

Topock Project Executive Abstract

<p>Document Title:</p> <p>Compliance Monitoring Program 2017 Annual Groundwater Monitoring Report, Interim Measures No. 3, PG&E Topock Compressor Station, Needles, California (PGE20180115A)</p> <p>Submitting Agency: DOI</p> <p>Final Document? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Date of Document: January 15, 2018</p> <p>Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) – PG&E</p>
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Brief Summary of attached document:

The purpose of the Topock Compliance Monitoring Program (CMP) is twofold: 1) to monitor changes in groundwater hydraulics and/or water quality of the aquifer in the injection well area, and 2) to ensure that the quality of the aquifer is not adversely affected by the injected water. The monitoring network consists of multiple observation wells (OW series) and compliance wells (CW series) screened in the shallow, middle, and/or deep zones of the Alluvial Aquifer. The injection of treated groundwater in the area began in 2005. As of 2017, the majority of the compliance and observation wells demonstrate a treated/injected water signature.

This report presents groundwater analytical results and water level data collected during the 2017 annual CMP monitoring event conducted in October 2017. During the 2017 annual monitoring event, no samples exceeded the water quality objectives for hexavalent chromium, chromium, pH, or total dissolved solids. The next CMP event is scheduled to occur in the fourth quarter of 2018.

Written by: PG&E

Recommendations:

This report is for your information only.

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

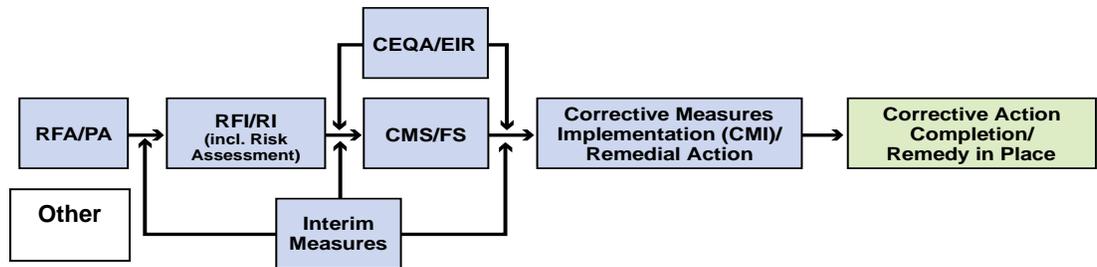
Submittal of this report is a compliance requirement under DOI ARARs beginning August 2011.

Other requirements of this information?

None.

Related Reports and Documents:

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



Legend

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



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January 15, 2018

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Subject: *Compliance Monitoring Program 2017 Annual Groundwater Monitoring Report, Interim Measures No. 3, PG&E Topock Compressor Station, Needles, California (Document ID: PGE20180115A)*

Dear Ms. Innis:

Enclosed is the Compliance Monitoring Program (CMP) 2017 Annual Groundwater Monitoring Report for Interim Measures No. 3 (IM-3) at the Pacific Gas and Electric Company (PG&E) Topock Compressor Station site near Needles, California. This report documents the results of compliance monitoring activities conducted during the 2017 annual period (from January 1, 2017 through December 31, 2017) and has been prepared in accordance with the United States Department of the Interior's August 18, 2011 letter stating that the Interim Measures No. 3 Waste Discharge Requirements are applicable or relevant and appropriate requirements.

The current contingency plan specifies the water quality objectives/action levels for hexavalent chromium (Cr[VI]), chromium, total dissolved solids (TDS), and pH, which are used to determine whether contingency plan actions are necessary based on sample results. These threshold concentrations, used to trigger the contingency plan, are as follows: Cr(VI) greater than 32 micrograms per liter ($\mu\text{g/L}$), chromium greater than 28 $\mu\text{g/L}$, TDS greater than 10,800 milligrams per liter, and pH outside of the range of 6.2 to 9.2. No samples exceeded the water quality objectives for Cr(VI), chromium, pH, or TDS during the 2017 annual monitoring event completed in October 2017. The next annual CMP monitoring event is scheduled for the fourth quarter of 2018.

Please contact me at (760) 791-5884 if you have any questions regarding the CMP.

Sincerely,

A handwritten signature in black ink, appearing to read 'Curt Russell', is written over a light blue horizontal line.

Curt Russell
Topock Remediation Project Manager

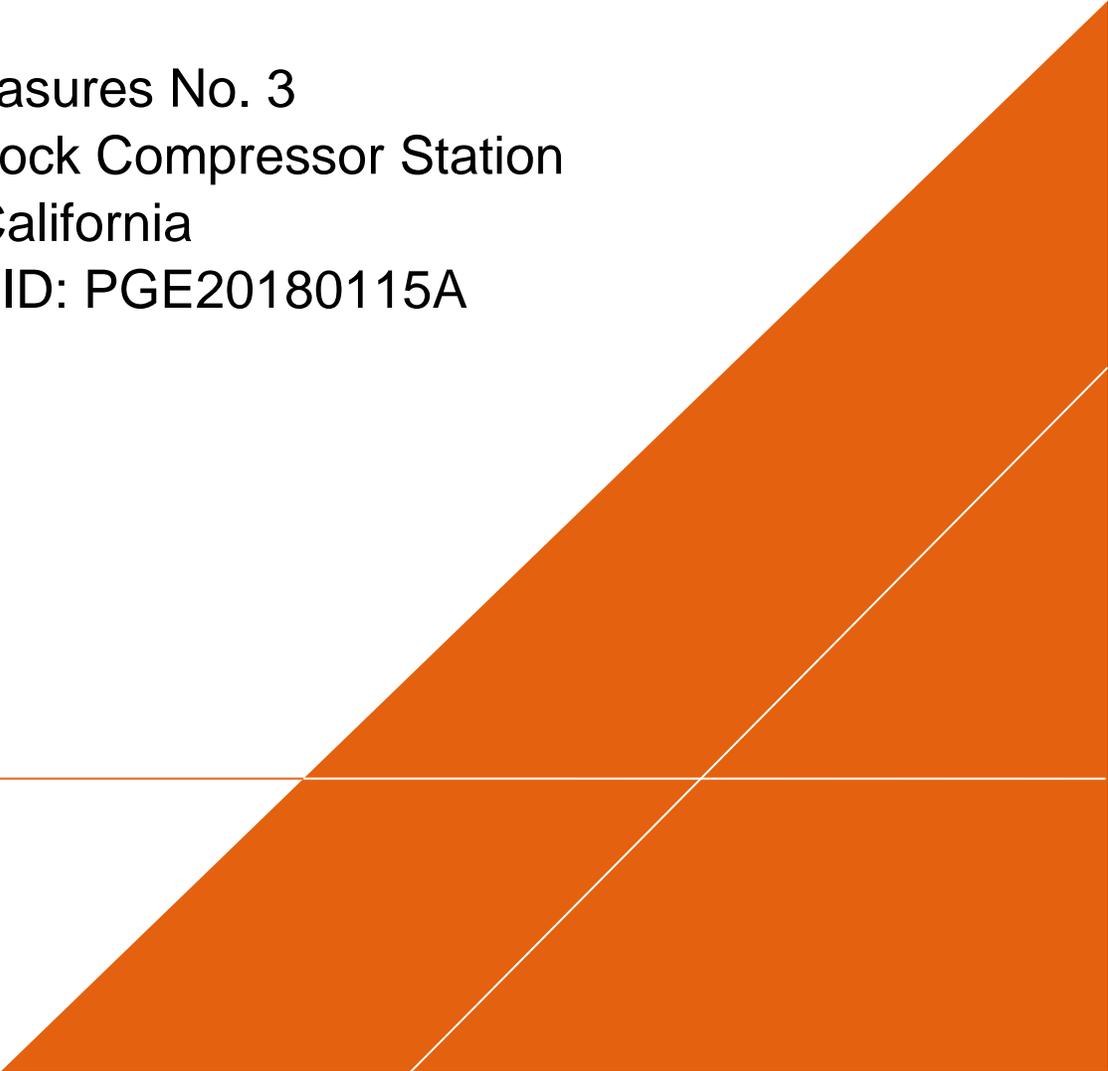
Cc: Robert Perdue, Water Board
Jose Cortez, Water Board
Aaron Yue, DTSC
Christopher Guerre, DTSC

Pacific Gas and Electric Company

COMPLIANCE MONITORING PROGRAM 2017 ANNUAL GROUNDWATER MONITORING REPORT

Interim Measures No. 3
PG&E Topock Compressor Station
Needles, California
Document ID: PGE20180115A

January 15, 2018



CMP 2017 ANNUAL GROUNDWATER MONITORING REPORT

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

Document ID: PGE20180115A



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January 15, 2018

CONTENTS

Acronyms and Abbreviations.....	iv
1 Introduction	1-1
1.1 Description of Groundwater Injection Well Field.....	1-1
1.2 CMP Background and Objectives.....	1-1
2 Summary of 2017 Activities	2-1
3 Summary of 2017 Sampling Results.....	3-1
3.1 Analytical Results.....	3-1
3.1.1 Hexavalent Chromium and Chromium	3-1
3.1.2 Other Metals and General Chemistry.....	3-2
3.2 Analytical Data Quality Review.....	3-2
3.2.1 Matrix Spike and Matrix Spike Duplicate Samples.....	3-2
3.2.2 Quantitation and Sensitivity.....	3-3
3.2.3 Holding Time	3-3
3.2.4 Field Duplicates	3-3
3.2.5 Method Blanks.....	3-3
3.2.6 Equipment Blanks.....	3-3
3.2.7 Laboratory Duplicates	3-3
3.2.8 Laboratory Control Samples.....	3-3
3.2.9 Calibration	3-3
3.2.10 Conclusion.....	3-4
3.3 Influence of Treated Water on Aquifer Water Quality.....	3-4
3.4 Field Parameter Data.....	3-5
3.5 ARAR Monitoring Requirements.....	3-5
4 Summary of 2017 Water Level Data.....	4-1
5 Status of Monitoring Activities.....	5-1
6 References.....	6-1
7 Certification	7-1

EXHIBIT (IN TEXT)

Exhibit 1 Historical Modifications to the CMP

TABLES

Table 1	Operational Status of Interim Measures No. 3 Injection Wells from July 2005 through December 2017
Table 2	Well Construction and Sampling Summary for Groundwater Samples, 2017
Table 3	Chromium Results for Groundwater Samples, 2017
Table 4	Metals Results for Groundwater Samples, 2017
Table 5	Other Inorganics Results for Groundwater Samples, 2017
Table 6	Treated Water Quality Compared to OW and CW Pre-injection Water Quality
Table 7	Treated Water Quality Compared to 2017 Annual Monitoring Event Water Quality
Table 8	Field Parameters and Manual Water Level Measurements for Groundwater Samples, 2017
Table 9	ARAR Monitoring Information for Groundwater Samples, 2017
Table 10	Manual Water Level Measurements and Elevations, 2017
Table 11	Vertical Gradients within the OW and CW Clusters, 2017

FIGURES

Figure 1	Site Location and Interim Measures No. 3 Treatment System
Figure 2	Monitoring Locations for CMP and Injection Well Field
Figure 3A	OW-1S, OW-2S, OW-5S Concentration versus Time Plots
Figure 3B	OW-1M, OW-2M, OW-5M Concentration versus Time Plots
Figure 3C	OW-1D, OW-2D, OW-5D Concentration versus Time Plots
Figure 3D	CW-1M, CW-2M, CW-3M, CW-4M Concentration versus Time Plots
Figure 3E	CW-1D, CW-2D, CW-3D, CW-4D Concentration versus Time Plots
Figure 4A	OW-1S Groundwater Elevation Hydrograph
Figure 4B	OW-2S Groundwater Elevation Hydrograph
Figure 4C	OW-5 Groundwater Elevation Hydrographs
Figure 5A	Groundwater Elevations for Shallow Wells, December 4, 2017
Figure 5B	Groundwater Elevation Contours for Mid-Depth Wells, December 4, 2017

Figure 5C Groundwater Elevation Contours for Deep Wells, December 4, 2017

APPENDICES

- Appendix A Laboratory Reports, 2017 (provided on CD-ROM only)
- Appendix B Field Data Collection Sheets (provided on CD-ROM only)
- Appendix C 2016 Ammonia Sampling Results (provided on CD-ROM only)

ACRONYMS AND ABBREVIATIONS

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

1 INTRODUCTION

This Compliance Monitoring Program (CMP) 2017 Annual Groundwater Monitoring Report has been prepared on behalf of Pacific Gas and Electric Company (PG&E) for the Interim Measures No. 3 (IM-3) injection well field area at the Topock Compressor Station site (the Site) near Needles, California. PG&E is currently implementing IM-3 to mitigate elevated chromium and hexavalent chromium (Cr[VI]) concentrations in groundwater at the Site. The components of IM-3 include groundwater extraction in the Colorado River floodplain, ex-situ treatment of the extracted groundwater, and discharge of the treated groundwater via an onsite injection well field located in the East Mesa Injection Area. Figure 1 shows the locations of the groundwater extraction, conveyance, treatment, and injection facilities associated with the IM-3 system. The objective of this report is to document the results of CMP activities conducted during the 2017 annual period (from January 1, 2017 through December 31, 2017).

1.1 Description of Groundwater Injection Well Field

Treated water from the IM-3 system is pumped through an aboveground pipeline to the injection well field, which is located nearly 1,500 feet west of the treatment plant on what is known as the East Mesa (CH2M HILL 2015a). The injection well field comprises two injection wells (IW-02 and IW-03), which are constructed of 6-inch-diameter stainless-steel louvered screen connected to mild steel risers (CH2M HILL 2015a). The two injection wells are 340 and 330 feet deep, respectively, with a 160-foot screened interval and design injection capacity of 200 gallons per minute.

Three observation well (OW) clusters (OW-01, OW-02, and OW-05) are located between 50 and 100 feet from the injection wells on the East Mesa. Each OW cluster includes wells screened in the shallow, mid-depth, and deep monitoring zones. Four additional monitoring well clusters, known as the compliance well (CW) clusters (CW-01, CW-02, CW-03, and CW-04) surround the East Mesa and are located between 300 and 550 feet from the injection wells. Each CW cluster includes wells screened in the mid-depth and deep monitoring zones. The locations of the injection wells, OW clusters, and CW clusters are shown on Figure 2.

1.2 CMP Background and Objectives

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

Exhibit 1. Historical Modifications to the CMP

Modification	Approval Date
Modification of reporting requirements	DTSC: June 9, 2006
Reduction of constituents analyzed during quarterly sampling of CMP observation wells	Water Board: January 23, 2007 DTSC: January 22, 2007
Change from laboratory pH to field collected pH for reporting	Water Board: October 16, 2007 DTSC: January 22, 2008
Modification of Cr(VI) analytical methods to extend hold time to 28 days	Water Board: November 13, 2007 DTSC: January 22, 2008
Modification of sampling and reporting frequency and the field pH trigger range for the CMP contingency plan	Water Board: August 28, 2008 DTSC: December 12, 2008 (pH), September 3, 2009
United States Department of the Interior (DOI) adopts waste discharge requirements (WDRs) as applicable or relevant and appropriate requirements (ARARs)	DOI: August 18, 2011 Water Board: July 26, 2011
Modification of sampling and reporting frequency to eliminate the first half semiannual monitoring event and report (DOI 2015)	DOI: March 20, 2015 Water Board: March 16, 2015

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

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

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

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

The IM-3 injection system comprises IW-02 and IW-03 (Figure 2). Operation of the treatment system was conditionally approved on July 15, 2005 (DTSC 2005), and injection into IW-02 began on July 31, 2005 (CH2M HILL 2015a). Table 1 provides a chronological summary of injection activities implemented for IM-3 through 2017.

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

- Nine OWs (OW-01S, OW-01M, OW-01D, OW-02S, OW-02M, OW-02D, OW-05S, OW-05M, and OW-05D) in the East Mesa Injection Area are sampled annually during the fourth quarter for a limited suite of constituents.
- In addition, six of the OWs (OW-01M, OW-01D, OW-02M, OW-02D, OW-05M, and OW-05D) are sampled for a full suite of constituents, one cluster at a time, on a triennial (once every 3 years) schedule. By the end of each 3-year period, all middle- and deep-zone OWs are sampled for a full suite of constituents. The triennial sampling occurs during the fourth quarter with the annual sampling.
- Eight CWs are sampled annually during the fourth quarter for a full suite of constituents.

Table 2 provides a summary of well construction and sampling method information for the wells in the CMP network. The full suite of constituents includes Cr(VI), chromium, metals, specific conductance, total dissolved solids (TDS), turbidity, alkalinity, ammonia, and major inorganic cations and anions. The limited suite of constituents is similar to the full suite except that several metals/cations, total alkalinity, and ammonia are omitted.

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

2 SUMMARY OF 2017 ACTIVITIES

This section provides an overview of activities completed for the 2017 annual monitoring event, which was conducted between October 23 and 25, 2017. Field activities included the following:

- Manual water level measurements and field water quality parameter data were collected before sampling.
- Water quality samples were collected from nine OWs and eight CWs.
- A field duplicate sample was collected at well CW-02D to assess field sampling and analytical quality control (QC).

In addition, groundwater elevation data were collected continuously using pressure transducers installed in five of the 17 CMP wells: OW-01S, OW-02S, OW-05S, OW-05M, and OW-05D. Data from the transducers were downloaded approximately monthly during the 2017 annual period. Manual water level measurements were also collected quarterly from the 17 CMP wells.

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

CMP groundwater samples were analyzed by Asset Laboratories in Las Vegas, Nevada and BC Laboratories, Inc. in Bakersfield, California, both California-certified analytical laboratories. Analytical methods, sample volumes and containers, sample preservation, and QC sample requirements were in accordance with the PG&E Program Quality Assurance Project Plan, Revision 2 (QAPP; CH2M HILL 2012) and QAPP Addendum (CH2M HILL 2015c). Moreover, data validation and management were conducted in accordance with the quality assurance (QA) and QC requirements set forth in the QAPP and QAPP Addendum.

3 SUMMARY OF 2017 SAMPLING RESULTS

This section summarizes the results of the CMP groundwater sampling activities conducted in 2017. Nine OWs and eight CWs were sampled during the 2017 annual monitoring event. Locations of the CMP groundwater monitoring well clusters are shown on Figure 2. Groundwater samples collected from these wells were analyzed for Cr(VI), chromium, specific conductance, metals, TDS, turbidity, alkalinity, ammonia, and/or major inorganic cations and anions. These results are presented in Section 3.1, and the findings from the laboratory data quality review are provided in Section 3.2. Section 3.3 provides an assessment of the influence of injection operations on aquifer water quality in the East Mesa Injection Area and vicinity based on comparison of groundwater chemistry measured in the OWs and CWs to chemistry of the injected water.

Water level measurement and field water quality parameter data collected as part of sampling are presented in Section 3.4.

Laboratory analytical reports and field data collection sheets for the 2016 annual monitoring event are included in Appendices A and B, respectively.

3.1 Analytical Results

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

3.1.1 Hexavalent Chromium and Chromium

Table 3 summarizes the Cr(VI) and chromium analytical results for groundwater in the shallow, middle, and deep wells sampled during the 2017 annual monitoring event. These results are discussed below.

- For shallow wells:
 - Cr(VI) was reported at concentrations ranging up to 17 micrograms per liter ($\mu\text{g/L}$). The maximum Cr(VI) concentration was detected in OW-02S.
 - Chromium was reported at concentrations ranging up to 18 $\mu\text{g/L}$. The maximum chromium concentration was detected in OW-02S.
- For middle wells:
 - Cr(VI) was reported at concentrations ranging up to 4.9 $\mu\text{g/L}$. The maximum Cr(VI) concentration was detected in CW-03M.
 - Chromium was reported at concentrations ranging up to 4.6 $\mu\text{g/L}$. The maximum chromium concentration was detected in CW-03M.

- For deep wells:
 - Cr(VI) was reported at concentrations ranging up to 0.39 µg/L. The maximum Cr(VI) concentration was detected in CW-04D.
 - Chromium was detected in one well (OW-02D) at a concentration of 2.3 µg/L.

Cr(VI) and chromium concentrations in samples collected during the 2017 annual monitoring event did not exceed the WQO trigger levels of 32 µg/L and 28 µg/L, respectively. Thus, the contingency plan was not triggered for these constituents.

3.1.2 Other Metals and General Chemistry

Other metals results for groundwater samples collected during the 2017 annual monitoring event are summarized in Table 4. Detected metals were arsenic, barium, manganese, molybdenum, selenium, vanadium, boron, calcium, total iron, potassium, magnesium, and sodium. In general, concentrations of these metals observed during the 2017 annual monitoring event were similar to those observed historically.

