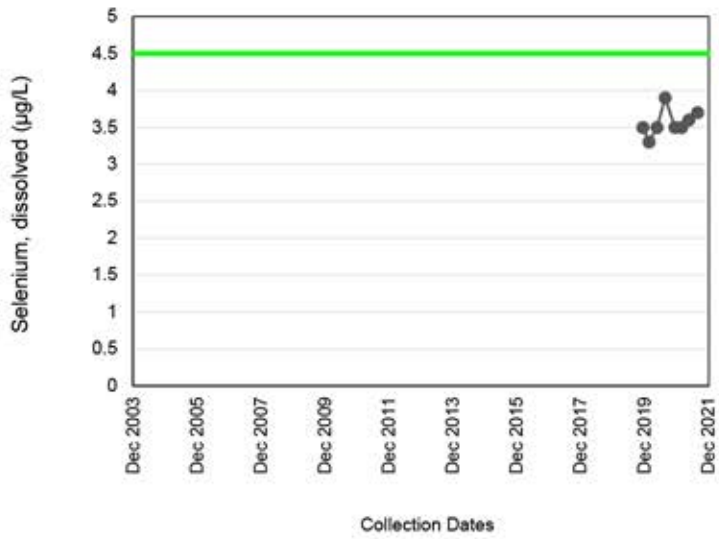
ARCADIS

FIGURE
A-26

Location: **MW-89-273**







Notes:

- Detects indicated by full circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

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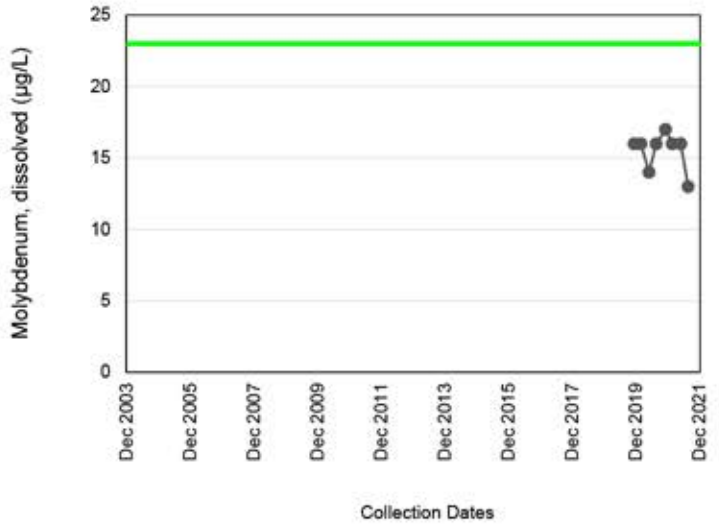
TOPOCK, CALIFORNIA