General chemistry results—including specific conductance, field pH, TDS, turbidity, alkalinity, ammonia, and major anions—for groundwater samples collected during the 2017 annual monitoring event are summarized in Table 5. TDS concentrations ranged from 1,700 milligrams per liter (mg/L; OW-02S) to 4,500 mg/L (CW-03M), while field pH measurements ranged from 6.67 (OW-01S) to 7.92 (CW-03D). During the 2017 annual monitoring event, analytical results for the sampled wells met the WQOs for TDS (i.e., less than 10,800 mg/L) and pH (i.e., between 6.2 and 9.2). Thus, the contingency plan was not triggered for these parameters.

Ammonia results for groundwater samples collected during the 2016 annual monitoring event (completed between October 18 and 20, 2016) were mistakenly omitted from the Combined CMP 2016 Annual Groundwater Monitoring Report and Performance Assessment Report (Arcadis U.S., Inc. [Arcadis] 2017). These results are summarized in Appendix C and are consistent with historical data (i.e., concentrations are typically non-detect). The associated laboratory analytical reports are also provided in Appendix C.

3.2 Analytical Data Quality Review

Project chemists independently reviewed the laboratory analytical data generated from the 2017 annual monitoring event to assess data quality and identify deviations from analytical requirements. The QA and QC requirements are outlined in the QAPP and QAPP Addendum (CH2M HILL 2012 and 2015c, respectively). A detailed discussion of data quality for CMP sampling data is presented in the data validation reports, which are maintained in the project file and available upon request.

3.2.1 Matrix Spike and Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) samples were performed as required by the analytical method. In some cases, other project samples were used to fulfil the laboratory's QC batch requirements. When CMP samples were selected for MS/MSD analyses, recoveries were within QC criteria with a few exceptions as follows:

- Dissolved copper was recovered at concentrations less than QC limits in the MS of sample CW-04M-Q417. The associated sample result was qualified as estimated non-detect and flagged “UJ” accordingly.
- The serial dilution performed on sample CW-02D-Q417 for dissolved calcium and dissolved magnesium did not meet precision criteria. The associated sample results were qualified as estimated detects and flagged “J” accordingly.

3.2.2 Quantitation and Sensitivity

All method and analyte combinations met the project decision-making requirements.

3.2.3 Holding Time

All samples were analyzed within the QAPP-recommended holding times.

3.2.4 Field Duplicates

A field duplicate sample (MW-901-Q417) was collected and analyzed, and met QC criteria with exceptions as follows:

- Dissolved boron, dissolved calcium, and dissolved magnesium demonstrated a relative percent difference greater than QC limits in the field duplicate pair of samples CW-02D-Q417/MW-901-Q417. The detected results were qualified as estimated (“J” flagged).

3.2.5 Method Blanks

Method blanks were analyzed at the required frequency and were free of contamination.

3.2.6 Equipment Blanks

Equipment blanks were collected at the frequency required by the QAPP and were free of contamination.

3.2.7 Laboratory Duplicates

Laboratory duplicate acceptance criteria for the analytical methods were met.

3.2.8 Laboratory Control Samples

Laboratory control samples were analyzed as required, and accuracy and precision criteria were met.

3.2.9 Calibration

Initial calibration curves, blanks, and verification analyses were performed at the required frequency and met QC criteria.

3.2.10 Conclusion

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

3.3 Influence of Treated Water on Aquifer Water Quality

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

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

Table 6 provides selected treated water analytical results from system sampling events conducted on August 29, 2005; April 7, 2010; October 6, 2015; and October 1, 2017. As discussed in previous CMP reports, while concentrations of some parameters vary in the effluent samples, a number of constituents have exhibited relatively consistent concentrations over the duration of injection operations (e.g., Cr[VI], chromium, fluoride, dissolved molybdenum, nitrate/nitrite as nitrogen, sulfate, and TDS [CH2M HILL 2015a]). These seven constituents are used to characterize the injected water and serve as a basis for determining whether a given groundwater monitoring well is being affected by injection operations. Based on review of the August 2005 through October 2017 effluent sampling results, the injected water exhibits the following general characteristics:

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

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

Pre-injection conditions in the East Mesa Injection Area and vicinity were established based on the results of baseline sampling conducted for the OWs (July 27 and 28, 2005) and CWs (September 15, 2005). Analytical results for the baseline samples are presented in Table 6 and are considered representative of groundwater unaffected by injection operations. Comparison of pre-injection groundwater quality to the

injected water profile shows that there are some similarities in constituent concentrations. For example, most of the baseline samples collected from deep wells (OW-01D, OW-02D, OW-05D, CW-03D, and CW-04D) contained no detectable Cr(VI) or chromium, similar to the injected water (CH2M HILL 2015a). However, other constituents are present at significantly different concentrations in the injected water versus pre-injection groundwater. Thus, when considering the entire suite of seven constituents, as shown in Table 6, it is evident that the injected water and pre-injection groundwater have distinct chemistries.

In contrast, Table 7 compares constituent concentrations in the injected water (treated groundwater) to those measured in the OWs and CWs during the most recent (2017 annual) monitoring event (i.e., more than 10 years following the initiation of injection operations). Unlike the pre-injection (July through September 2005) well monitoring results, the 2017 annual monitoring results demonstrate that water chemistry measured in most of the OWs and CWs either has shifted towards or been replaced by the chemistry of the injected treated water. This conclusion is supported by the concentration versus time plots presented on Figures 3A through 3E for the OWs and CWs. These plots, which include data from baseline through the 2017 annual monitoring event, illustrate shifts from baseline concentrations towards the injected treated water chemistry that indicate arrival of the injected water front.

In general, the following 12 wells currently display the characteristics of injected water and are considered to be representative of locations and depths where this water has largely displaced ambient groundwater: OW-01M, OW-01D, OW-02M, OW-02D, OW-05M, OW-05D, CW-01M, CW-01D, CW-02M, CW-02D, CW-03D, and CW-04D. Four additional wells (OW-01S, OW-05S, CW-03M, and CW-04M) exhibit gradually increasing trends in groundwater concentrations of sulfate, TDS, and/or nitrate/nitrite as nitrogen that are indicative of potential injected water influence. In the past, shallow observation well OW-02S demonstrated little or no water quality effects due to injection operations compared to the other CMP wells (i.e., concentrations of sulfate and TDS were relatively stable and consistent with baseline levels). However, over the past few years, sulfate and TDS concentrations in OW-02S have increased steadily while molybdenum concentrations have decreased, approaching the levels observed in the injected water (Figure 3A).

3.4 Field Parameter Data

Water level was measured at each well before purging and sampling. In addition, water quality parameters, including specific conductance, temperature, pH, oxidation reduction potential, dissolved oxygen, and turbidity, were measured during purging using a field water quality instrument and flow-through cell to determine sufficient well purging. Field water quality data collected during the 2017 annual monitoring event are summarized in Table 8. Field data collection sheets for the 2017 annual monitoring event are provided in Appendix B.

3.5 ARAR Monitoring Requirements

Table 9 identifies the laboratory that performed each analysis and lists the following information for the 2017 annual monitoring event, as required by the ARARs:

- Sample location
- Sample identification number

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

4 SUMMARY OF 2017 WATER LEVEL DATA

Table 10 summarizes the manual water level measurements and calculated groundwater elevations from the quarterly well gauging events conducted in 2017. In compliance with Condition No. 2 of DTSC's 2009 conditional approval letter (DTSC 2009), the IM-3 Plant Manager confirmed that the IM-3 system was operating normally both the day before and the day of manual water level collection, with no injection well backwashing events or unplanned shutdowns.

In addition to the manual water level measurements, water level data were collected continuously (with readings recorded every 30 minutes) using pressure transducers deployed in select wells: OW-1S, OW-2S, OW-5S, OW-5M, and OW-5D. Hydrographs produced using the transducer data are presented on Figures 4A through 4C, and illustrate groundwater elevation trends and vertical hydraulic gradients observed over the 2017 annual period for specific OWs.

Figure 5A shows groundwater elevations for the three shallow wells based on the fourth quarter (December 4, 2017) manual water level measurements. The shallow-zone water level elevations are not contoured due to an insufficient number of wells to satisfactorily illustrate a groundwater potentiometric surface under injection conditions. Groundwater elevation maps for the middle and deep wells are provided as Figures 5B and 5C, respectively. The data that were plotted and/or used for contouring were the December 4, 2017 (fourth quarter) manual water level measurements collected within a 1-hour period.

As shown on Figure 2, the IM-3 injection well field is located in the uplands (East Mesa) area of the Site. Based on site-wide groundwater elevation data, regional groundwater flow in the uplands portion of the Site is generally to the east/northeast (CH2M HILL 2015b). On a local scale, as shown on Figures 5B and 5C, injections of treated water have resulted in a potentiometric mound in the middle and deep zones centered on the active IM-3 injections wells. Consistent with previous observations, the potentiometric mound is generally elliptical in shape, with the major axis running from approximately southwest to northeast (CH2M HILL 2015a; Arcadis 2016, 2017). The potentiometric mound appears to be stable at a height of approximately 1 foot or less above the surrounding water level (based on the December 4, 2017 manual water level measurements [see Figures 5B and 5C]), which is consistent with information reported previously (CH2M HILL 2015a; Arcadis 2016, 2017).

Table 11 summarizes the vertical gradients calculated using the December 4, 2017 manual water level measurement data. In general, average vertical gradients have been upward at the OW and CW clusters since injection began (CH2M HILL 2015a). As shown in Table 11, upward vertical gradients were generally observed between depth intervals (i.e., deep to middle and middle to shallow) in a given well cluster, consistent with historical data. The exception was the slightly downward vertical gradient observed between OW-05M and OW-05D. A downward gradient between the middle and deep zones at the OW-05 cluster location is also demonstrated by the hydrographs for OW-05M and OW-05D, generated using available transducer data (see Figure 4C), and is consistent with the relatively higher degree of mounding observed in the middle zone versus the deep zone based on the December 4, 2017 manual water level measurement data.

Calculated vertical gradients were generally of the same order of magnitude between well clusters or between the different depth intervals (Table 11). Because the injection wells are screened in the deeper

portions of the aquifer, the head increase resulting from the injection of treated groundwater is typically greater in the deep and middle zones compared to the shallow zone (CH2M HILL 2015a).

5 STATUS OF MONITORING ACTIVITIES

Groundwater samples collected from the CMP well network in October 2017 to fulfill the annual monitoring requirements were collected using the traditional three-well-volume purge method (see Table 2). A supplemental sampling event, which included the 17 CMP wells, was conducted in December 2017 as part of an ongoing trial of alternative purging/sampling approaches (e.g., micro-purge/minimal drawdown method versus the three-well-volume purge method) for groundwater data collection at the Topock Compressor Station site (PG&E 2015; DTSC 2017). A second supplemental sampling event will be completed for the CMP wells in the second quarter of 2018 to provide a larger dataset for the alternative sampling methods evaluation, and the next annual CMP monitoring event will occur in the fourth quarter of 2018. The groundwater monitoring report for this event will be submitted by January 15, 2019, and will include a discussion of the results of the sampling method trials for the CMP wells.

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7 CERTIFICATION

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

Certification Statement:

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

Signature:  _____

Name: Curt Russell

Company: Pacific Gas and Electric Company

Title: Topock Environmental Remediation Project Manager

Date: January 15, 2018

TABLES



Table 1

Operational Status of Interim Measures No. 3 Injection Wells From July 2005 through December 2017*PG&E Topock Compliance Monitoring Program*

Time Period	Injection Status
July 31, 2005 to Fourth Quarter 2005	Injection occurred at IW-02.
First Quarter 2006	Injection occurred primarily at IW-02 except during intervals of operational testing, when injection was divided equally between IW-02 and IW-03.
Second Quarter 2006	Injection occurred at IW-02.
Third Quarter 2006	In August 2006, IW-02 went offline for routine maintenance, and injection commenced at IW-03.
Fourth Quarter 2006	Injection occurred at IW-03, except during routine maintenance.
First Quarter 2007	Injection occurred at IW-03 and transitioned over to IW-02 on March 8.
Second Quarter 2007	Injection occurred at IW-03 from April 3 through June 20. Injection switched to IW-02 on June 20 and continued through July 20, 2007.
Third Quarter 2007	Injection occurred at IW-03 after July 20. Injection occurred at IW-02 on August 30 for an injection test and then returned to IW-03 after August 31.
Fourth Quarter 2007	Injection occurred at IW-03 and then switched to IW-02 on September 25 for routine maintenance. Injection returned to IW-03 after October 9.
First Quarter 2008	Injection occurred at IW-03 only. From February 5 through February 13, well maintenance activities were conducted at IW-02.
Second Quarter 2008	Injection occurred at IW-03 only. IM-3 system offline from April 21 through April 28 due to routine maintenance. Backwashing was performed at IW-03 on April 9, May 7, May 15, May 22, June 3, and June 4, 2008.
Third Quarter 2008	Injection occurred primarily at IW-03. Injection also occurred at IW-02 for short interval on July 25 and from August 12 - August 31, 2008. Backwashing was performed at IW-03 on June 17, June 27, July 9, July 15, July 17, July 18, August 12, August 13, September 2, and September 3, 2008. Backwashing was performed at IW-02 on September 9 - September 11, 2008.
Fourth Quarter 2008	Injection occurred at IW-03 and then switched to IW-02 on September 23. Injection returned to IW-03 on October 7 and switched back to IW-02 on October 21. Injection primarily occurred at IW-02 until November 11 when it switched to IW-03 until December 3, 2008. Injection continued at IW-02 until December 16, 2008 and occurred concurrently and continued at IW-03 on December 11, 2008.
First Quarter 2009	Injection switched to IW-02 on December 30, 2008. On January 13, 2009 injection transitioned to IW-03. Backwashing events were performed periodically during the intervals when each injection well was offline. Routine and scheduled maintenance occurred December 18, 2008 and January 21, 2009 at which time both wells were offline.
Second Quarter 2009	Injection continued at IW-03 until April 20, 2009. Injection ceased from April 20, 2009 to April 27, 2009 due to routine maintenance after which injection continued at IW-03 until May 26, 2009 when it transitioned to IW-02. Injection continued at IW-02 until June 9, 2009 when it switched to IW-03. Injection returned to IW-02 on June 24, 2009.
Third Quarter 2009	IM-3 injection alternates between the two wells approximately every two weeks. Injection continued at IW-02 until July 8, when it transitioned to IW-03. Injection ceased from July 23 to 27, 2009 when it continued at IW-03 until September 9, 2009. Unplanned downtime occurred from September 9 - 14, 2009. On September 16, 2009 injection continued at IW-02, except during times of routine maintenance or otherwise mentioned.
Fourth Quarter 2009	Injection occurred at IW-02 until November 25, 2009 when it switched to IW-03. Injection continued at IW-03, except during times of routine maintenance.
First Half 2010	Injection occurred mainly at IW-03 until March 3, 2010. Beginning March 3, 2010, IM-3 injection alternated between the two wells approximately every two weeks until April 20, 2010 for a planned shutdown. On April 22, 2010, injection resumed at IW-03 and alternated between the two wells approximately every two weeks. Backwashing was performed periodically during the intervals when each injection well was offline.

Table 1

Operational Status of Interim Measures No. 3 Injection Wells From July 2005 through December 2017*PG&E Topock Compliance Monitoring Program*

Time Period	Injection Status
Second Half 2010	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: July 22 - August 25, August 30 - September 7, September 16 - October 15, November 5 - 18, and December 17 - 31, 2010.
First Half 2011	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: January 27 - February 10, February 23 - March 7, March 30 - April 20, May 6 - June 7, and June 22 - 28, 2011. Backwashing was performed periodically during the intervals when each injection well was offline. A planned shutdown occurred April 25 - 29 and June 28 - 30.
Second Half 2011	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: July 14 through August 3, August 10 through 13, September 11 through 22, October 6 through 10; and October 27 through December 31. Backwashing was performed periodically during the intervals when each injection well was offline.
First Half 2012	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: January 1 through January 6, 2012; February 2 through February 16, 2012; March 2 through April 5, 2012; May 10 through May 21, 2012; May 29 through June 1, 2012; June 14, 2012; and June 21 through June 27, 2012.
Second Half 2012	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: July 18 through July 25, 2012; August 1 through August 13, 2012; August 17 through August 22, 2012; August 31 through September 26, 2012; and September 29 through October 9, 2012.
First Half 2013	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: March 5 through March 14, 2013; April 8 through May 22, 2013; June 24 through June 25, 2013; and June 29 through June 30, 2013.
Second Half 2013	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: July 1 - 9, 2013; July 31 through August 12, 2013; October 22 through November 6, 2013; November 26 through December 12, 2013; and December 28 - 31, 2013.
First Half 2014	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: January 6, 2014; January 16 through January 29, 2014; April 17 through 23, 2014; and May 10 through June 22, 2014, and June 25, 2014.
Second Half 2014	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: July 21 - 30, 2014; September 23 - 25, 2014; and November 19 - 24, 2014.
First Half 2015	Injection occurred primarily at IW-03 with the exception of the following periods when it occurred primarily at IW-02: January 1 - 14, 2015; March 5 - 31, 2015; April 7 and 8, 2015; June 11, 2015; and June 26, 2015. The system was shut down from April 28, 2015 to May 4, 2015 for scheduled semiannual facility maintenance.
Second Half 2015	Injection occurred primarily at IW-02 with the exception of the following periods when it occurred primarily at IW-03: July 1 - 19, 2015; August 31 - September 1, 2015; and September 26 - October 13, 2015.
First Half 2016	Injection occurred primarily at IW-03 with the exception of the following periods when it primarily occurred at IW-02: January 1 through 31, 2016; February 1 through 25, 2016; and March 1 through 4, 2016.
Second Half 2016	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: July 1 through 31, 2016; August 1, 2016; November 12, 2016; and December 1 through 11, 2016.
First Half 2017	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: January 28, 2017; April 7 through 27, 2017; and April 29 through June 30, 2017.
Second Half 2017	Injection occurred primarily at IW-02 with the exception of the following periods when it primarily occurred at IW-03: July 1 through August 14, 2017; August 26 through 27, 2017; and November 18 through December 31, 2017.

Table 2

Well Construction and Sampling Summary for Groundwater Samples, 2017

PG&E Topock Compliance Monitoring Program

Well ID	Site Area	Measuring Point			Depth to Water (feet btoc)	Sampling System	Typical Purge Rate (gpm)	Typical Purge Volume (gallons)	Pump Depth (feet bgs)	Transducer Status
		Elevation (feet amsl)	Screen Interval (feet bgs)	Well Casing (inches)						
IM Compliance Wells										
CW-01M	East Mesa	566.07	140 - 190	2 (PVC)	109.94	Temp Redi-Flo AR	2	42	165.0	
CW-01D	East Mesa	566.46	250 - 300	2 (PVC)	109.92	Temp Redi-Flo AR	3	98	180.0	
CW-02M	East Mesa	549.45	152 - 202	2 (PVC)	93.51	Temp Redi-Flo AR	2	56	195.0	
CW-02D	East Mesa	549.43	285 - 335	2 (PVC)	93.04	Temp Redi-Flo AR	3	134	159.0	
CW-03M	East Mesa	534.10	172 - 222	2 (PVC)	78.34	Temp Redi-Flo AR	2	74	180.0	
CW-03D	East Mesa	534.14	270 - 320	2 (PVC)	77.72	Temp Redi-Flo AR	3	134	143.0	
CW-04M	East Mesa	518.55	119.5 - 169.5	2 (PVC)	62.22	Temp Redi-Flo AR	2	56	160.0	
CW-04D	East Mesa	518.55	233 - 283	2 (PVC)	62.05	Temp Redi-Flo AR	3	124	134.0	
IM Observation Wells										
OW-01S	East Mesa	550.21	83.5 - 113.5	2 (PVC)	94.36	Temp Redi-Flo AR	1	10.2	100.0	Active
OW-01M	East Mesa	550.36	165 - 185	2 (PVC)	94.12	Temp Redi-Flo AR	3	48	109.6	
OW-01D	East Mesa	550.36	257 - 277	2 (PVC)	93.87	Temp Redi-Flo AR	3	94	111.4	
OW-02S	East Mesa	548.88	71 - 101	2 (PVC)	93.02	Temp Redi-Flo AR	1	15	100.0	Active
OW-02M	East Mesa	548.52	190 - 210	2 (PVC)	92.28	Temp Redi-Flo AR	2	61	111.4	
OW-02D	East Mesa	549.01	310 - 330	2 (PVC)	92.29	Temp Redi-Flo AR	2	127	110.3	
OW-05S	East Mesa	551.83	70 - 110	2 (PVC)	95.82	Temp Redi-Flo AR	1	8	100.0	Active
OW-05M	East Mesa	551.81	210 - 250	2 (PVC)	94.59	Temp Redi-Flo AR	2	80	112.5	Active
OW-05D	East Mesa	552.41	300 - 320	2 (PVC)	95.26	Temp Redi-Flo AR	3	131	113.2	Active

Notes:

amsl = above mean sea level

bgs = below ground surface

btoc = below top of casing

gpm = gallons per minute

IM = Interim Measures

PVC = polyvinyl chloride

Temp Redi-Flo AR = temporary adjustable-rate electric submersible pump

Depth to water in each well was measured on December 4, 2017.

All wells were purged and sampled using the 3-well-volume method.

Table 3

Chromium Results for Groundwater Samples, 2017*PG&E Topock Compliance Monitoring Program*

		Method:	EPA 218.6	EPA 200.8
Location ID	Sample Date		Hexavalent Chromium (µg/L)	Chromium (µg/L)
CW-01M	10/25/2017		0.85	ND (1.0)
CW-01D	10/25/2017		0.35	ND (1.0)
CW-02M	10/24/2017		1.2	1.4
CW-02D	10/24/2017		0.26	ND (1.0)
CW-02D	10/24/2017	(FD)	0.23	ND (1.0)
CW-03M	10/24/2017		4.9	4.6
CW-03D	10/24/2017		0.26	ND (1.0)
CW-04M	10/24/2017		1.7	1.7
CW-04D	10/24/2017		0.39	ND (1.0)
OW-01S	10/23/2017		6.8	7.2
OW-01M	10/23/2017		0.87	1.0
OW-01D	10/25/2017		0.27	ND (1.0)
OW-02S	10/23/2017		17	18
OW-02M	10/25/2017		0.58	ND (1.0)
OW-02D	10/25/2017		0.25	2.3
OW-05S	10/23/2017		14	14
OW-05M	10/25/2017		0.45	ND (1.0)
OW-05D	10/25/2017		0.29	ND (1.0)

Notes:

µg/L = micrograms per liter

EPA = United States Environmental Protection Agency

FD = field duplicate

ND = parameter not detected at the listed reporting limit

Hexavalent chromium and chromium samples are field filtered.

Table 4
Metals Results for Groundwater Samples, 2017
 PG&E Topock Compliance Monitoring Program

Method:		Dissolved EPA 200.7, 200.8, 245.1; EPA 6010B/6020																									
Location ID	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Boron	Calcium	Iron, total	Iron, dissolved	Potassium	Magnesium	Sodium	
											µg/L																mg/L
CW-01M	10/25/2017	ND (50)	ND (0.5)	1.1	81	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (5.0)	1.5	ND (0.2)	17	ND (1.0)	3.2	ND (0.5)	ND (2.5)	2.6	ND (10)	0.99	140	ND (0.02)	ND (0.02)	11	12	1,400	
CW-01D	10/25/2017	ND (50)	ND (0.5)	1.1	20	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (5.0)	0.58	ND (0.2)	19	ND (1.0)	3.3	ND (0.5)	ND (2.5)	2.4	ND (10)	1.0	140	ND (0.02)	ND (0.02)	11	15	1,400	
CW-02M	10/24/2017	ND (50)	ND (0.5)	1.8	61	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (5.0)	1.3	ND (0.2)	15	ND (1.0)	3.2	ND (0.5)	ND (2.5)	3.6	ND (10)	1.1	120	0.022	ND (0.02)	11	8.9	1,500	
CW-02D	10/24/2017	ND (50)	ND (0.5)	2.6	14	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (5.0)	1.9	ND (0.2)	12	ND (1.0)	3.5	ND (0.5)	ND (2.5)	4.0	ND (10)	1.0 J	87 J	ND (0.02)	ND (0.02)	10	4.8 J	1,400	
CW-02D	10/24/2017 (FD)	ND (50)	ND (0.5)	2.5	15	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (5.0)	1.9	ND (0.2)	12	ND (1.0)	3.5	ND (0.5)	ND (2.5)	4.1	ND (10)	1.3 J	110 J	ND (0.02)	ND (0.02)	11	6.1 J	1,500	
CW-03M	10/24/2017	ND (50)	ND (0.5)	1.2	40	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (5.0)	1.1	ND (0.2)	26	ND (1.0)	2.0	ND (0.5)	ND (2.5)	2.8	ND (10)	1.2	170	ND (0.02)	ND (0.02)	12	13	1,600	
CW-03D	10/24/2017	ND (50)	ND (0.5)	1.4	15	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (5.0)	2.1	ND (0.2)	15	ND (1.0)	3.3	ND (0.5)	ND (2.5)	2.6	ND (10)	1.0	70	0.023	ND (0.02)	10	4.7	1,600	
CW-04M	10/24/2017	ND (50)	ND (0.5)	2.0	95	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0 UJ)	ND (5.0)	0.6	ND (0.2)	9.6	ND (1.0)	2.9	ND (0.5)	ND (2.5)	3.4	ND (10)	1.0	190	ND (0.02)	ND (0.02)	13	15	1,500	
CW-04D	10/24/2017	ND (50)	ND (0.5)	2.7	17	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (5.0)	1.5	ND (0.2)	18	ND (1.0)	3.5	ND (0.5)	ND (2.5)	3.2	ND (10)	1.0	120	ND (0.02)	ND (0.02)	11	7.8	1,400	
OW-01S	10/23/2017	--	--	--	--	--	--	--	--	--	--	--	6.4	--	--	--	--	--	--	--	--	--	--	--	--	830	
OW-01M	10/23/2017	--	--	--	--	--	--	--	--	--	--	--	19	--	--	--	--	--	--	--	--	--	--	--	--	--	1,400
OW-01D	10/25/2017	--	--	--	--	--	--	--	--	--	--	--	18	--	--	--	--	--	--	--	--	--	--	--	--	--	1,400
OW-02S	10/23/2017	--	--	--	--	--	--	--	--	--	--	--	25	--	--	--	--	--	--	--	--	--	--	--	--	--	500
OW-02M	10/25/2017	--	--	--	--	--	--	--	--	--	--	--	22	--	--	--	--	--	--	--	--	--	--	--	--	--	1,400
OW-02D	10/25/2017	--	--	--	--	--	--	--	--	--	--	--	19	--	--	--	--	--	--	--	--	--	--	--	--	--	1,500
OW-05S	10/23/2017	--	--	--	--	--	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--	--	--	--	--	--	570
OW-05M	10/25/2017	ND (50)	ND (0.5)	0.81	32	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (5.0)	ND (0.5)	ND (0.2)	19	ND (1.0)	3.3	ND (0.5)	ND (2.5)	1.6	ND (10)	0.98	120	ND (0.02)	ND (0.02)	12	21	1,400	
OW-05D	10/25/2017	ND (50)	ND (0.5)	4.1	21	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (5.0)	ND (0.5)	ND (0.2)	21	ND (1.0)	3.6	ND (0.5)	ND (2.5)	3.4	ND (10)	0.98	120	0.029	ND (0.02)	13	23	1,400	

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

Table 5
Other Inorganics Results for Groundwater Samples, 2017
PG&E Topock Compliance Monitoring Program

		Method:	EPA 120.1	Field	SM2540C	SM2130B	EPA 300.0	EPA 300.0	EPA 300.0	SM4500-NO3F	SM2320B	SM4500-NH3G
Location ID	Sample Date		Specific Conductance (µmhos/cm)	pH (pH units)	Total Dissolved Solids (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Alkalinity, total as CaCO ₃ (mg/L)	Ammonia as Nitrogen (mg/L)
CW-01M	10/25/2017		7,000	7.59	3,900	0.36	2,200	2.3	480	2.7	79	ND (1.0)
CW-01D	10/25/2017		7,000	7.67	4,000	0.23	2,100	2.5	470	2.7	63	ND (1.0)
CW-02M	10/24/2017		7,300	7.79	4,000	0.30	2,200	3.1	500	2.9	58	ND (2.0)
CW-02D	10/24/2017		7,300	7.80	4,000	0.25	2,200	1.8	470	2.8	65	ND (1.0)
CW-02D	10/24/2017	(FD)	7,300	--	4,000	0.30	2,100	1.8	480	2.9	65	ND (1.0)
CW-03M	10/24/2017		8,000	7.66	4,500	0.21	2,400	3.5	500	2.4	52	ND (1.0)
CW-03D	10/24/2017		7,400	7.92	4,000	0.21	2,100	2.7	480	2.8	63	ND (1.0)
CW-04M	10/24/2017		7,200	7.46	4,000	0.28	2,200	2.3	480	2.8	56	ND (1.0)
CW-04D	10/24/2017		7,300	7.68	3,900	0.20	2,100	3.2	480	2.9	61	ND (1.0)
OW-01S	10/23/2017		5,500	6.67	3,800	0.33	1,800	1.5	370	2.8	--	--
OW-01M	10/23/2017		6,900	7.41	4,000	0.30	2,100	2.3	470	3.0	--	--
OW-01D	10/25/2017		6,900	7.68	4,000	0.40	2,100	2.2	470	2.7	--	--
OW-02S	10/23/2017		2,900	7.65	1,700	1.8	870	3.4	130	3.0	--	--
OW-02M	10/25/2017		7,000	7.52	4,000	0.15	2,100	2.4	470	2.9	--	--
OW-02D	10/25/2017		7,100	7.57	4,100	0.32	2,200	2.4	480	2.7	--	--
OW-05S	10/23/2017		4,400	7.28	3,000	0.73	1,500	1.7	280	2.7	--	--
OW-05M	10/25/2017		7,000	7.67	3,800	0.18	2,100	2.6	470	2.7	68	1.2
OW-05D	10/25/2017		7,000	7.71	3,800	0.16	2,000	2.5	460	2.6	72	ND (1.0)

Notes:
 -- = data not collected or available
 µmhos/cm = micro-mhos per centimeter
 CaCO₃ = calcium carbonate
 EPA = United States Environmental Protection Agency
 FD = field duplicate
 mg/L = milligrams per liter
 ND = parameter not detected at the listed reporting limit
 NTU = Nephelometric Turbidity Unit
 SM = Standard Method

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

Location ID	Sample Date	Hexavalent Chromium (µg/L)	Chromium (µg/L)	Fluoride (mg/L)	Dissolved Molybdenum (µg/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Treated Water	8/29/2005	ND (1.0)	ND (2.1)	1.95	8.3	3.70	450	3,620
Treated Water	4/7/2010	0.29	ND (1.0)	1.82	18.6	2.87	512	4,270
Treated Water	10/6/2015	0.24	ND (1.0)	2.1	21	2.60	480	4,200
Treated Water	10/1/2017	ND (0.2)	ND (1.0)	2.6	19	2.7	460	4,100
OW-01S	7/28/2005	18.7	18.8 J	2.45	15.7	3.20	114	1,320
OW-01S	7/28/2005 (FD)	19.4	23.5 J	2.44	17.2	3.15	114	1,260
OW-01M	7/27/2005	16.3	18.9	2.31	27	1.01	311	3,450 J
OW-01D	7/27/2005	ND (1.0)	ND (1.3)	1.14	46.1	0.321	441	6,170 J
OW-02S	7/28/2005	15.3	14.8	3.79	35.6	3.81	126	1,090
OW-02M	7/28/2005	5.4	5.7	2.19	32.4	0.735	342	4,380
OW-02D	7/28/2005	ND (1.0)	ND (1.2)	0.966	51.2	ND (0.1)	616	9,550
OW-05S	7/28/2005	23.4	25.6	2.30	17.1	3.55	105	1,060
OW-05M	7/28/2005	8.6 J	8.8	2.74	35.4	0.621	417	5,550
OW-05D	7/28/2005	ND (1.0)	ND (1.2)	1.11	57	0.151	480	8,970
CW-01M	9/15/2005	18.1	17.8	2.34	21.6	1.11	318	2,990
CW-01D	9/15/2005	ND (1.0)	1.6	0.951	32.1	0.972	379	6,230
CW-02M	9/15/2005	15.6	15.5	2.30	23.1	0.908	342	3,500
CW-02M	9/15/2005 (FD)	15.8	14.7	2.30	21.1	0.96	341	3,440
CW-02D	9/15/2005	ND (1.0)	1.6	0.982	41.6	0.28	601	8,770
CW-03M	9/16/2005	8.8	8.1	2.57	24.2	0.642	464	4,740
CW-03D	9/16/2005	ND (1.0)	ND (1.0)	1.40	29.2	0.304	672	9,550
CW-04M	9/13/2005	19.2	19	1.50	12.3	1.18	240	3,310
CW-04D	9/13/2005	ND (1.0)	ND (1.0)	1.01	26	0.188	534	7,470

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

Table 7
Treated Water Quality Compared to 2017 Annual Monitoring Event Water Quality
PG&E Topock Compliance Monitoring Program

Location ID	Sample Date	Hexavalent Chromium (µg/L)	Chromium (µg/L)	Fluoride (mg/L)	Dissolved Molybdenum (µg/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Treated Water	10/6/2015	0.24	ND (1.0)	2.1	21	2.60	480	4,200
Treated Water	10/4/2016	ND (0.2)	ND (1.0)	2.1	22	2.9	460	4,000
Treated Water	10/1/2017	ND (0.2)	ND (1.0)	2.6	19	2.7	460	4,100
CW-01M	10/25/2017	0.85	ND (1.0)	2.3	17	2.7	480	3,900
CW-01D	10/25/2017	0.35	ND (1.0)	2.5	19	2.7	470	4,000
CW-02M	10/24/2017	1.2	1.4	3.1	15	2.9	500	4,000
CW-02D	10/24/2017	0.26	ND (1.0)	1.8	12	2.8	470	4,000
CW-02D	10/24/2017 (FD)	0.23	ND (1.0)	1.8	12	2.9	480	4,000
CW-03M	10/24/2017	4.9	4.6	3.5	26	2.4	500	4,500
CW-03D	10/24/2017	0.26	ND (1.0)	2.7	15	2.8	480	4,000
CW-04M	10/24/2017	1.7	1.7	2.3	9.6	2.8	480	4,000
CW-04D	10/24/2017	0.39	ND (1.0)	3.2	18	2.9	480	3,900
OW-01S	10/23/2017	6.8	7.2	1.5	6.4	2.8	370	3,800
OW-01M	10/23/2017	0.87	1.0	2.3	19	3.0	470	4,000
OW-01D	10/25/2017	0.27	ND (1.0)	2.2	18	2.7	470	4,000
OW-02S	10/23/2017	17	18	3.4	25	3.0	130	1,700
OW-02M	10/25/2017	0.58	ND (1.0)	2.4	22	2.9	470	4,000
OW-02D	10/25/2017	0.25	2.3	2.4	19	2.7	480	4,100
OW-05S	10/23/2017	14	14	1.7	12	2.7	280	3,000
OW-05M	10/25/2017	0.45	ND (1.0)	2.6	19	2.7	470	3,800
OW-05D	10/25/2017	0.29	ND (1.0)	2.5	21	2.6	460	3,800

Notes:

µg/L = micrograms per liter

FD = field duplicate

J = concentration estimated by laboratory or data validation

mg/L = milligrams per liter

ND = parameter not detected at the listed reporting limit

Table 8

Field Parameters and Manual Water Level Measurements for Groundwater Samples, 2017

PG&E Topock Compliance Monitoring Program

Location ID	Sample Date	Specific Conductance ($\mu\text{S}/\text{cm}$)	Temperature ($^{\circ}\text{C}$)	pH (pH units)	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Salinity (%)	Depth to Water (feet btoc)
CW-01M	10/25/2017	7,712	27.7	7.59	104	6.62	1	0.50	109.45
CW-01D	10/25/2017	7,563	27.9	7.67	107	6.75	1	0.49	109.52
CW-02M	10/24/2017	8,236	29.1	7.79	-107	6.70	1	0.53	92.93
CW-02D	10/24/2017	8,177	28.9	7.80	-89	6.88	1	0.53	92.84
CW-03M	10/24/2017	8,976	29.4	7.66	-95	5.03	1	0.58	77.95
CW-03D	10/24/2017	8,244	29.5	7.92	-83	6.71	1	0.53	77.66
CW-04M	10/24/2017	8,010	28.6	7.46	-103	5.80	2	0.52	62.00
CW-04D	10/24/2017	8,180	29.2	7.68	-120	4.79	5	0.53	61.82
OW-01S	10/23/2017	6,430	28.3	6.67	137	6.55	1	0.42	93.78
OW-01M	10/23/2017	7,887	26.7	7.41	113	10.5	1	0.51	93.49
OW-01D	10/25/2017	7,355	26.6	7.68	-87	10.3	1	0.48	92.96
OW-02S	10/23/2017	3,455	30.8	7.65	88.7	5.75	6	0.22	92.44
OW-02M	10/25/2017	7,569	27.8	7.52	123	10.4	1	0.49	91.34
OW-02D	10/25/2017	7,713	27.9	7.57	126	8.61	1	0.50	91.13
OW-05S	10/23/2017	5,443	29.8	7.28	123	5.20	2	0.35	95.26
OW-05M	10/25/2017	7,513	28.9	7.67	-97	6.48	1	0.49	92.34
OW-05D	10/25/2017	7,509	29.3	7.71	-134	8.04	1	0.49	95.02

Notes:

% = percent

 $^{\circ}\text{C}$ = degrees Celsius $\mu\text{S}/\text{cm}$ = micro-Siemens per centimeter

btoc = below top of casing

mg/L = milligrams per liter

mV = millivolt

NTU = Nephelometric Turbidity Unit

ORP = oxidation reduction potential

Salinity is calculated using the specific conductance field measurement.