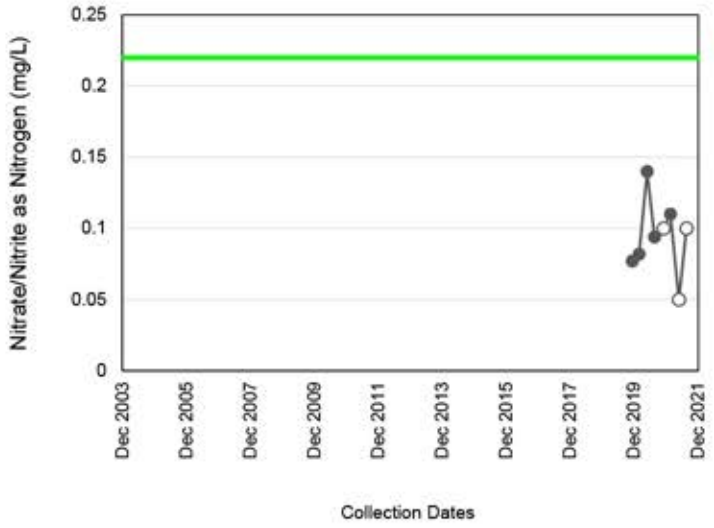
CONCENTRATION TIME SERIES CHARTS

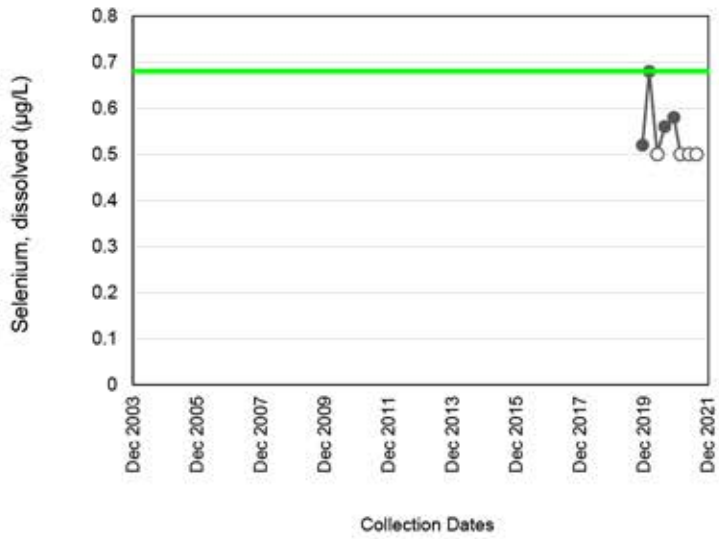
ARCADIS

FIGURE
A-27

Location: **MW-90-031**







Notes:

- Detects indicated by full circle and nondetects indicated by open circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

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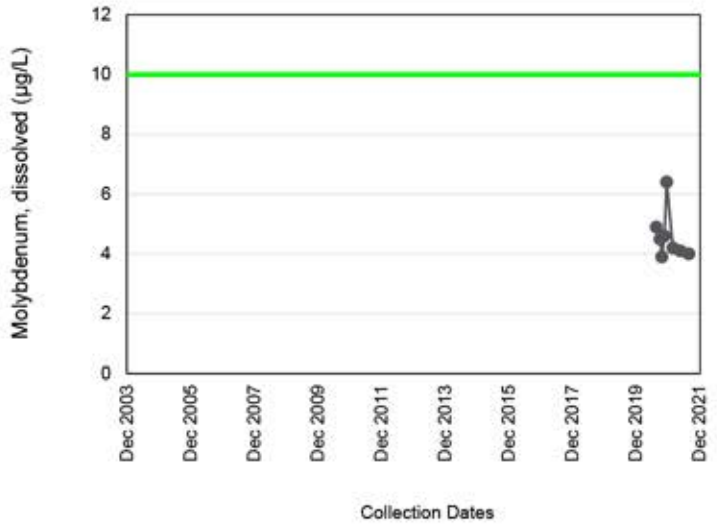
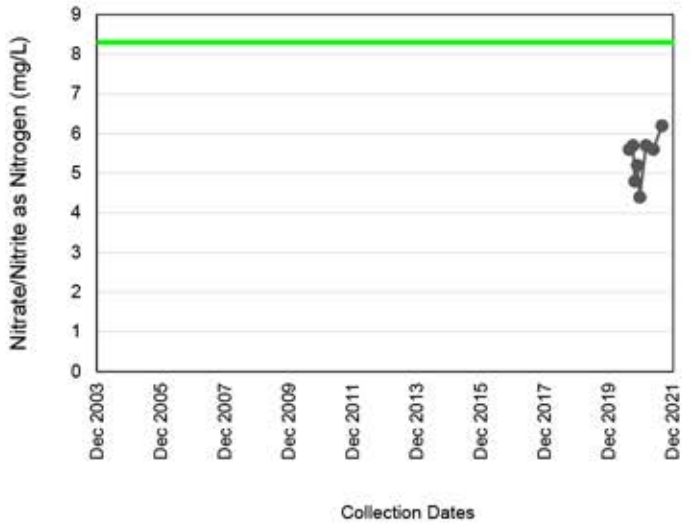
CONCENTRATION TIME SERIES CHARTS