Table 9
ARAR Monitoring Information for Groundwater Samples, 2017
PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
CW-01M	CW-01M-Q417	Jordan Teramae	10/25/2017	11:22	ASSET	EPA 200.8	AGD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.059
					ASSET	EPA 200.7	ALD	11/6/2017	Claire Ignacio	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/31/2017	Lilia Ramit	mg/L	79	5.0	1.2
					ASSET	EPA 200.8	ASD	11/6/2017	Claire Ignacio	µg/L	1.1	0.10	0.025
					ASSET	EPA 200.8	BAD	11/6/2017	Claire Ignacio	µg/L	81	1.0	0.070
					ASSET	EPA 200.7	BD	11/6/2017	Claire Ignacio	µg/L	990	100	38
					ASSET	EPA 200.8	BED	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	11/6/2017	Claire Ignacio	µg/L	140,000	500	28
					ASSET	EPA 200.8	CDD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.047
					ASSET	EPA 300.0	CL	10/26/2017	Ryan Bailiu	mg/L	2,200	250	4.6
					ASSET	EPA 200.8	COBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2017	Ryan Bailiu	µg/L	0.85	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/29/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 200.7	FETD	11/6/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/26/2017	Ryan Bailiu	mg/L	2.3	0.50	0.032
					ASSET	EPA 245.1	HGD	10/27/2017	Mark Gesmundo	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	11/5/2017	Claire Ignacio	µg/L	11,000	500	38
					ASSET	EPA 200.7	MGD	11/6/2017	Claire Ignacio	µg/L	12,000	100	4.4
					ASSET	EPA 200.8	MND	11/6/2017	Claire Ignacio	µg/L	1.5	0.50	0.056
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	17	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,400,000	25000	1300
					BC	SM 4500-NH3 G	NH3N	10/27/2017	Quennie Manimtim	mg/L	ND (1)	1	1
					ASSET	EPA 200.8	NID	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NH3 G	NO3NO2N	10/27/2017	Quennie Manimtim	mg/L	2.7	0.25	0.16
					ASSET	EPA 200.8	PBD	11/6/2017	Claire Ignacio	µg/L	ND (5)	5.0	0.18
					ASSET	EPA 200.8	SBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.031
					ASSET	EPA 120.1	SC	10/26/2017	Lilia Ramit	µS/cm	7,000	0.10	0.10
					ASSET	EPA 200.8	SED	11/6/2017	Claire Ignacio	µg/L	3.2	0.50	0.028
					ASSET	EPA 300.0	SO4	10/27/2017	Ryan Bailiu	mg/L	480	25	1.1
					ASSET	SM 2540 C	TDS	10/26/2017	Lilia Ramit	mg/L	3,900	50	50
					ASSET	EPA 200.8	TLD	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.15
ASSET	SM 2130 B	TRB	10/26/2017	Lilia Ramit	NTU	0.36	0.10	0.10					
ASSET	EPA 200.8	VD	11/6/2017	Claire Ignacio	µg/L	2.6	1.0	0.021					
ASSET	EPA 200.8	ZND	11/6/2017	Claire Ignacio	µg/L	ND (10)	10	0.27					

Table 9
ARAR Monitoring Information for Groundwater Samples, 2017
PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
CW-01D	CW-01D-Q417	Jordan Teramae	10/25/2017	10:45	ASSET	EPA 200.8	AGD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.059
					ASSET	EPA 200.7	ALD	11/6/2017	Claire Ignacio	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/31/2017	Lilia Ramit	mg/L	63	5.0	1.2
					ASSET	EPA 200.8	ASD	11/6/2017	Claire Ignacio	µg/L	1.1	0.10	0.025
					ASSET	EPA 200.8	BAD	11/6/2017	Claire Ignacio	µg/L	20	1.0	0.070
					ASSET	EPA 200.7	BD	11/6/2017	Claire Ignacio	µg/L	1,000	100	38
					ASSET	EPA 200.8	BED	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	11/6/2017	Claire Ignacio	µg/L	140,000	500	28
					ASSET	EPA 200.8	CDD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.047
					ASSET	EPA 300.0	CL	10/26/2017	Ryan Bailiu	mg/L	2,100	250	4.6
					ASSET	EPA 200.8	COBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2017	Ryan Bailiu	µg/L	0.35	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/29/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 200.7	FETD	11/6/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/26/2017	Ryan Bailiu	mg/L	2.5	0.50	0.032
					ASSET	EPA 245.1	HGD	10/27/2017	Mark Gesmundo	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	11/5/2017	Claire Ignacio	µg/L	11,000	500	38
					ASSET	EPA 200.7	MGD	11/6/2017	Claire Ignacio	µg/L	15,000	100	4.4
					ASSET	EPA 200.8	MND	11/6/2017	Claire Ignacio	µg/L	0.58	0.50	0.056
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	19	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,400,000	25000	1300
					BC	SM 4500-NH3 G	NH3N	10/27/2017	Quennie Manimtim	mg/L	ND (1)	1	1
					ASSET	EPA 200.8	NID	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NH3 G	NO3NO2N	10/27/2017	Quennie Manimtim	mg/L	2.7	0.25	0.16
					ASSET	EPA 200.8	PBD	11/6/2017	Claire Ignacio	µg/L	ND (5)	5.0	0.18
					ASSET	EPA 200.8	SBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.031
					ASSET	EPA 120.1	SC	10/26/2017	Lilia Ramit	µS/cm	7,000	0.10	0.10
					ASSET	EPA 200.8	SED	11/6/2017	Claire Ignacio	µg/L	3.3	0.50	0.028
					ASSET	EPA 300.0	SO4	10/27/2017	Ryan Bailiu	mg/L	470	25	1.1
					ASSET	SM 2540 C	TDS	10/26/2017	Lilia Ramit	mg/L	4,000	50	50
					ASSET	EPA 200.8	TLD	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.15
ASSET	SM 2130 B	TRB	10/26/2017	Lilia Ramit	NTU	0.23	0.10	0.10					
ASSET	EPA 200.8	VD	11/6/2017	Claire Ignacio	µg/L	2.4	1.0	0.021					
ASSET	EPA 200.8	ZND	11/6/2017	Claire Ignacio	µg/L	ND (10)	10	0.27					

Table 9
ARAR Monitoring Information for Groundwater Samples, 2017
PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
CW-02M	CW-02M-Q417	Jordan Teramae	10/24/2017	15:32	ASSET	EPA 200.8	AGD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.059
					ASSET	EPA 200.7	ALD	11/6/2017	Claire Ignacio	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/27/2017	Lilia Ramit	mg/L	58	5.0	1.2
					ASSET	EPA 200.8	ASD	11/6/2017	Claire Ignacio	µg/L	1.8	0.10	0.025
					ASSET	EPA 200.8	BAD	11/6/2017	Claire Ignacio	µg/L	61	1.0	0.070
					ASSET	EPA 200.7	BD	11/6/2017	Claire Ignacio	µg/L	1,100	100	38
					ASSET	EPA 200.8	BED	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	11/6/2017	Claire Ignacio	µg/L	120,000	500	28
					ASSET	EPA 200.8	CDD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.047
					ASSET	EPA 300.0	CL	10/25/2017	Ryan Bailiu	mg/L	2,200	250	4.6
					ASSET	EPA 200.8	COBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2017	Ryan Bailiu	µg/L	1.2	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	1.4	1.0	0.019
					ASSET	EPA 200.8	CUD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/29/2017	Claire Ignacio	µg/L	22	20	1.8
					ASSET	EPA 200.7	FETD	11/6/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/25/2017	Ryan Bailiu	mg/L	3.1	0.50	0.032
					ASSET	EPA 245.1	HGD	10/27/2017	Mark Gesmundo	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	11/5/2017	Claire Ignacio	µg/L	11,000	500	38
					ASSET	EPA 200.7	MGD	11/6/2017	Claire Ignacio	µg/L	8,900	100	4.4
					ASSET	EPA 200.8	MND	11/6/2017	Claire Ignacio	µg/L	1.3	0.50	0.056
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	15	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,500,000	25000	1300
					BC	SM 4500-NH3 G	NH3N	10/27/2017	Mark Gesmundo	mg/L	ND (2)	2	2
					ASSET	EPA 200.8	NID	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NO3 F	NO3NO2N	10/26/2017	Quennie Manimtim	mg/L	2.9	0.25	0.16
					ASSET	EPA 200.8	PBD	11/6/2017	Claire Ignacio	µg/L	ND (5)	5.0	0.18
					ASSET	EPA 200.8	SBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.031
					ASSET	EPA 120.1	SC	10/25/2017	Lilia Ramit	µS/cm	7,300	0.10	0.10
					ASSET	EPA 200.8	SED	11/6/2017	Claire Ignacio	µg/L	3.2	0.50	0.028
					ASSET	EPA 300.0	SO4	10/25/2017	Ryan Bailiu	mg/L	500	25	1.1
					ASSET	SM 2540 C	TDS	10/25/2017	Lilia Ramit	mg/L	4,000	50	50
					ASSET	EPA 200.8	TLD	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.15
					ASSET	SM 2130 B	TRB	10/25/2017	Lilia Ramit	NTU	0.3	0.10	0.10
					ASSET	EPA 200.8	VD	11/6/2017	Claire Ignacio	µg/L	3.6	1.0	0.021
					ASSET	EPA 200.8	ZND	11/6/2017	Claire Ignacio	µg/L	ND (10)	10	0.27

Table 9
ARAR Monitoring Information for Groundwater Samples, 2017
PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
CW-02D	CW-02D-Q417	Jordan Teramae	10/24/2017	14:51	ASSET	EPA 200.8	AGD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.059
					ASSET	EPA 200.7	ALD	11/6/2017	Claire Ignacio	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/27/2017	Lilia Ramit	mg/L	65	5.0	1.2
					ASSET	EPA 200.8	ASD	11/6/2017	Claire Ignacio	µg/L	2.6	0.10	0.025
					ASSET	EPA 200.8	BAD	11/6/2017	Claire Ignacio	µg/L	14	1.0	0.070
					ASSET	EPA 200.7	BD	11/6/2017	Claire Ignacio	µg/L	1,000 J	100	38
					ASSET	EPA 200.8	BED	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	11/6/2017	Claire Ignacio	µg/L	87,000 J	500	28
					ASSET	EPA 200.8	CDD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.047
					ASSET	EPA 300.0	CL	10/25/2017	Ryan Bailiu	mg/L	2,200	250	4.6
					ASSET	EPA 200.8	COBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2017	Ryan Bailiu	µg/L	0.26	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/29/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 200.7	FETD	11/6/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/25/2017	Ryan Bailiu	mg/L	1.8	0.20	0.013
					ASSET	EPA 245.1	HGD	10/27/2017	Mark Gesmundo	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	11/5/2017	Claire Ignacio	µg/L	10,000	500	38
					ASSET	EPA 200.7	MGD	11/6/2017	Claire Ignacio	µg/L	4,800 J	100	4.4
					ASSET	EPA 200.8	MND	11/6/2017	Claire Ignacio	µg/L	1.9	0.50	0.056
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	12	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,400,000	25000	1300
					BC	SM 4500-NH3 G	NH3N	10/27/2017	Mark Gesmundo	mg/L	ND (1)	1	1
					ASSET	EPA 200.8	NID	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NO3 F	NO3NO2N	10/26/2017	Quennie Manimtim	mg/L	2.8	0.25	0.16
					ASSET	EPA 200.8	PBD	11/6/2017	Claire Ignacio	µg/L	ND (5)	5.0	0.18
					ASSET	EPA 200.8	SBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.031
					ASSET	EPA 120.1	SC	10/25/2017	Lilia Ramit	µS/cm	7,300	0.10	0.10
					ASSET	EPA 200.8	SED	11/6/2017	Claire Ignacio	µg/L	3.5	0.50	0.028
					ASSET	EPA 300.0	SO4	10/25/2017	Ryan Bailiu	mg/L	470	25	1.1
					ASSET	SM 2540 C	TDS	10/25/2017	Lilia Ramit	mg/L	4,000	50	50
					ASSET	EPA 200.8	TLD	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.15
ASSET	SM 2130 B	TRB	10/25/2017	Lilia Ramit	NTU	0.25	0.10	0.10					
ASSET	EPA 200.8	VD	11/6/2017	Claire Ignacio	µg/L	4	1.0	0.021					
ASSET	EPA 200.8	ZND	11/6/2017	Claire Ignacio	µg/L	ND (10)	10	0.27					

Table 9
ARAR Monitoring Information for Groundwater Samples, 2017
PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
CW-02D	MW-901-Q417	Jordan Teramae	10/24/2017	15:01	ASSET	EPA 200.8	AGD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.059
					ASSET	EPA 200.7	ALD	11/6/2017	Claire Ignacio	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/27/2017	Lilia Ramit	mg/L	65	5.0	1.2
					ASSET	EPA 200.8	ASD	11/6/2017	Claire Ignacio	µg/L	2.5	0.10	0.025
					ASSET	EPA 200.8	BAD	11/6/2017	Claire Ignacio	µg/L	15	1.0	0.070
					ASSET	EPA 200.7	BD	11/6/2017	Claire Ignacio	µg/L	1,300 J	100	38
					ASSET	EPA 200.8	BED	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	11/6/2017	Claire Ignacio	µg/L	110,000 J	500	28
					ASSET	EPA 200.8	CDD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.047
					ASSET	EPA 300.0	CL	10/25/2017	Ryan Bailiu	mg/L	2,100	250	4.6
					ASSET	EPA 200.8	COBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2017	Ryan Bailiu	µg/L	0.23	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/29/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 200.7	FETD	11/6/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/25/2017	Ryan Bailiu	mg/L	1.8	0.20	0.013
					ASSET	EPA 245.1	HGD	10/27/2017	Mark Gesmundo	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	11/5/2017	Claire Ignacio	µg/L	11,000	500	38
					ASSET	EPA 200.7	MGD	11/6/2017	Claire Ignacio	µg/L	6,100 J	100	4.4
					ASSET	EPA 200.8	MND	11/6/2017	Claire Ignacio	µg/L	1.9	0.50	0.056
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	12	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,500,000	25000	1300
					BC	SM 4500-NH3 G	NH3N	10/27/2017	Mark Gesmundo	mg/L	ND (1)	1	1
					ASSET	EPA 200.8	NID	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NO3 F	NO3NO2N	10/26/2017	Quennie Manimtim	mg/L	2.9	0.25	0.16
					ASSET	EPA 200.8	PBD	11/6/2017	Claire Ignacio	µg/L	ND (5)	5.0	0.18
					ASSET	EPA 200.8	SBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.031
					ASSET	EPA 120.1	SC	10/25/2017	Lilia Ramit	µS/cm	7,300	0.10	0.10
					ASSET	EPA 200.8	SED	11/6/2017	Claire Ignacio	µg/L	3.5	0.50	0.028
					ASSET	EPA 300.0	SO4	10/25/2017	Ryan Bailiu	mg/L	480	25	1.1
					ASSET	SM 2540 C	TDS	10/25/2017	Lilia Ramit	mg/L	4,000	50	50
					ASSET	EPA 200.8	TLD	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.15
					ASSET	SM 2130 B	TRB	10/25/2017	Lilia Ramit	NTU	0.3	0.10	0.10
ASSET	EPA 200.8	VD	11/6/2017	Claire Ignacio	µg/L	4.1	1.0	0.021					
ASSET	EPA 200.8	ZND	11/6/2017	Claire Ignacio	µg/L	ND (10)	10	0.27					

Table 9
ARAR Monitoring Information for Groundwater Samples, 2017
PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
CW-03M	CW-03M-Q417	Jordan Teramae	10/24/2017	12:38	ASSET	EPA 200.8	AGD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.059
					ASSET	EPA 200.7	ALD	11/6/2017	Claire Ignacio	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/27/2017	Lilia Ramit	mg/L	52	5.0	1.2
					ASSET	EPA 200.8	ASD	11/6/2017	Claire Ignacio	µg/L	1.2	0.10	0.025
					ASSET	EPA 200.8	BAD	11/6/2017	Claire Ignacio	µg/L	40	1.0	0.070
					ASSET	EPA 200.7	BD	11/6/2017	Claire Ignacio	µg/L	1,200	100	38
					ASSET	EPA 200.8	BED	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	11/6/2017	Claire Ignacio	µg/L	170,000	500	28
					ASSET	EPA 200.8	CDD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.047
					ASSET	EPA 300.0	CL	10/25/2017	Ryan Bailiu	mg/L	2,400	250	4.6
					ASSET	EPA 200.8	COBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2017	Ryan Bailiu	µg/L	4.9	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	4.6	1.0	0.019
					ASSET	EPA 200.8	CUD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/29/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 200.7	FETD	11/6/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/25/2017	Ryan Bailiu	mg/L	3.5	0.50	0.032
					ASSET	EPA 245.1	HGD	10/27/2017	Mark Gesmundo	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	11/5/2017	Claire Ignacio	µg/L	12,000	500	38
					ASSET	EPA 200.7	MGD	11/6/2017	Claire Ignacio	µg/L	13,000	100	4.4
					ASSET	EPA 200.8	MND	11/6/2017	Claire Ignacio	µg/L	1.1	0.50	0.056
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	26	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,600,000	25000	1300
					BC	SM 4500-NH3 G	NH3N	10/27/2017	Mark Gesmundo	mg/L	ND (1)	1	1
					ASSET	EPA 200.8	NID	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NO3 F	NO3NO2N	10/26/2017	Quennie Manimtim	mg/L	2.4	0.25	0.16
					ASSET	EPA 200.8	PBD	11/6/2017	Claire Ignacio	µg/L	ND (5)	5.0	0.18
					ASSET	EPA 200.8	SBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.031
					ASSET	EPA 120.1	SC	10/25/2017	Lilia Ramit	µS/cm	8,000	0.10	0.10
					ASSET	EPA 200.8	SED	11/6/2017	Claire Ignacio	µg/L	2	0.50	0.028
					ASSET	EPA 300.0	SO4	10/25/2017	Ryan Bailiu	mg/L	500	25	1.1
					ASSET	SM 2540 C	TDS	10/25/2017	Lilia Ramit	mg/L	4,500	50	50
					ASSET	EPA 200.8	TLD	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.15
					ASSET	SM 2130 B	TRB	10/25/2017	Lilia Ramit	NTU	0.21	0.10	0.10
ASSET	EPA 200.8	VD	11/6/2017	Claire Ignacio	µg/L	2.8	1.0	0.021					
ASSET	EPA 200.8	ZND	11/6/2017	Claire Ignacio	µg/L	ND (10)	10	0.27					

Table 9
ARAR Monitoring Information for Groundwater Samples, 2017
PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
CW-03D	CW-03D-Q417	Jordan Teramae	10/24/2017	13:40	ASSET	EPA 200.8	AGD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.059
					ASSET	EPA 200.7	ALD	11/6/2017	Claire Ignacio	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/27/2017	Lilia Ramit	mg/L	63	5.0	1.2
					ASSET	EPA 200.8	ASD	11/6/2017	Claire Ignacio	µg/L	1.4	0.10	0.025
					ASSET	EPA 200.8	BAD	11/6/2017	Claire Ignacio	µg/L	15	1.0	0.070
					ASSET	EPA 200.7	BD	11/6/2017	Claire Ignacio	µg/L	1,000	100	38
					ASSET	EPA 200.8	BED	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	11/6/2017	Claire Ignacio	µg/L	70,000	500	28
					ASSET	EPA 200.8	CDD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.047
					ASSET	EPA 300.0	CL	10/25/2017	Ryan Bailiu	mg/L	2,100	250	4.6
					ASSET	EPA 200.8	COBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2017	Ryan Bailiu	µg/L	0.26	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/29/2017	Claire Ignacio	µg/L	23	20	1.8
					ASSET	EPA 200.7	FETD	11/6/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/25/2017	Ryan Bailiu	mg/L	2.7	0.50	0.032
					ASSET	EPA 245.1	HGD	10/27/2017	Mark Gesmundo	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	11/5/2017	Claire Ignacio	µg/L	10,000	500	38
					ASSET	EPA 200.7	MGD	11/6/2017	Claire Ignacio	µg/L	4,700	100	4.4
					ASSET	EPA 200.8	MND	11/6/2017	Claire Ignacio	µg/L	2.1	0.50	0.056
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	15	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,600,000	25000	1300
					BC	SM 4500-NH3 G	NH3N	10/27/2017	Mark Gesmundo	mg/L	ND (1)	1	1
					ASSET	EPA 200.8	NID	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NO3 F	NO3NO2N	10/26/2017	Quennie Manimtim	mg/L	2.8	0.25	0.16
					ASSET	EPA 200.8	PBD	11/6/2017	Claire Ignacio	µg/L	ND (5)	5.0	0.18
					ASSET	EPA 200.8	SBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.031
					ASSET	EPA 120.1	SC	10/25/2017	Lilia Ramit	µS/cm	7,400	0.10	0.10
					ASSET	EPA 200.8	SED	11/6/2017	Claire Ignacio	µg/L	3.3	0.50	0.028
					ASSET	EPA 300.0	SO4	10/25/2017	Ryan Bailiu	mg/L	480	25	1.1
					ASSET	SM 2540 C	TDS	10/25/2017	Lilia Ramit	mg/L	4,000	50	50
					ASSET	EPA 200.8	TLD	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.15
ASSET	SM 2130 B	TRB	10/25/2017	Lilia Ramit	NTU	0.21	0.10	0.10					
ASSET	EPA 200.8	VD	11/6/2017	Claire Ignacio	µg/L	2.6	1.0	0.021					
ASSET	EPA 200.8	ZND	11/6/2017	Claire Ignacio	µg/L	ND (10)	10	0.27					

Table 9
ARAR Monitoring Information for Groundwater Samples, 2017
PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
CW-04M	CW-04M-Q417	Jordan Teramae	10/24/2017	10:01	ASSET	EPA 200.8	AGD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.059
					ASSET	EPA 200.7	ALD	11/6/2017	Claire Ignacio	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/27/2017	Lilia Ramit	mg/L	56	5.0	1.2
					ASSET	EPA 200.8	ASD	11/6/2017	Claire Ignacio	µg/L	2	0.10	0.025
					ASSET	EPA 200.8	BAD	11/6/2017	Claire Ignacio	µg/L	95	1.0	0.070
					ASSET	EPA 200.7	BD	11/6/2017	Claire Ignacio	µg/L	1,000	100	38
					ASSET	EPA 200.8	BED	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	11/6/2017	Claire Ignacio	µg/L	190,000	500	28
					ASSET	EPA 200.8	CDD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.047
					ASSET	EPA 300.0	CL	10/25/2017	Ryan Bailiu	mg/L	2,200	250	4.6
					ASSET	EPA 200.8	COBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2017	Ryan Bailiu	µg/L	1.7	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	1.7	1.0	0.019
					ASSET	EPA 200.8	CUD	11/6/2017	Claire Ignacio	µg/L	ND (1 UJ)	1.0	0.26
					ASSET	SW 6010B	FE	10/29/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 200.7	FETD	11/6/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/25/2017	Ryan Bailiu	mg/L	2.3	0.50	0.032
					ASSET	EPA 245.1	HGD	10/27/2017	Mark Gesmundo	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	11/5/2017	Claire Ignacio	µg/L	13,000	500	38
					ASSET	EPA 200.7	MGD	11/6/2017	Claire Ignacio	µg/L	15,000	100	4.4
					ASSET	EPA 200.8	MND	11/6/2017	Claire Ignacio	µg/L	0.6	0.50	0.056
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	9.6	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,500,000	25000	1300
					BC	SM 4500-NH3 G	NH3N	10/27/2017	Mark Gesmundo	mg/L	ND (1)	1	1
					ASSET	EPA 200.8	NID	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NO3 F	NO3NO2N	10/26/2017	Quennie Manimtim	mg/L	2.8	0.25	0.16
					ASSET	EPA 200.8	PBD	11/6/2017	Claire Ignacio	µg/L	ND (5)	5.0	0.18
					ASSET	EPA 200.8	SBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.031
					ASSET	EPA 120.1	SC	10/25/2017	Lilia Ramit	µS/cm	7,200	0.10	0.10
					ASSET	EPA 200.8	SED	11/6/2017	Claire Ignacio	µg/L	2.9	0.50	0.028
					ASSET	EPA 300.0	SO4	10/25/2017	Ryan Bailiu	mg/L	480	25	1.1
					ASSET	SM 2540 C	TDS	10/25/2017	Lilia Ramit	mg/L	4,000	50	50
					ASSET	EPA 200.8	TLD	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.15
					ASSET	SM 2130 B	TRB	10/25/2017	Lilia Ramit	NTU	0.28	0.10	0.10
					ASSET	EPA 200.8	VD	11/6/2017	Claire Ignacio	µg/L	3.4	1.0	0.021
					ASSET	EPA 200.8	ZND	11/6/2017	Claire Ignacio	µg/L	ND (10)	10	0.27