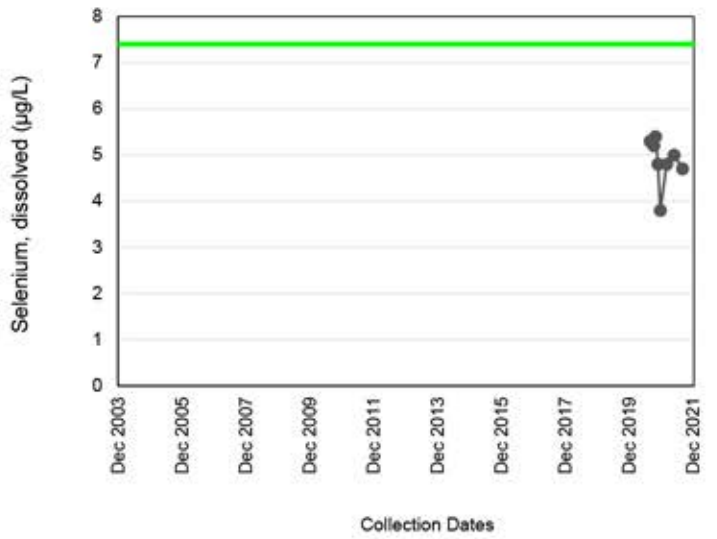
ARCADIS

FIGURE
A-28

Location: **MW-95-113**







Notes:

- Detects indicated by full circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

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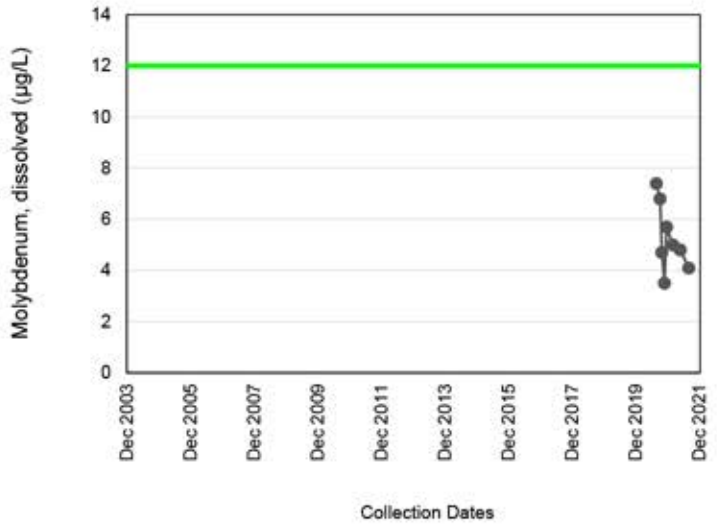
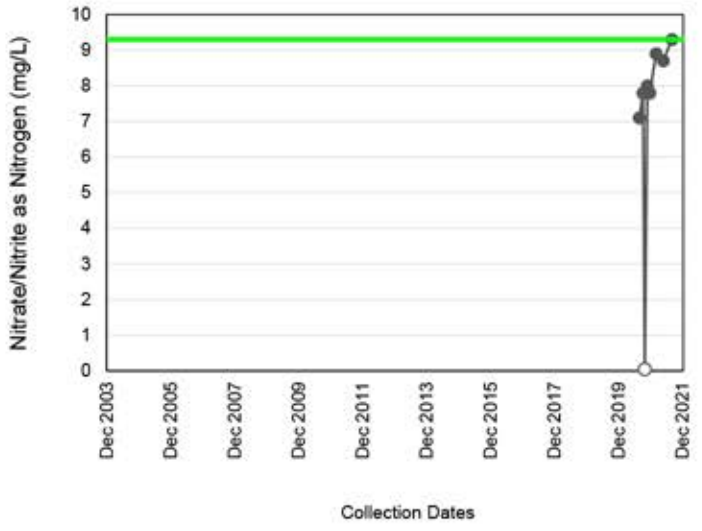
CONCENTRATION TIME SERIES CHARTS