Table 9
ARAR Monitoring Information for Groundwater Samples, 2017
PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
CW-04D	CW-04D-Q417	Jordan Teramae	10/24/2017	10:53	ASSET	EPA 200.8	AGD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.059
					ASSET	EPA 200.7	ALD	11/6/2017	Claire Ignacio	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/27/2017	Lilia Ramit	mg/L	61	5.0	1.2
					ASSET	EPA 200.8	ASD	11/6/2017	Claire Ignacio	µg/L	2.7	0.10	0.025
					ASSET	EPA 200.8	BAD	11/6/2017	Claire Ignacio	µg/L	17	1.0	0.070
					ASSET	EPA 200.7	BD	11/6/2017	Claire Ignacio	µg/L	1,000	100	38
					ASSET	EPA 200.8	BED	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	11/6/2017	Claire Ignacio	µg/L	120,000	500	28
					ASSET	EPA 200.8	CDD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.047
					ASSET	EPA 300.0	CL	10/25/2017	Ryan Bailiu	mg/L	2,100	250	4.6
					ASSET	EPA 200.8	COBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2017	Ryan Bailiu	µg/L	0.39	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/29/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 200.7	FETD	11/6/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/25/2017	Ryan Bailiu	mg/L	3.2	0.50	0.032
					ASSET	EPA 245.1	HGD	10/27/2017	Mark Gesmundo	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	11/5/2017	Claire Ignacio	µg/L	11,000	500	38
					ASSET	EPA 200.7	MGD	11/6/2017	Claire Ignacio	µg/L	7,800	100	4.4
					ASSET	EPA 200.8	MND	11/6/2017	Claire Ignacio	µg/L	1.5	0.50	0.056
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	18	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,400,000	25000	1300
					BC	SM 4500-NH3 G	NH3N	10/27/2017	Mark Gesmundo	mg/L	ND (1)	1	1
					ASSET	EPA 200.8	NID	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NO3 F	NO3NO2N	10/26/2017	Quennie Manimtim	mg/L	2.9	0.25	0.16
					ASSET	EPA 200.8	PBD	11/6/2017	Claire Ignacio	µg/L	ND (5)	5.0	0.18
					ASSET	EPA 200.8	SBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.031
					ASSET	EPA 120.1	SC	10/25/2017	Lilia Ramit	µS/cm	7,300	0.10	0.10
					ASSET	EPA 200.8	SED	11/6/2017	Claire Ignacio	µg/L	3.5	0.50	0.028
					ASSET	EPA 300.0	SO4	10/25/2017	Ryan Bailiu	mg/L	480	25	1.1
					ASSET	SM 2540 C	TDS	10/25/2017	Lilia Ramit	mg/L	3,900	50	50
					ASSET	EPA 200.8	TLD	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.15
ASSET	SM 2130 B	TRB	10/25/2017	Lilia Ramit	NTU	0.2	0.10	0.10					
ASSET	EPA 200.8	VD	11/6/2017	Claire Ignacio	µg/L	3.2	1.0	0.021					
ASSET	EPA 200.8	ZND	11/6/2017	Claire Ignacio	µg/L	ND (10)	10	0.27					

Table 9
ARAR Monitoring Information for Groundwater Samples, 2017
PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
OW-01S	OW-01S-Q417	Jordan Teramae	10/23/2017	14:10	ASSET	EPA 300.0	CL	10/24/2017	Ryan Balilu	mg/L	1,800	250	4.6
					ASSET	EPA 218.6	CR6	10/24/2017	Ryan Balilu	µg/L	6.8	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	7.2	1.0	0.019
					ASSET	EPA 300.0	FL	10/24/2017	Ryan Balilu	mg/L	1.5	0.50	0.032
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	6.4	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	830,000	25000	1300
					ASSET	SM 4500-NO3 F	NO3NO2N	10/25/2017	Quennie Manimtim	mg/L	2.8	0.25	0.16
					ASSET	EPA 120.1	SC	10/24/2017	Lilia Ramit	µS/cm	5,500	0.10	0.10
					ASSET	EPA 300.0	SO4	10/24/2017	Ryan Balilu	mg/L	370	25	1.1
					ASSET	SM 2540 C	TDS	10/24/2017	Lilia Ramit	mg/L	3,800	50	50
ASSET	SM 2130 B	TRB	10/24/2017	Lilia Ramit	NTU	0.33	0.10	0.10					
OW-01M	OW-01M-Q417	Jordan Teramae	10/23/2017	15:11	ASSET	EPA 300.0	CL	10/24/2017	Ryan Balilu	mg/L	2,100	250	4.6
					ASSET	EPA 218.6	CR6	10/24/2017	Ryan Balilu	µg/L	0.87	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	1	1.0	0.019
					ASSET	EPA 300.0	FL	10/24/2017	Ryan Balilu	mg/L	2.3	0.50	0.032
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	19	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,400,000	25000	1300
					ASSET	SM 4500-NO3 F	NO3NO2N	10/25/2017	Quennie Manimtim	mg/L	3	0.25	0.16
					ASSET	EPA 120.1	SC	10/24/2017	Lilia Ramit	µS/cm	6,900	0.10	0.10
					ASSET	EPA 300.0	SO4	10/24/2017	Ryan Balilu	mg/L	470	25	1.1
					ASSET	SM 2540 C	TDS	10/24/2017	Lilia Ramit	mg/L	4,000	50	50
ASSET	SM 2130 B	TRB	10/24/2017	Lilia Ramit	NTU	0.3	0.10	0.10					
OW-01D	OW-01D-Q417	Jordan Teramae	10/25/2017	13:12	ASSET	EPA 300.0	CL	10/26/2017	Ryan Balilu	mg/L	2,100	250	4.6
					ASSET	EPA 218.6	CR6	10/26/2017	Ryan Balilu	µg/L	0.27	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 300.0	FL	10/26/2017	Ryan Balilu	mg/L	2.2	0.50	0.032
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	18	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,400,000	25000	1300
					ASSET	SM 4500-NO3 F	NO3NO2N	10/27/2017	Quennie Manimtim	mg/L	2.7	0.25	0.16
					ASSET	EPA 120.1	SC	10/26/2017	Lilia Ramit	µS/cm	6,900	0.10	0.10
					ASSET	EPA 300.0	SO4	10/27/2017	Ryan Balilu	mg/L	470	25	1.1
					ASSET	SM 2540 C	TDS	10/26/2017	Lilia Ramit	mg/L	4,000	50	50
ASSET	SM 2130 B	TRB	10/26/2017	Lilia Ramit	NTU	0.4	0.10	0.10					

Table 9
ARAR Monitoring Information for Groundwater Samples, 2017
PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
OW-02S	OW-02S-Q417	Jacob Mathwig	10/23/2017	15:42	ASSET	EPA 300.0	CL	10/24/2017	Ryan Balilu	mg/L	870	100	1.8
					ASSET	EPA 218.6	CR6	10/24/2017	Ryan Balilu	µg/L	17	1.0	0.17
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	18	1.0	0.019
					ASSET	EPA 300.0	FL	10/24/2017	Ryan Balilu	mg/L	3.4	0.20	0.013
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	25	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	500,000	25000	1300
					ASSET	SM 4500-NO3 F	NO3NO2N	10/25/2017	Quennie Manimtim	mg/L	3	0.25	0.16
					ASSET	EPA 120.1	SC	10/24/2017	Lilia Ramit	µS/cm	2,900	0.10	0.10
					ASSET	EPA 300.0	SO4	10/24/2017	Ryan Balilu	mg/L	130	5.0	0.23
					ASSET	SM 2540 C	TDS	10/24/2017	Lilia Ramit	mg/L	1,700	20	20
ASSET	SM 2130 B	TRB	10/24/2017	Lilia Ramit	NTU	1.8	0.10	0.10					
OW-02M	OW-02M-Q417	Jordan Teramae	10/25/2017	09:46	ASSET	EPA 300.0	CL	10/26/2017	Ryan Balilu	mg/L	2,100	250	4.6
					ASSET	EPA 218.6	CR6	10/26/2017	Ryan Balilu	µg/L	0.58	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 300.0	FL	10/26/2017	Ryan Balilu	mg/L	2.4	0.50	0.032
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	22	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,400,000	25000	1300
					ASSET	SM 4500-NO3 F	NO3NO2N	10/27/2017	Quennie Manimtim	mg/L	2.9	0.25	0.16
					ASSET	EPA 120.1	SC	10/26/2017	Lilia Ramit	µS/cm	7,000	0.10	0.10
					ASSET	EPA 300.0	SO4	10/27/2017	Ryan Balilu	mg/L	470	25	1.1
					ASSET	SM 2540 C	TDS	10/26/2017	Lilia Ramit	mg/L	4,000	50	50
ASSET	SM 2130 B	TRB	10/26/2017	Lilia Ramit	NTU	0.15	0.10	0.10					
OW-02D	OW-02D-Q417	Jordan Teramae	10/25/2017	08:58	ASSET	EPA 300.0	CL	10/26/2017	Ryan Balilu	mg/L	2,200	250	4.6
					ASSET	EPA 218.6	CR6	10/26/2017	Ryan Balilu	µg/L	0.25	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	2.3	1.0	0.019
					ASSET	EPA 300.0	FL	10/26/2017	Ryan Balilu	mg/L	2.4	0.50	0.032
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	19	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,500,000	25000	1300
					ASSET	SM 4500-NO3 F	NO3NO2N	10/27/2017	Quennie Manimtim	mg/L	2.7	0.25	0.16
					ASSET	EPA 120.1	SC	10/26/2017	Lilia Ramit	µS/cm	7,100	0.10	0.10
					ASSET	EPA 300.0	SO4	10/27/2017	Ryan Balilu	mg/L	480	25	1.1
					ASSET	SM 2540 C	TDS	10/26/2017	Lilia Ramit	mg/L	4,100	50	50
ASSET	SM 2130 B	TRB	10/26/2017	Lilia Ramit	NTU	0.32	0.10	0.10					

Table 9
ARAR Monitoring Information for Groundwater Samples, 2017
PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
OW-05S	OW-05S-Q417	Nara Tep	10/23/2017	15:40	ASSET	EPA 300.0	CL	10/24/2017	Ryan Balilu	mg/L	1,500	100	1.8
					ASSET	EPA 218.6	CR6	10/24/2017	Ryan Balilu	µg/L	14	0.40	0.066
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	14	1.0	0.019
					ASSET	EPA 300.0	FL	10/24/2017	Ryan Balilu	mg/L	1.7	0.50	0.032
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	12	0.50	0.039
					ASSET	SM 4500-NO3 F	NO3NO2N	10/25/2017	Quennie Manimtim	mg/L	2.7	0.25	0.16
					ASSET	EPA 120.1	SC	10/24/2017	Lilia Ramit	µS/cm	4,400	0.10	0.10
					ASSET	EPA 300.0	SO4	10/24/2017	Ryan Balilu	mg/L	280	10	0.46
					ASSET	SM 2540 C	TDS	10/24/2017	Lilia Ramit	mg/L	3,000	33	33
OW-05M	OW-05M-Q417	Jordan Teramae	10/25/2017	14:22	ASSET	EPA 200.8	AGD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.059
					ASSET	EPA 200.7	ALD	11/6/2017	Claire Ignacio	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/31/2017	Lilia Ramit	mg/L	68	5.0	1.2
					ASSET	EPA 200.8	ASD	11/6/2017	Claire Ignacio	µg/L	0.81	0.10	0.025
					ASSET	EPA 200.8	BAD	11/6/2017	Claire Ignacio	µg/L	32	1.0	0.070
					ASSET	EPA 200.7	BD	11/6/2017	Claire Ignacio	µg/L	980	100	38
					ASSET	EPA 200.8	BED	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	11/6/2017	Claire Ignacio	µg/L	120,000	500	28
					ASSET	EPA 200.8	CDD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.047
					ASSET	EPA 300.0	CL	10/27/2017	Ryan Balilu	mg/L	2,100	250	4.6
					ASSET	EPA 200.8	COBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2017	Ryan Balilu	µg/L	0.45	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/29/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 200.7	FETD	11/6/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/26/2017	Ryan Balilu	mg/L	2.6	0.50	0.032
					ASSET	EPA 245.1	HGD	10/27/2017	Mark Gesmundo	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	11/5/2017	Claire Ignacio	µg/L	12,000	500	38
					ASSET	EPA 200.7	MGD	11/6/2017	Claire Ignacio	µg/L	21,000	100	4.4
					ASSET	EPA 200.8	MND	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.056
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	19	0.50	0.039
					ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,400,000	25000	1300
					BC	SM 4500-NH3 G	NH3N	10/27/2017	Quennie Manimtim	mg/L	1.2	1	1
					ASSET	EPA 200.8	NID	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.040
					ASSET	SM 4500-NH3 G	NO3NO2N	10/27/2017	Quennie Manimtim	mg/L	2.7	0.25	0.16
					ASSET	EPA 200.8	PBD	11/6/2017	Claire Ignacio	µg/L	ND (5)	5.0	0.18

Table 9
ARAR Monitoring Information for Groundwater Samples, 2017
PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
OW-05M	OW-05M-Q417	Jordan Teramae	10/25/2017	14:22	ASSET	EPA 200.8	SBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.031
					ASSET	EPA 120.1	SC	10/26/2017	Lilia Ramit	µS/cm	7,000	0.10	0.10
					ASSET	EPA 200.8	SED	11/6/2017	Claire Ignacio	µg/L	3.3	0.50	0.028
					ASSET	EPA 300.0	SO4	10/27/2017	Ryan Balilu	mg/L	470	25	1.1
					ASSET	SM 2540 C	TDS	10/26/2017	Lilia Ramit	mg/L	3,800	50	50
					ASSET	EPA 200.8	TLD	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.15
					ASSET	SM 2130 B	TRB	10/26/2017	Lilia Ramit	NTU	0.18	0.10	0.10
					ASSET	EPA 200.8	VD	11/6/2017	Claire Ignacio	µg/L	1.6	1.0	0.021
OW-05D	OW-05D-Q417	Jordan Teramae	10/25/2017	15:21	ASSET	EPA 200.8	AGD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.059
					ASSET	EPA 200.7	ALD	11/6/2017	Claire Ignacio	µg/L	ND (50)	50	2.7
					ASSET	SM 2320 B	ALKT	10/31/2017	Lilia Ramit	mg/L	72	5.0	1.2
					ASSET	EPA 200.8	ASD	11/6/2017	Claire Ignacio	µg/L	4.1	0.10	0.025
					ASSET	EPA 200.8	BAD	11/6/2017	Claire Ignacio	µg/L	21	1.0	0.070
					ASSET	EPA 200.7	BD	11/6/2017	Claire Ignacio	µg/L	980	100	38
					ASSET	EPA 200.8	BED	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.22
					ASSET	EPA 200.7	CAD	11/6/2017	Claire Ignacio	µg/L	120,000	500	28
					ASSET	EPA 200.8	CDD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.047
					ASSET	EPA 300.0	CL	10/26/2017	Ryan Balilu	mg/L	2,000	250	4.6
					ASSET	EPA 200.8	COBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.026
					ASSET	EPA 218.6	CR6	10/26/2017	Ryan Balilu	µg/L	0.29	0.20	0.033
					ASSET	EPA 200.8	CRTD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.019
					ASSET	EPA 200.8	CUD	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.26
					ASSET	SW 6010B	FE	10/29/2017	Claire Ignacio	µg/L	29	20	1.8
					ASSET	EPA 200.7	FETD	11/6/2017	Claire Ignacio	µg/L	ND (20)	20	1.8
					ASSET	EPA 300.0	FL	10/26/2017	Ryan Balilu	mg/L	2.5	0.50	0.032
					ASSET	EPA 245.1	HGD	10/27/2017	Mark Gesmundo	µg/L	ND (0.2)	0.20	0.087
					ASSET	EPA 200.7	KD	11/5/2017	Claire Ignacio	µg/L	13,000	500	38
					ASSET	EPA 200.7	MGD	11/6/2017	Claire Ignacio	µg/L	23,000	100	4.4
					ASSET	EPA 200.8	MND	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.056
					ASSET	EPA 200.8	MOD	11/6/2017	Claire Ignacio	µg/L	21	0.50	0.039
ASSET	EPA 200.7	NAD	11/5/2017	Claire Ignacio	µg/L	1,400,000	25000	1300					
BC	SM 4500-NH3 G	NH3N	10/27/2017	Quennie Manimtim	mg/L	ND (1)	1	1					
ASSET	EPA 200.8	NID	11/6/2017	Claire Ignacio	µg/L	ND (1)	1.0	0.040					
ASSET	SM 4500-NH3 G	NO3NO2N	10/27/2017	Quennie Manimtim	mg/L	2.6	0.25	0.16					
ASSET	EPA 200.8	PBD	11/6/2017	Claire Ignacio	µg/L	ND (5)	5.0	0.18					
ASSET	EPA 200.8	SBD	11/6/2017	Claire Ignacio	µg/L	ND (0.5)	0.50	0.031					

Table 9
ARAR Monitoring Information for Groundwater Samples, 2017
PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
OW-05D	OW-05D-Q417	Jordan Teramae	10/25/2017	15:21	ASSET	EPA 120.1	SC	10/26/2017	Lilia Ramit	µS/cm	7,000	0.10	0.10
					ASSET	EPA 200.8	SED	11/6/2017	Claire Ignacio	µg/L	3.6	0.50	0.028
					ASSET	EPA 300.0	SO4	10/27/2017	Ryan Balilu	mg/L	460	25	1.1
					ASSET	SM 2540 C	TDS	10/26/2017	Lilia Ramit	mg/L	3,800	50	50
					ASSET	EPA 200.8	TLD	11/6/2017	Claire Ignacio	µg/L	ND (2.5)	2.5	0.15
					ASSET	SM 2130 B	TRB	10/26/2017	Lilia Ramit	NTU	0.16	0.10	0.10
					ASSET	EPA 200.8	VD	11/6/2017	Claire Ignacio	µg/L	3.4	1.0	0.021
					ASSET	EPA 200.8	ZND	11/6/2017	Claire Ignacio	µg/L	ND (10)	10	0.27

Notes:
µg/L = micrograms per liter
µS/cm = microSiemens per centimeter
ARAR = applicable or relevant and appropriate requirement
J = concentration estimated by laboratory or data validation
MDL = method detection limit corrected for sample dilution

mg/L = milligrams per liter
ND = parameter not detected at the listed reporting limit
NTU = Nephelometric Turbidity Unit
RL = reporting limit corrected for sample dilution
UJ = reporting limit estimated by laboratory or data validation

ASSET = Asset Laboratories
BC = BC Laboratories, Inc.