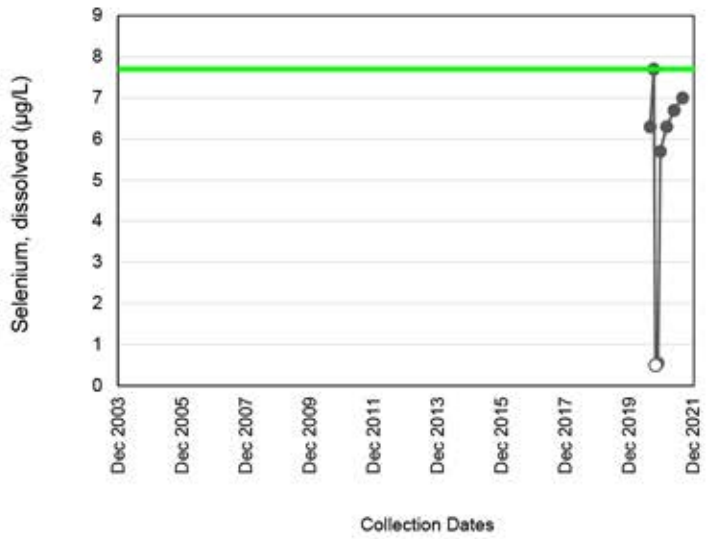
ARCADIS

FIGURE
A-29

Location: **MW-95-157**







Notes:

- Detects indicated by full circle and nondetects indicated by open circle.
- : Shewhart Control Limit (SCL)
- mg/L : milligram per liter
- µg/L : microgram per liter

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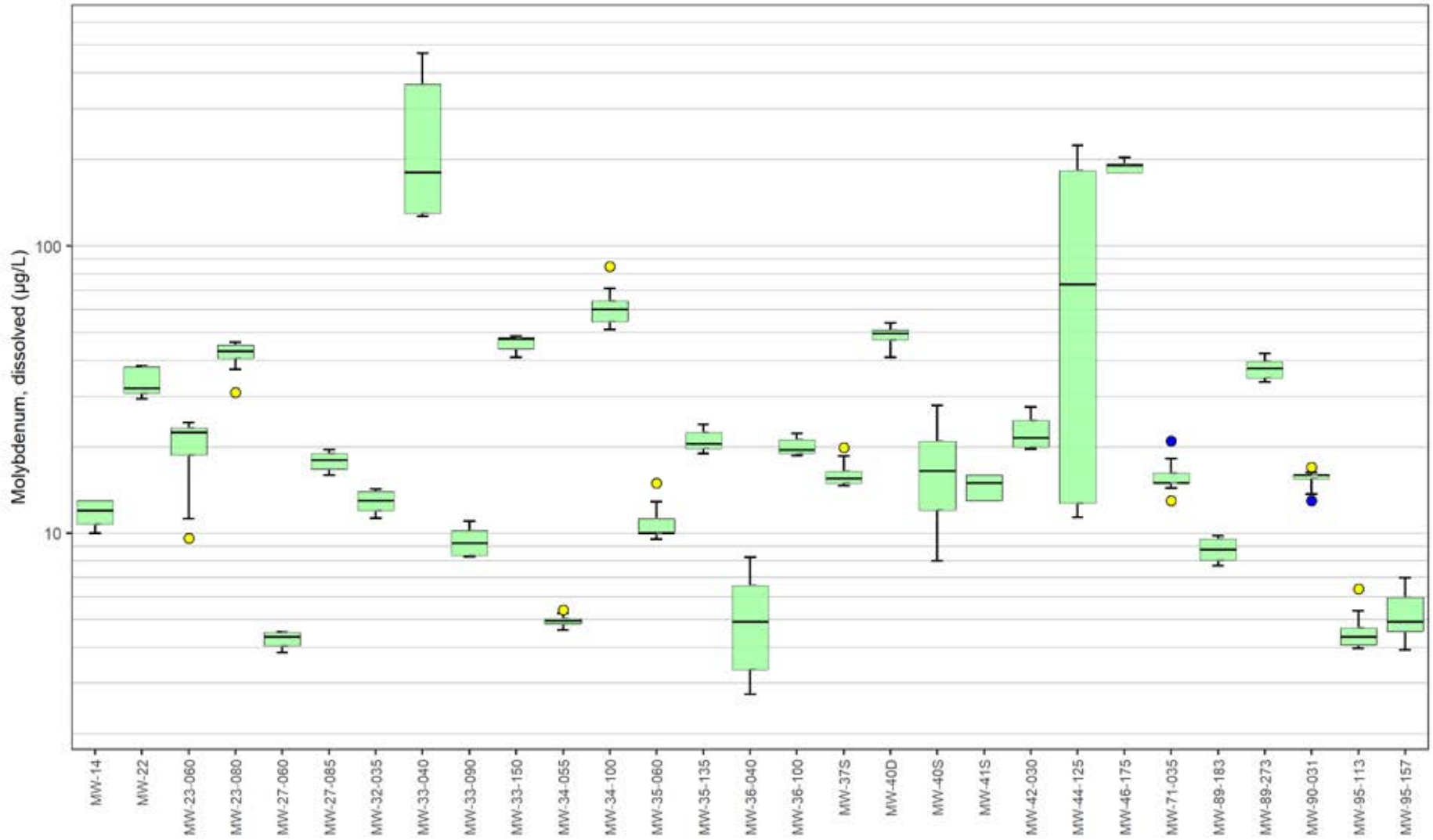
CONCENTRATION TIME SERIES CHARTS