ALKT	alkalinity, total as CaCO ₃	CR6	hexavalent chromium	NH3N	ammonia (as nitrogen)
ALD	aluminum, dissolved	CUD	copper, dissolved	NO3NO2N	nitrate/nitrite (as nitrogen)
AGD	silver, dissolved	FE	iron	PBD	lead, dissolved
ASD	arsenic, dissolved	FETD	iron, dissolved	SBD	antimony, dissolved
BAD	barium, dissolved	FL	fluoride	SC	specific conductance
BD	boron, dissolved	HGD	mercury, dissolved	SED	selenium, dissolved
BED	beryllium, dissolved	KD	potassium, dissolved	SO4	sulfate
CAD	calcium, dissolved	MGD	magnesium, dissolved	TLD	thallium, dissolved
CDD	cadmium, dissolved	MND	manganese, dissolved	TDS	total dissolved solids
CL	chloride	MOD	molybdenum, dissolved	TRB	turbidity
COBD	cobalt, dissolved	NAD	sodium, dissolved	VD	vanadium, dissolved
CRTD	chromium, dissolved	NID	nickel, dissolved	ZND	zinc, dissolved

Table 10
Manual Water Level Measurements and Elevations, 2017
PG&E Topock Compliance Monitoring Program

Location ID	Well Depth (feet btoc)	Measuring Point Elevation (feet amsl)	Monitoring Date & Time		Water Level Measurement (feet btoc)	Salinity (%)	Groundwater/Water Elevation Adjusted for Salinity and Temperature (feet amsl)
CW-01M	190.0	566.07	2/6/2017	11:33	110.52	0.50	455.53
			4/26/2017	8:34	108.41	0.50	457.64
			9/8/2017	8:49	109.31	0.50	456.74
			12/4/2017	11:35	109.94	0.52	456.14
CW-01D	300.2	566.46	2/6/2017	11:33	110.50	0.49	455.87
			4/26/2017	8:38	109.10	0.49	457.27
			9/8/2017	8:48	109.27	0.49	457.10
			12/4/2017	11:33	109.92	0.51	456.54
CW-02M	208.3	549.45	2/6/2017	11:28	94.00	0.49	455.37
			4/26/2017	8:17	92.30	0.49	457.07
			9/8/2017	8:44	92.45	0.49	456.92
			12/4/2017	11:26	93.51	0.54	455.93
CW-02D	355.0	549.43	2/6/2017	11:27	93.57	0.48	455.66
			4/26/2017	8:19	91.81	0.48	457.42
			9/8/2017	8:45	92.31	0.48	456.92
			12/4/2017	11:28	93.04	0.53	456.37
CW-03M	222.0	534.10	2/6/2017	11:24	78.85	0.56	455.21
			4/26/2017	8:27	77.14	0.56	456.92
			9/8/2017	8:42	77.61	0.56	456.45
			12/4/2017	11:23	78.34	0.60	455.79
CW-03D	340.0	534.14	2/6/2017	11:24	78.23	0.49	455.71
			4/26/2017	8:24	76.94	0.49	457.00
			9/8/2017	8:40	76.93	0.49	457.01
			12/4/2017	11:20	77.72	0.54	456.35
CW-04M	169.8	518.55	2/6/2017	11:54	62.85	0.47	455.63
			4/26/2017	9:15	61.32	0.47	457.16
			9/8/2017	9:20	61.64	0.47	456.84
			12/4/2017	12:10	62.22	0.54	456.33
CW-04D	303.0	518.55	2/6/2017	11:54	62.74	0.49	455.64
			4/26/2017	9:13	61.23	0.49	457.15
			9/8/2017	9:16	61.42	0.49	456.96
			12/4/2017	12:12	62.05	0.55	456.48
OW-01S	113.5	550.21	2/6/2017	11:36	94.93	0.48	455.26
			4/26/2017	9:04	93.30	0.48	456.89
			9/8/2017	8:56	93.67	0.44	456.51
			12/4/2017	11:38	94.36	0.48	455.84
OW-01M	185.8	550.36	2/6/2017	11:36	94.48	0.48	455.83
			4/26/2017	9:07	93.12	0.48	457.19
			9/8/2017	8:52	93.38	0.48	456.93
			12/4/2017	11:42	94.12	0.51	456.27
OW-01D	277.3	550.36	2/6/2017	11:38	94.05	0.48	456.28
			4/26/2017	9:09	92.87	0.48	457.46
			9/8/2017	8:54	92.78	0.48	457.55
			12/4/2017	11:40	93.87	0.51	456.56
OW-02S	103.6	548.88	2/6/2017	11:43	93.62	0.21	455.23
			4/26/2017	9:00	91.92	0.21	456.92
			9/8/2017	9:01	92.31	0.21	456.53
			12/4/2017	11:50	93.02	0.20	455.83
OW-02M	210.3	548.52	2/6/2017	11:41	92.38	0.50	456.12
			4/26/2017	8:58	91.42	0.50	457.08
			9/8/2017	9:03	91.41	0.50	457.09
			12/4/2017	11:52	92.28	0.52	456.26

Table 10
Manual Water Level Measurements and Elevations, 2017
PG&E Topock Compliance Monitoring Program

Location ID	Well Depth (feet btoc)	Measuring Point Elevation (feet amsl)	Monitoring Date & Time		Water Level Measurement (feet btoc)	Salinity (%)	Groundwater/Water Elevation Adjusted for Salinity and Temperature (feet amsl)
OW-02D	340.0	549.01	2/6/2017	11:41	92.42	0.48	456.49
			4/26/2017	8:57	91.50	0.48	457.41
			9/8/2017	8:59	90.84	0.48	458.07
			12/4/2017	11:48	92.29	0.53	456.76
OW-05S	110.3	551.83	2/6/2017	11:47	96.34	0.34	455.46
			4/26/2017	8:42	94.60	0.38	457.21
			9/8/2017	9:07	95.16	0.37	456.65
			12/4/2017	11:56	95.82	0.38	455.99
OW-05M	250.3	551.81	2/6/2017	11:49	95.67	0.50	456.05
			4/26/2017	8:45	93.48	0.51	458.25
			9/8/2017	9:08	94.46	0.50	457.26
			12/4/2017	11:58	94.59	0.52	457.19
OW-05D	350.0	552.41	2/6/2017	11:47	96.28	0.50	455.97
			4/26/2017	8:44	92.48	0.52	459.81
			9/8/2017	9:11	94.89	0.51	457.39
			12/4/2017	12:00	95.26	0.53	457.09

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

Table 11

Vertical Gradients within the OW and CW Clusters, 2017

PG&E Topock Compliance Monitoring Program

Well Pairs	Vertical Gradient ^(a) (foot/foot)
CW-01D to CW-01M	0.0037
CW-02D to CW-02M	0.0034
CW-03D to CW-03M	0.0057
CW-04D to CW-04M	0.0013
OW-01M to OW-01S	0.0056
OW-01D to OW-01M	0.0031
OW-02M to OW-02S	0.0037
OW-02D to OW-02M	0.0041
OW-05M to OW-05S	0.0085
OW-05D to OW-05M	-0.0013

Notes:

^(a)Positive value signifies an upward gradient.

Gradients calculated using December 4, 2017 groundwater elevation data.

CW = compliance well

OW = observation well

FIGURES





VICINITY MAP

LEGEND

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

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

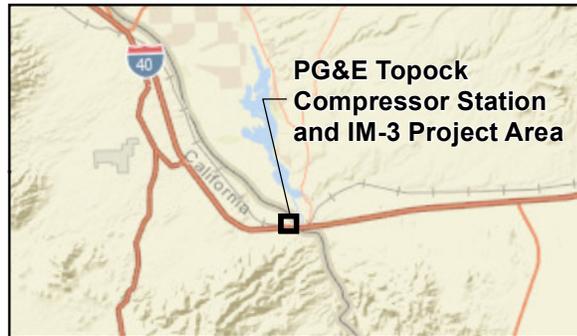
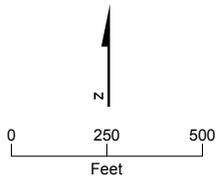
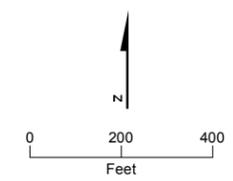
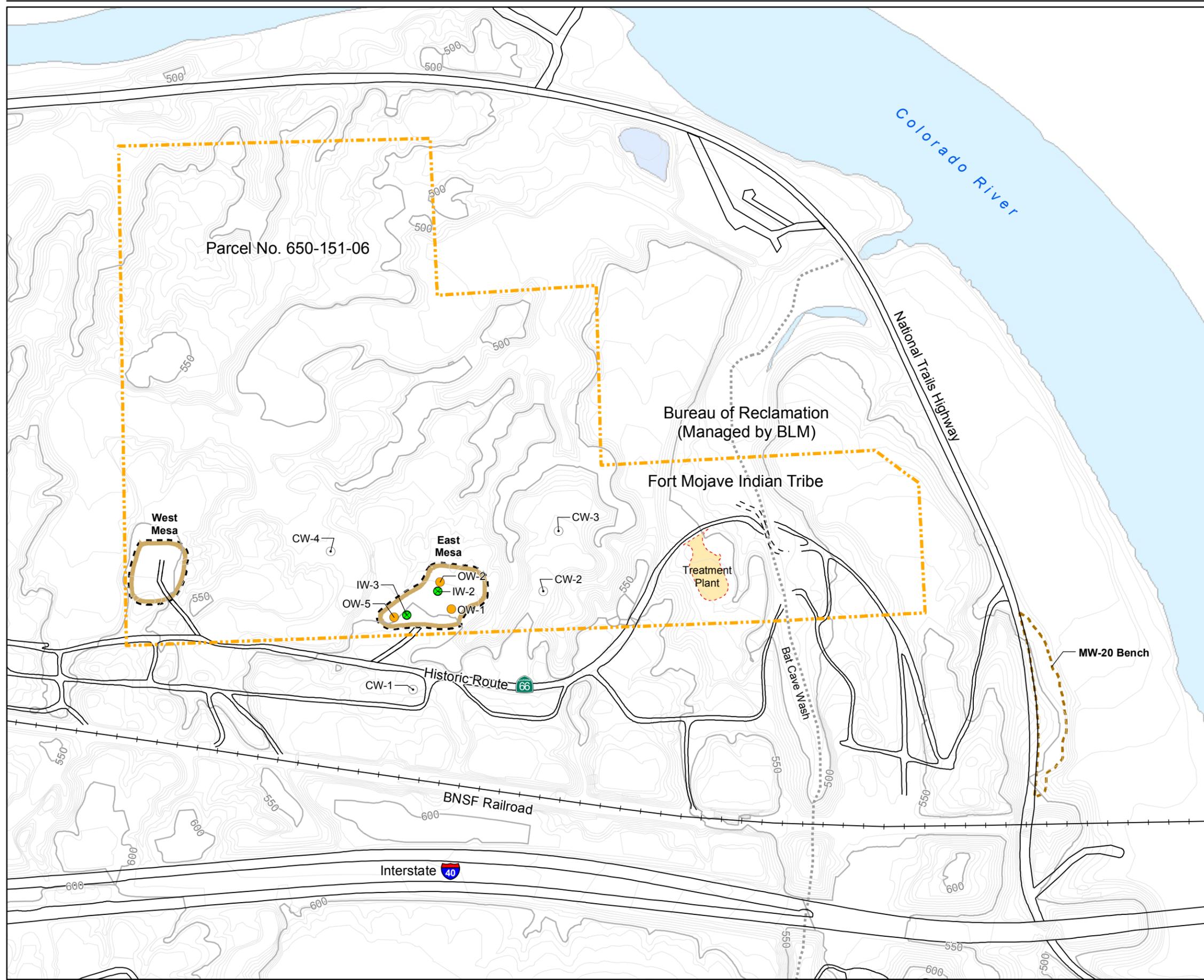


FIGURE 1
SITE LOCATION AND INTERIM MEASURES NO. 3 TREATMENT SYSTEM

- LEGEND**
- IM-3 Injection Well
 - Observation Well Cluster
 - Compliance Monitoring Well Cluster
 - Property Line
 - Contingency Area



**FIGURE 2
MONITORING LOCATIONS FOR CMP AND
INJECTION WELL FIELD**

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

Created by: **CRITIGEN**

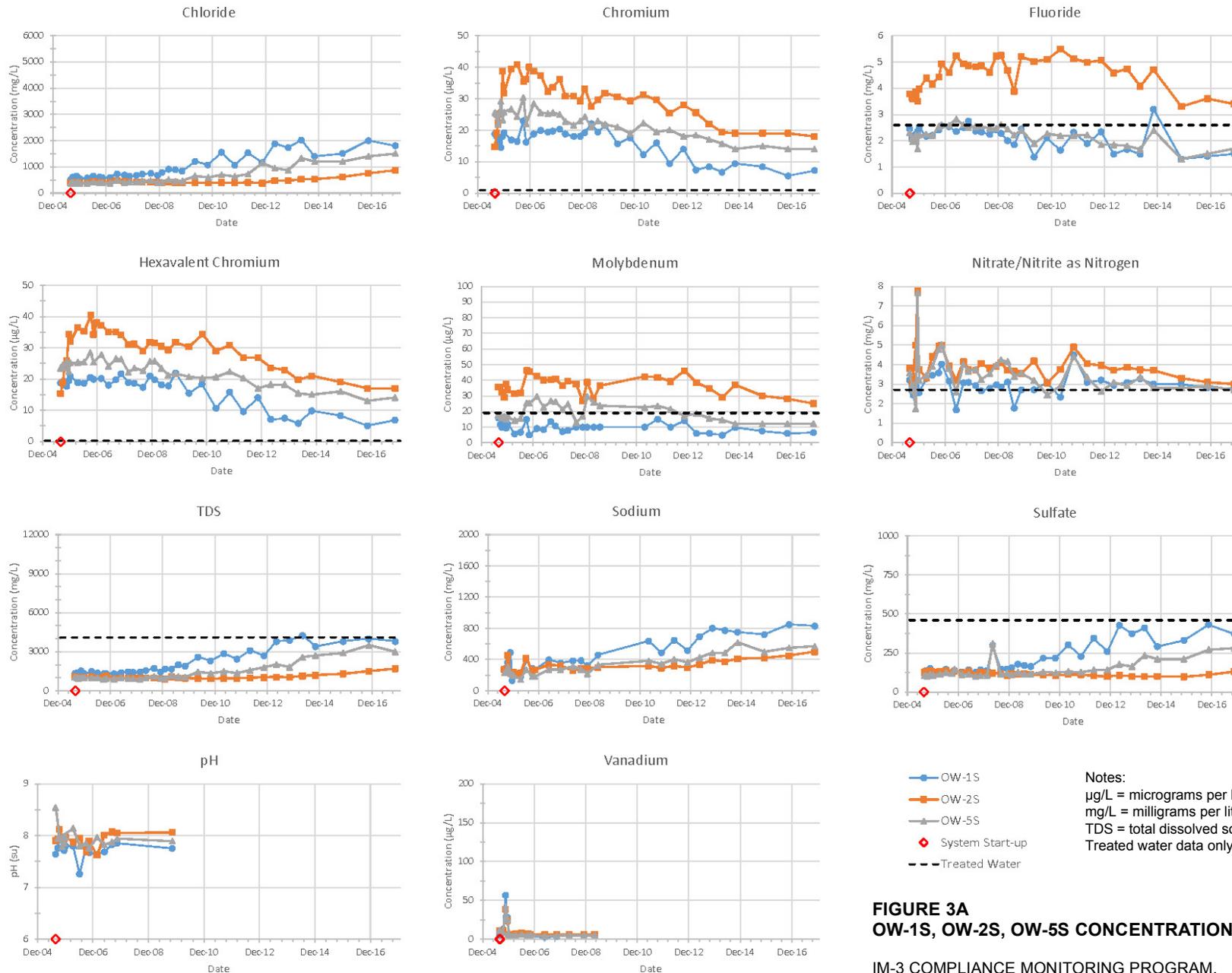


FIGURE 3A
OW-1S, OW-2S, OW-5S CONCENTRATION VERSUS TIME PLOTS

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

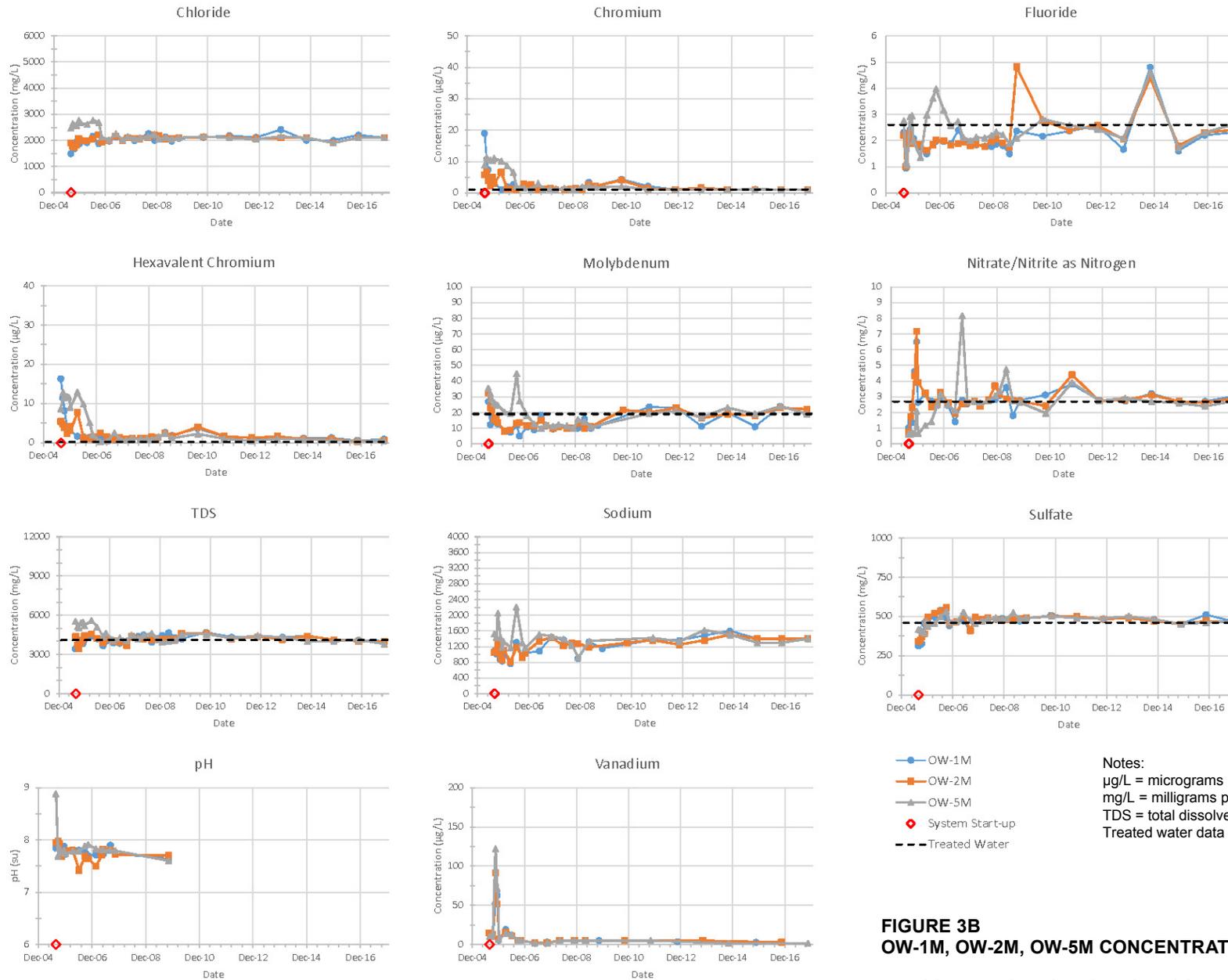
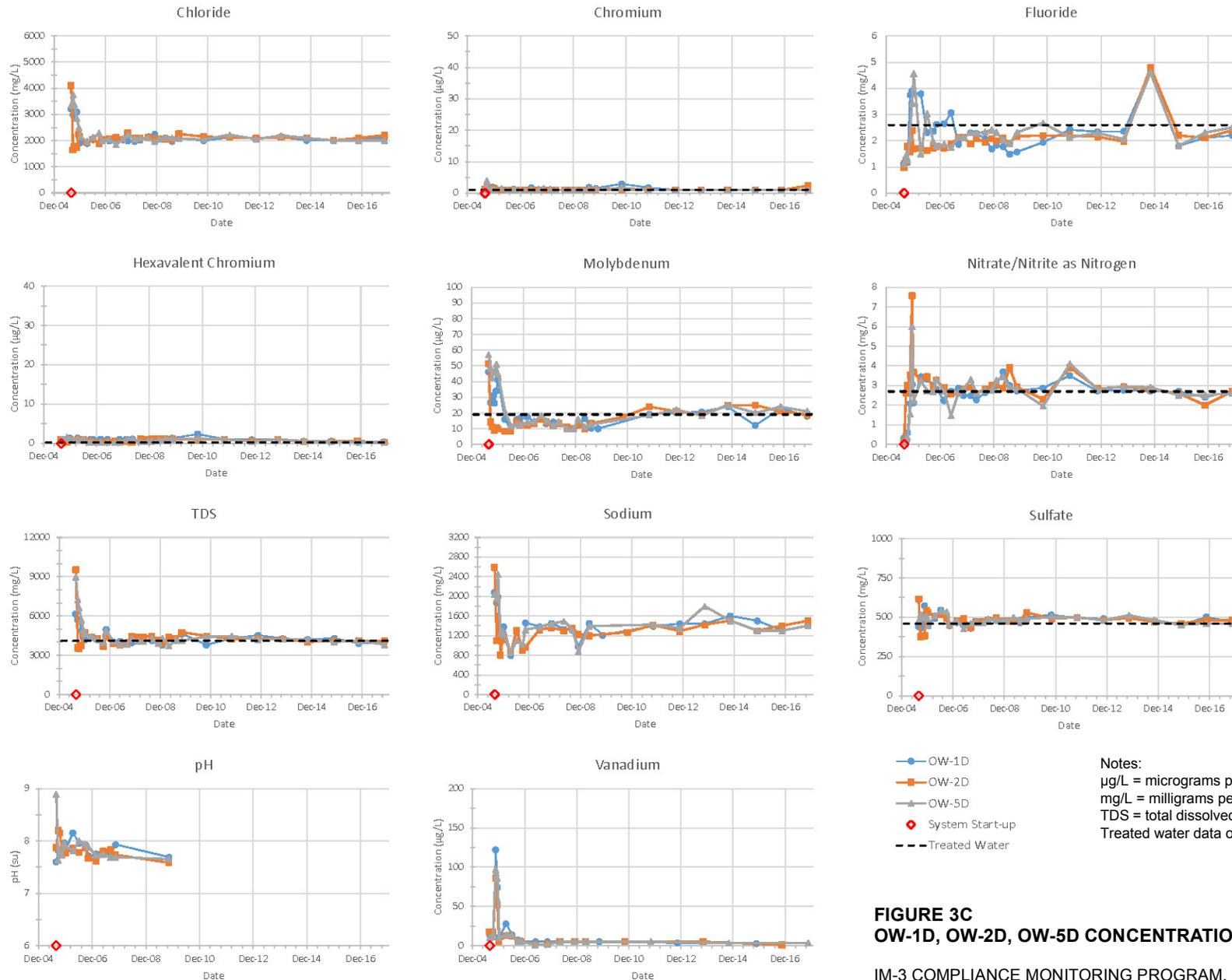


FIGURE 3B
OW-1M, OW-2M, OW-5M CONCENTRATION VERSUS TIME PLOTS

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



—○— OW-1D
 —■— OW-2D
 —▲— OW-5D
 ◆ System Start-up
 - - - Treated Water

Notes:
 µg/L = micrograms per liter
 mg/L = milligrams per liter
 TDS = total dissolved solids
 Treated water data only for select analytes.