ARCADIS

FIGURE
A-30

Attachment B

Box and Whisker Plots



90th percentile
75th percentile
50th percentile
25th percentile
10th percentile
Interquartile Range (IQR)

Maximum non-detect detection limit
Portions below the maximum detection limit greyed out due to uncertainty in values.

Open symbol indicates non-detect (reported at detection limit).

Closed symbol indicates non-detect (reported at detection limit).

Potential statistical outlier 1.5xIQR above (or below) the 75th percentile (or 25th percentile)

Potential statistical outlier 3.0xIQR above (or below) the 75th percentile (or 25th percentile)

Notes:
Robust Regression on Order Statistics (rROS) imputation was used to estimate the value of non-detects.
Any non-detect value with a detection limit greater than the maximum detected value was excluded from analysis. Elevated non-detect values typically do not have sufficient precision to be informative, and non-detects greater than the maximum detect value cannot be reliably imputed via rROS.
Box plots were not developed for locations with fewer than 3 detected observations. The individual results are shown.

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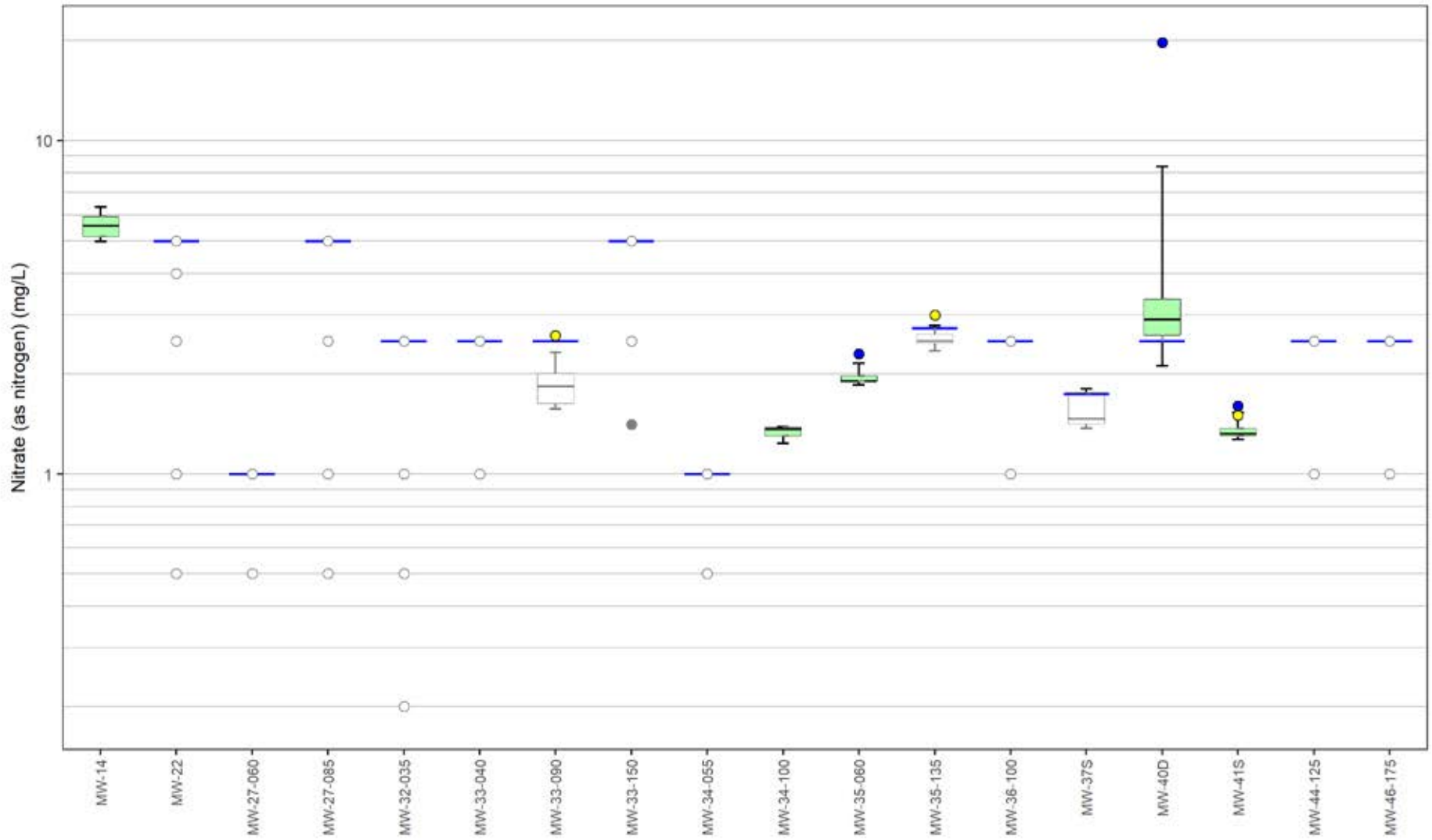
ATTACHMENT B

MOLYBDENUM, DISSOLVED CONCENTRATION BOXPLOTS

ARCADIS

FIGURE
B-1



90th percentile
75th percentile
50th percentile
25th percentile
10th percentile
Interquartile Range (IQR)

Maximum non-detect detection limit
Portions below the maximum detection limit greyed out due to uncertainty in values.

Open symbol indicates non-detect (reported at detection limit).

Closed symbol indicates non-detect (reported at detection limit).

Potential statistical outlier 1.5xIQR above (or below) the 75th percentile (or 25th percentile)

Potential statistical outlier 3.0xIQR above (or below) the 75th percentile (or 25th percentile)

Notes:
Robust Regression on Order Statistics (rROS) imputation was used to estimate the value of non-detects.
Any non-detect value with a detection limit greater than the maximum detected value was excluded from analysis. Elevated non-detect values typically do not have sufficient precision to be informative, and non-detects greater than the maximum detect value cannot be reliably imputed via rROS.
Box plots were not developed for locations with fewer than 3 detected observations. The individual results are shown.

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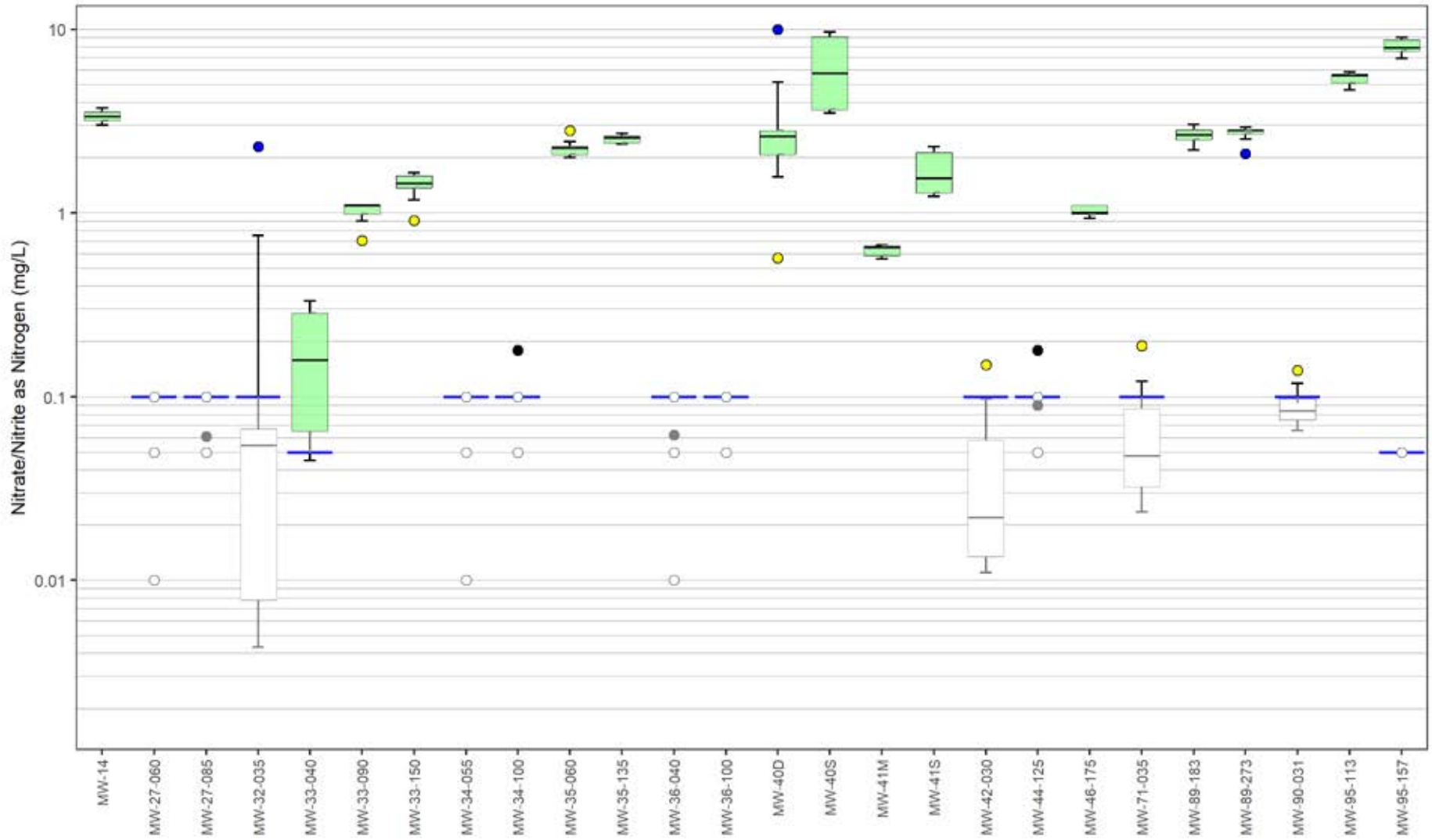
ATTACHMENT B

NITRATE (AS NITROGEN) CONCENTRATION BOXPLOTS

ARCADIS

FIGURE
B-2



90th percentile
75th percentile
50th percentile
25th percentile
10th percentile
Interquartile Range (IQR)

Maximum non-detect detection limit
Portions below the maximum detection limit greyed out due to uncertainty in values.

Open symbol indicates non-detect (reported at detection limit).

Closed symbol indicates non-detect (reported at detection limit).

Potential statistical outlier 1.5xIQR above (or below) the 75th percentile (or 25th percentile)

Potential statistical outlier 3.0xIQR above (or below) the 75th percentile (or 25th percentile)

Notes:
Robust Regression on Order Statistics (rROS) imputation was used to estimate the value of non-detects.
Any non-detect value with a detection limit greater than the maximum detected value was excluded from analysis. Elevated non-detect values typically do not have sufficient precision to be informative, and non-detects greater than the maximum detect value cannot be reliably imputed via rROS.
Box plots were not developed for locations with fewer than 3 detected observations. The individual results are shown.