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

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

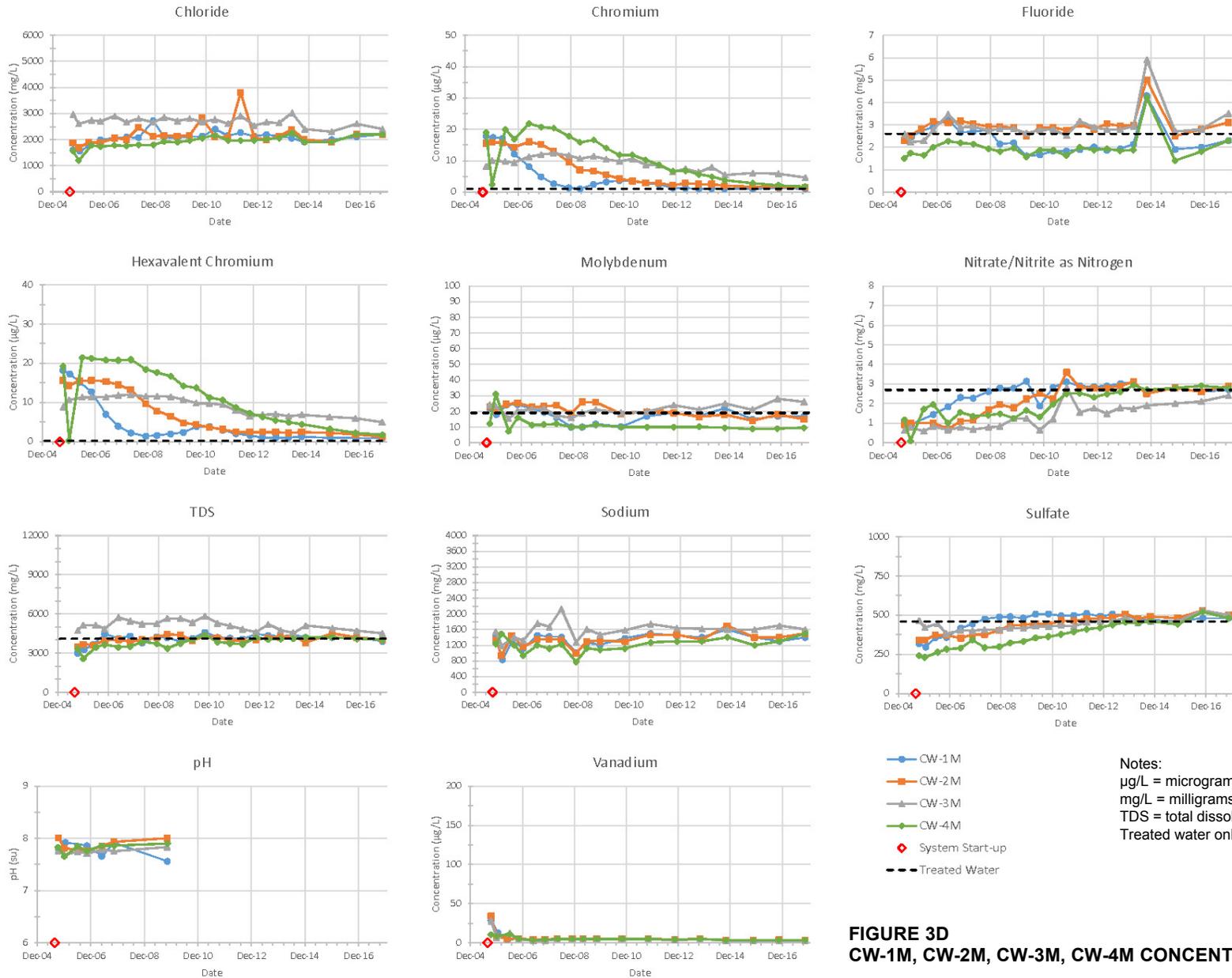
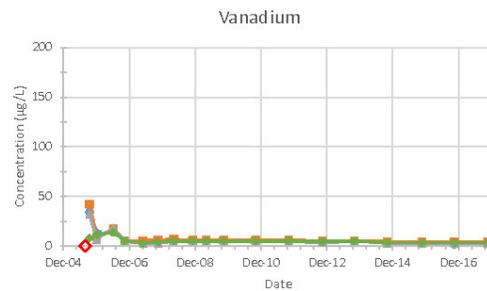
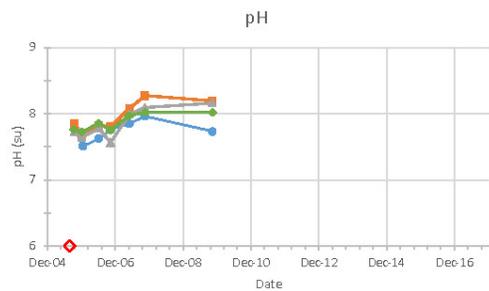
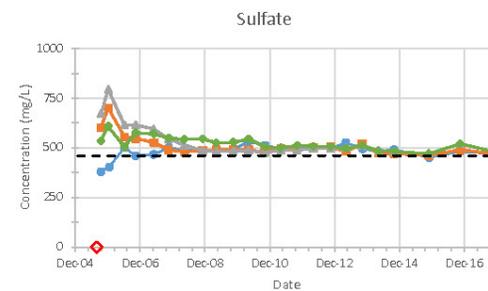
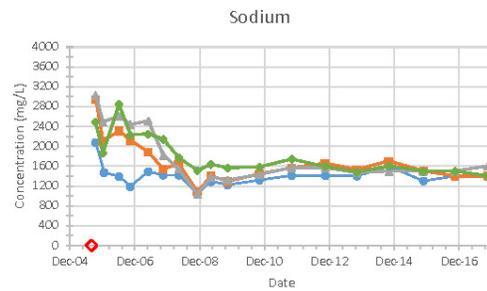
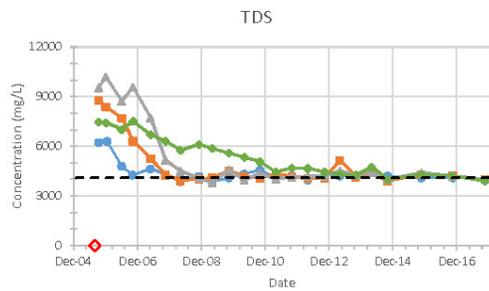
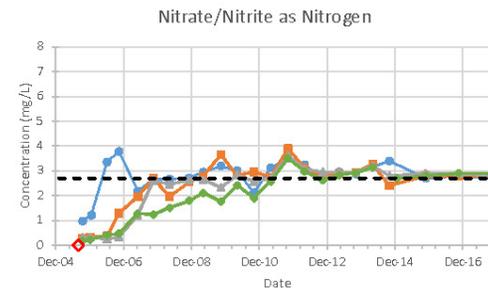
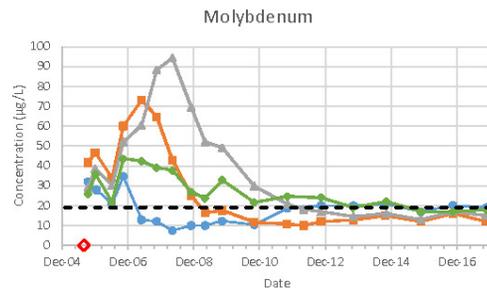
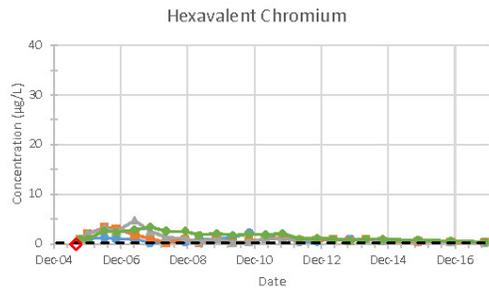
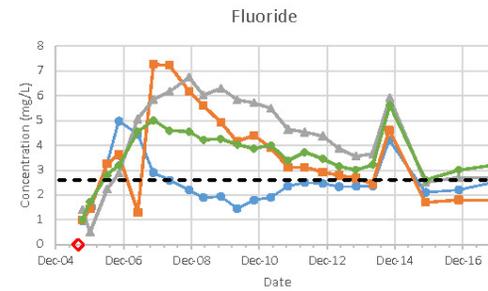
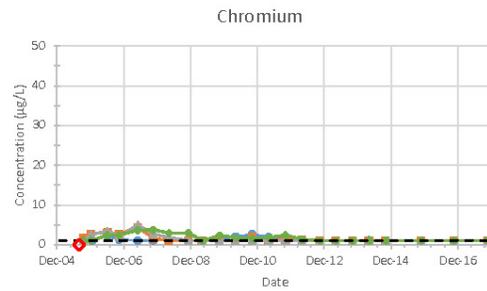
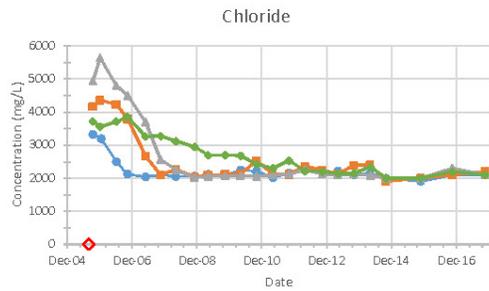


FIGURE 3D
CW-1M, CW-2M, CW-3M, CW-4M CONCENTRATION VERSUS TIME PLOTS

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

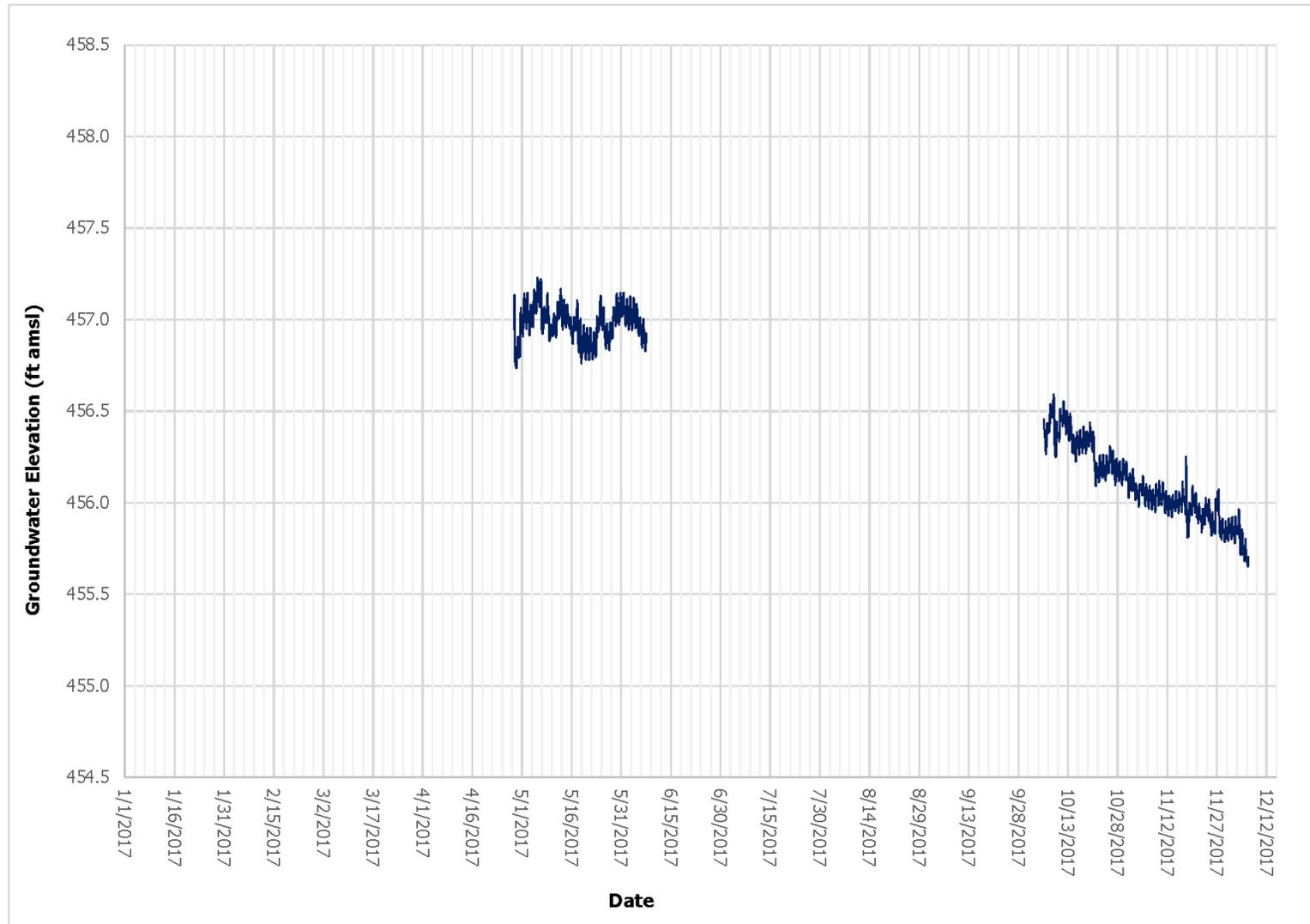


● CW-1D
 ■ CW-2D
 ▲ CW-3D
 ◆ CW-4D
 ◆ System Start-up
 - - - Treated Water

Notes:
 µg/L = micrograms per liter
 mg/L = milligrams per liter
 TDS = total dissolved solids
 Treated water data only for select analytes.

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

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



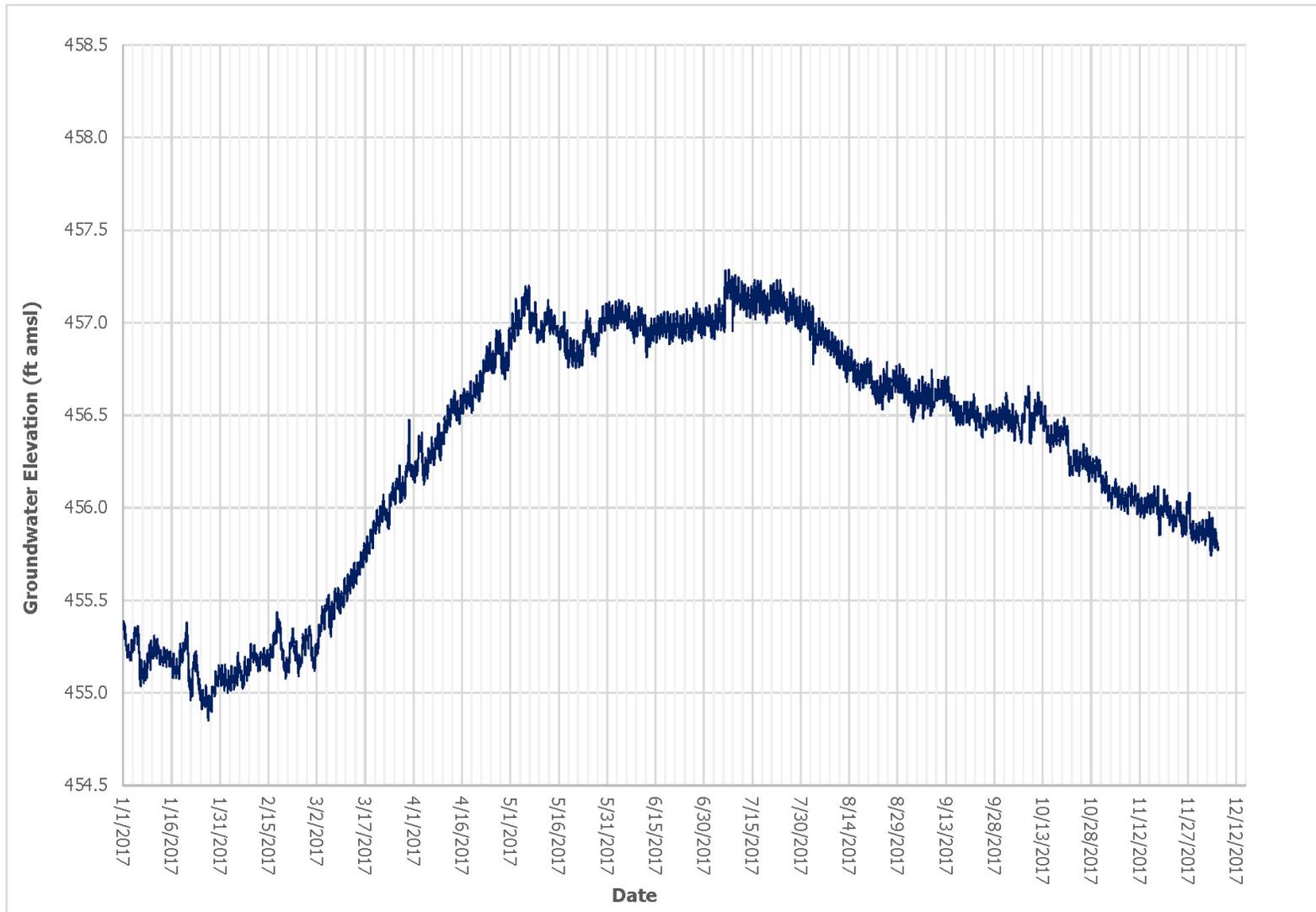
Notes:

ft amsl = feet above mean sea level

Data are unavailable between January 1 and April 27, 2017 and between June 8, 2017 and October 4, 2017 due to transducer malfunction/failure.