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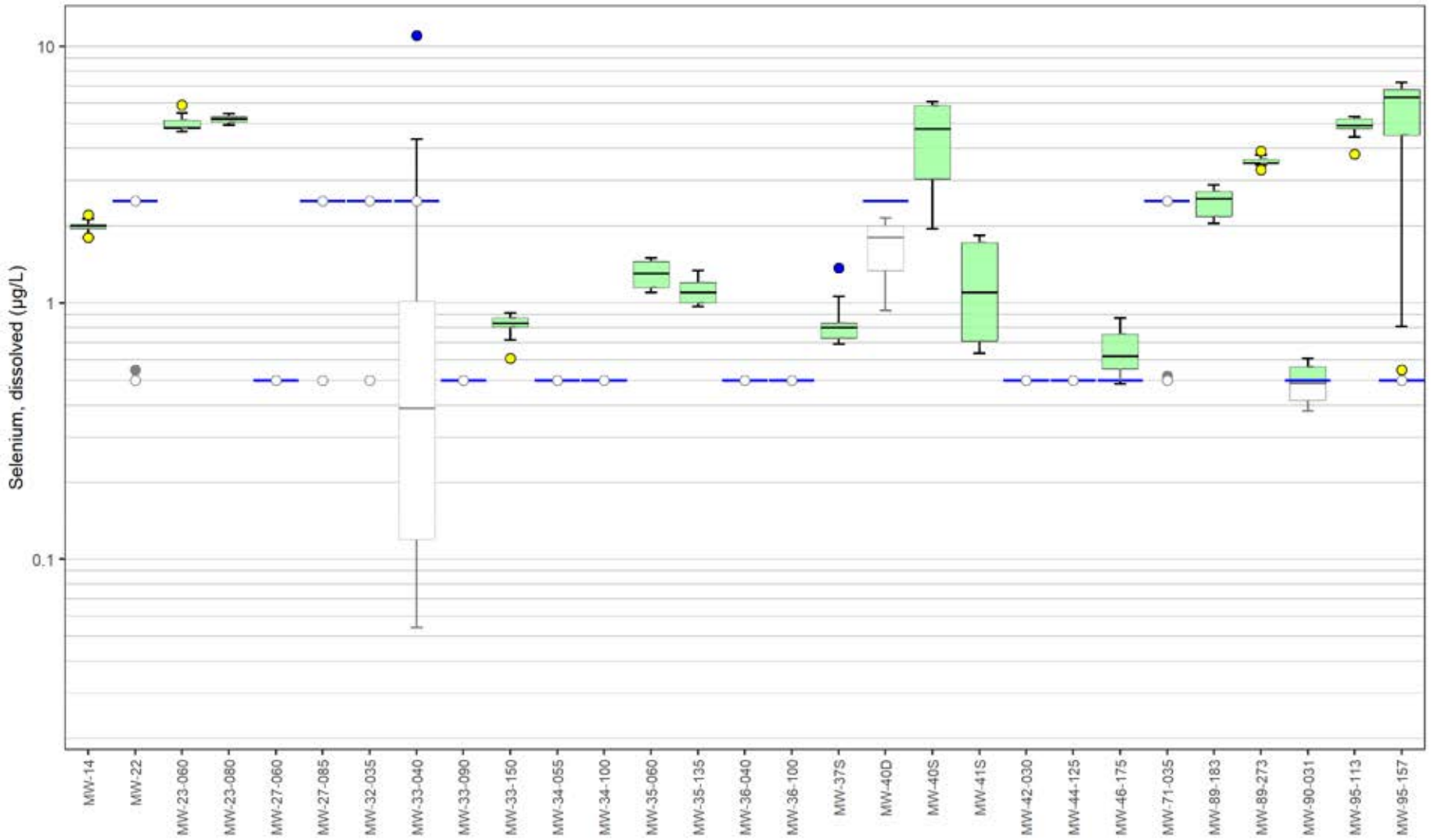
NITRATE/NITRITE AS NITROGEN CONCENTRATION BOXPLOTS

ARCADIS

FIGURE
B-3



90th percentile
75th percentile
50th percentile
25th percentile
10th percentile
Interquartile Range (IQR)

Maximum non-detect detection limit
Portions below the maximum detection limit greyed out due to uncertainty in values.

Open symbol indicates non-detect (reported at detection limit).

Closed symbol indicates non-detect (reported at detection limit).

Potential statistical outlier 1.5xIQR above (or below) the 75th percentile (or 25th percentile)

Potential statistical outlier 3.0xIQR above (or below) the 75th percentile (or 25th percentile)

Notes:
Robust Regression on Order Statistics (rROS) imputation was used to estimate the value of non-detects.
Any non-detect value with a detection limit greater than the maximum detected value was excluded from analysis. Elevated non-detect values typically do not have sufficient precision to be informative, and non-detects greater than the maximum detect value cannot be reliably imputed via rROS.
Box plots were not developed for locations with fewer than 3 detected observations. The individual results are shown.

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ATTACHMENT B

SELENIUM, DISSOLVED CONCENTRATION BOXPLOTS

ARCADIS

FIGURE
B-4

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