FIGURE 4A
OW-1S GROUNDWATER ELEVATION HYDROGRAPH

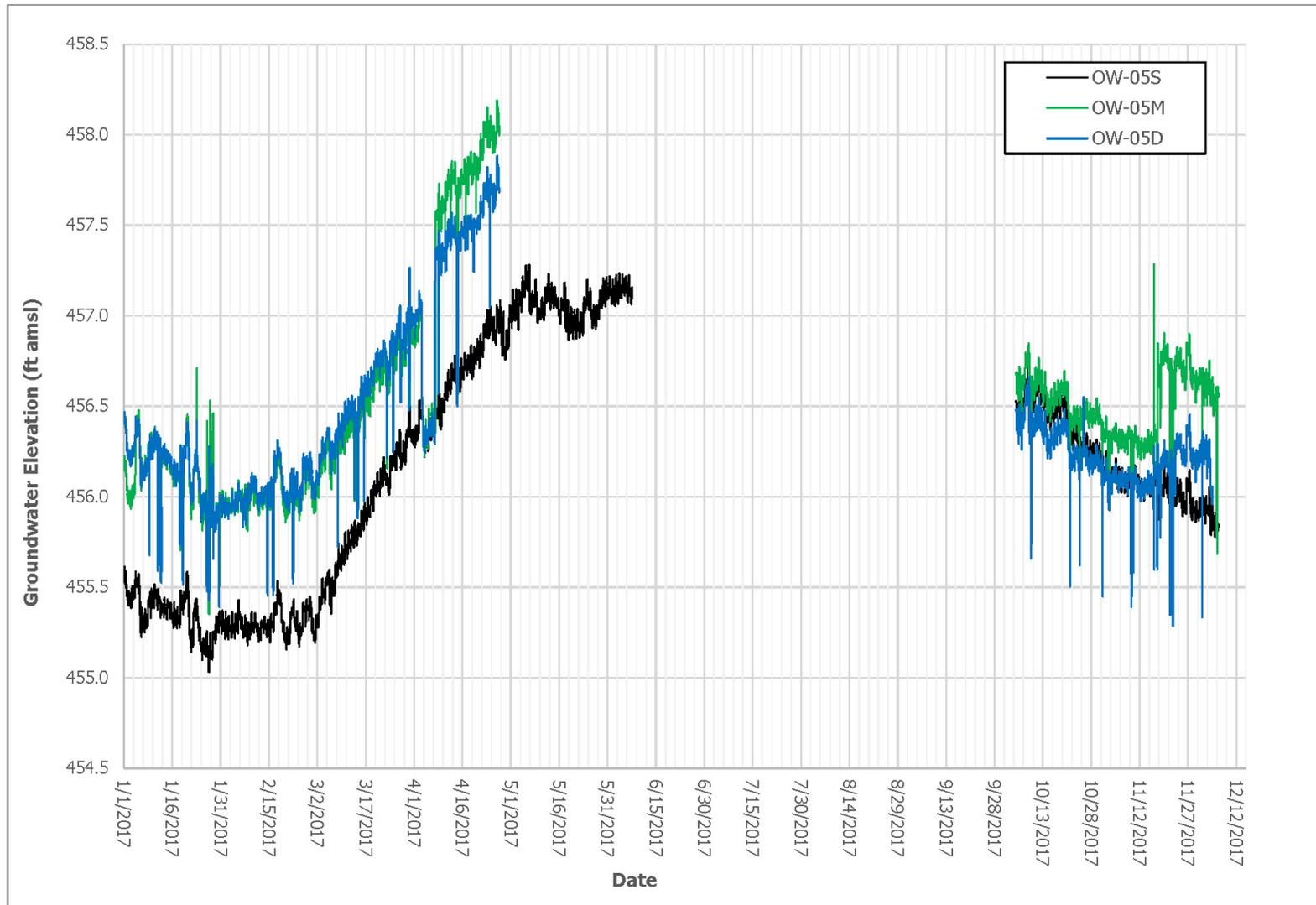
IM-3 COMPLIANCE MONITORING PROGRAM,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA



Notes:
ft amsl = feet above mean sea level

FIGURE 4B
OW-2S GROUNDWATER ELEVATION HYDROGRAPH

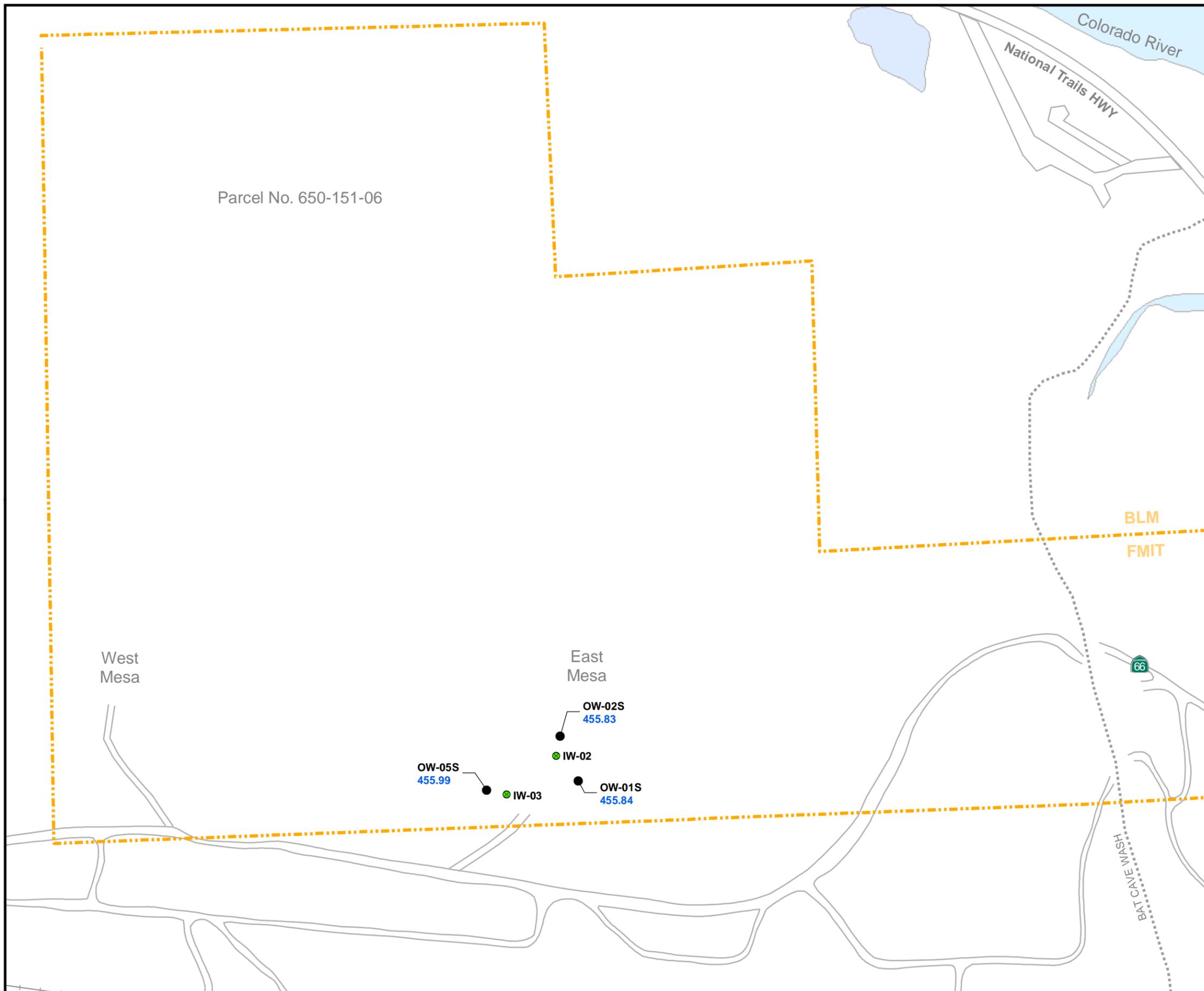
IM-3 COMPLIANCE MONITORING PROGRAM,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA



Notes:
 ft amsl = feet above mean sea level
 OW-05S data are unavailable between June 8, 2017 and October 3, 2017 due to transducer malfunction/failure.
 OW-05M and OW-05D data are unavailable between April 28, 2017 and October 3, 2017 due to transducer malfunction/failure.

FIGURE 4C
OW-5 GROUNDWATER ELEVATION HYDROGRAPHS

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



LEGEND

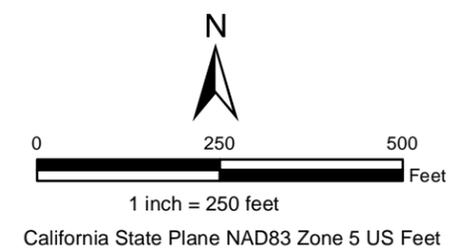
- Groundwater Monitoring, Compliance, and Observation Well
- IM-3 Injection Well
- Property Line

Groundwater Elevations for Shallow Wells in IM-3 Injection Area

- **OW-05S** Salinity and temperature adjusted groundwater head elevation in feet above mean sea level (MSL).
- **455.99**

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

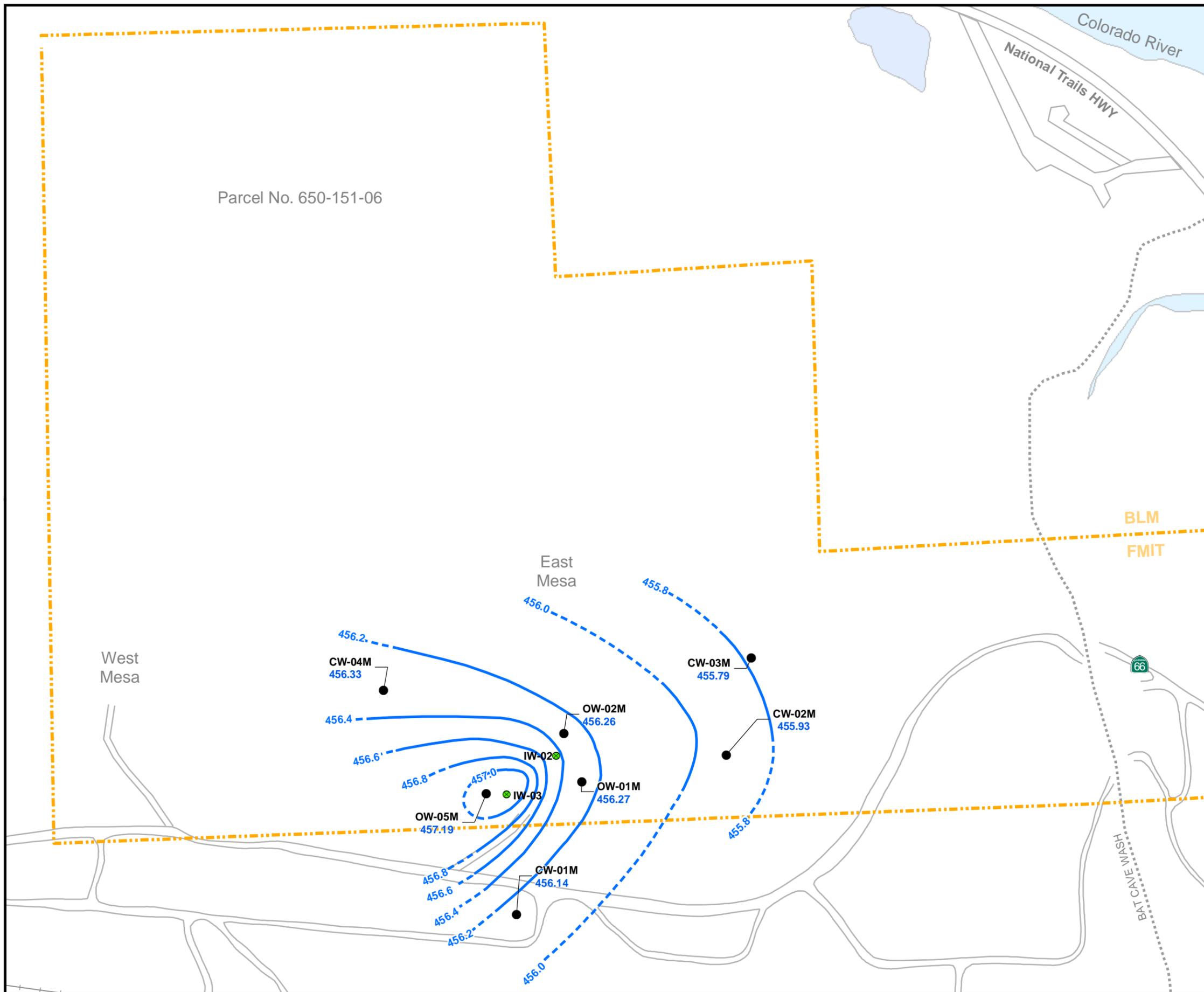
Data posted from December 4, 2017 manual water level snapshot



**FIGURE 5A
 GROUNDWATER ELEVATIONS FOR
 SHALLOW WELLS, DECEMBER 4, 2017**

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





LEGEND

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

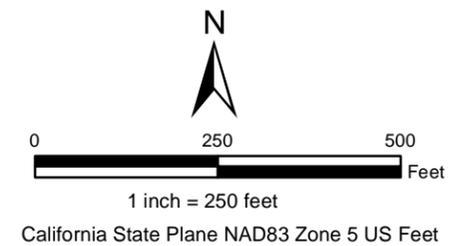
Groundwater Elevations for Mid-Depth Wells in IM-3 Injection Area

- **OW-05M** Salinity and temperature adjusted groundwater head elevation in feet above mean sea level (MSL).
- **457.19**
- Groundwater elevation contour in feet above MSL (0.2 foot interval). Dashed where inferred.

Notes:

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

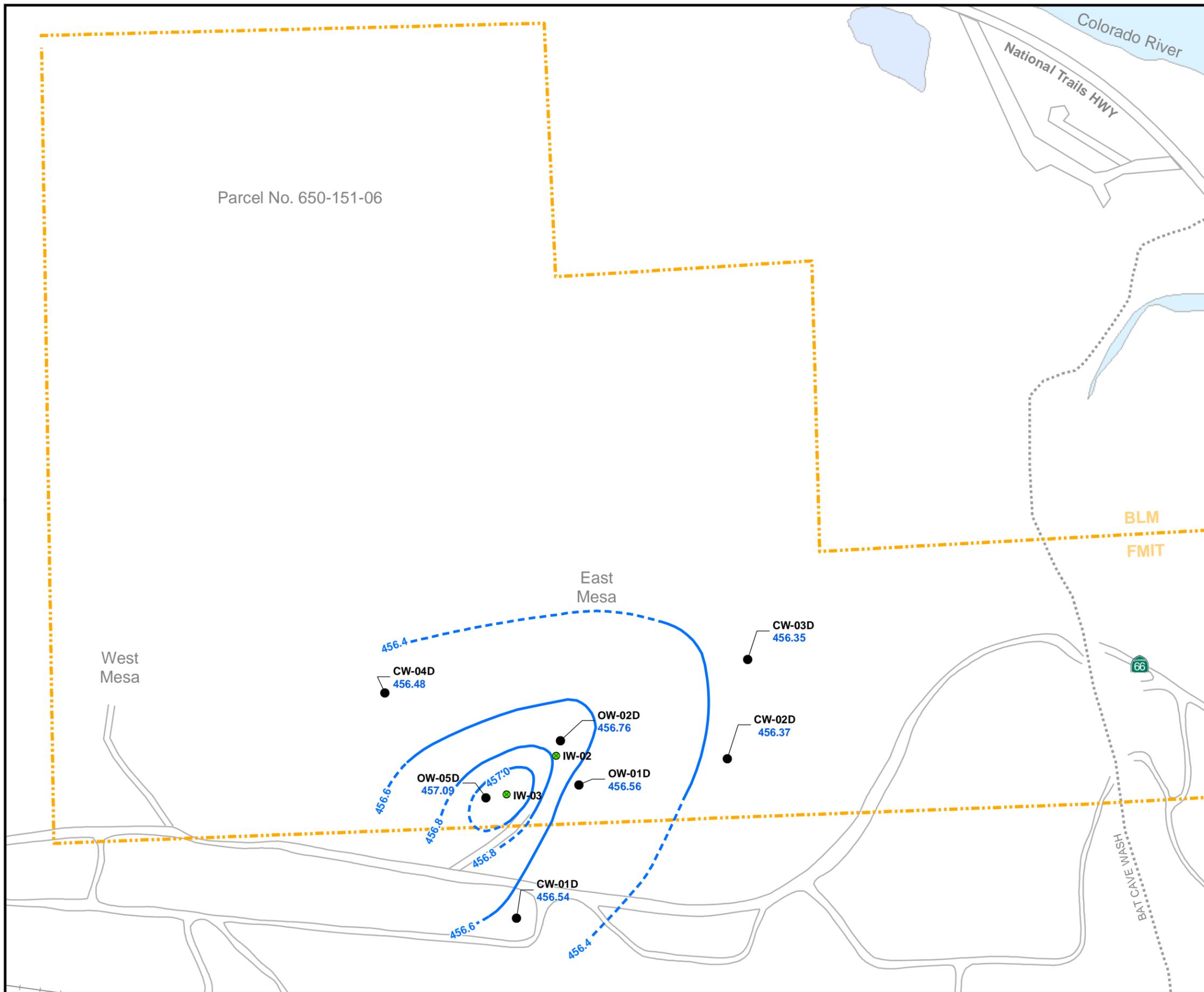
Data posted and contoured from December 4, 2017 manual water level snapshot.



**FIGURE 5B
 GROUNDWATER ELEVATION
 CONTOURS FOR MID-DEPTH WELLS,
 DECEMBER 4, 2017**

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





LEGEND

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

Groundwater Elevations for Deep Wells in IM-3 Injection Area

- **OW-05D** Salinity and temperature adjusted groundwater head elevation in feet above mean sea level (MSL).
● **457.09**
- Groudwater elevation contour in feet above MSL (0.2 foot interval). Dashed where inferred.

Notes:
 BLM = Bureau of Land Management
 FMIT = Fort Mojave Indian Tribe
 Data posted and contoured from December 4, 2017 manual water level snapshot.

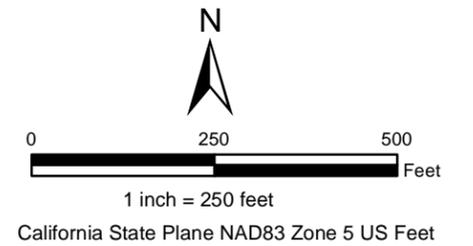


FIGURE 5C
GROUNDWATER ELEVATION
CONTOURS FOR DEEP WELLS,
DECEMBER 4, 2017
 IM-3 COMPLIANCE MONITORING PROGRAM
 PG&E TOPOCK COMPRESSOR STATION
 NEEDLES, CALIFORNIA



APPENDIX A

Laboratory Reports, 2017 (provided on CD-ROM only)



November 09, 2017

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

Workorder No.: N026641

RE: PG&E Topock - CMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on October 23, 2017 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,

Quennie Manimtim

Quennie Manimtim
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 Advanced Technology Laboratories - Las Vegas.



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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.801B
Lab Order: N026641

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) is outside recovery criteria for Sodium in QC samples N026641-001B-MS2 and N026661-002C-MS2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.



ASSET Laboratories

Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.801B
Lab Order: N026641
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N026641-001A	OW-01M-Q417	Groundwater	10/23/2017 3:11:00 PM	10/23/2017	11/9/2017
N026641-001B	OW-01M-Q417	Groundwater	10/23/2017 3:11:00 PM	10/23/2017	11/9/2017
N026641-001C	OW-01M-Q417	Groundwater	10/23/2017 3:11:00 PM	10/23/2017	11/9/2017
N026641-001D	OW-01M-Q417	Groundwater	10/23/2017 3:11:00 PM	10/23/2017	11/9/2017
N026641-002A	OW-01S-Q417	Groundwater	10/23/2017 2:10:00 PM	10/23/2017	11/9/2017
N026641-002B	OW-01S-Q417	Groundwater	10/23/2017 2:10:00 PM	10/23/2017	11/9/2017
N026641-002C	OW-01S-Q417	Groundwater	10/23/2017 2:10:00 PM	10/23/2017	11/9/2017
N026641-002D	OW-01S-Q417	Groundwater	10/23/2017 2:10:00 PM	10/23/2017	11/9/2017
N026641-003A	MW-707-Q417	Groundwater	10/23/2017 4:00:00 PM	10/23/2017	11/9/2017
N026641-004A	OW-02S-Q417	Groundwater	10/23/2017 3:42:00 PM	10/23/2017	11/9/2017
N026641-004B	OW-02S-Q417	Groundwater	10/23/2017 3:42:00 PM	10/23/2017	11/9/2017
N026641-004C	OW-02S-Q417	Groundwater	10/23/2017 3:42:00 PM	10/23/2017	11/9/2017
N026641-004D	OW-02S-Q417	Groundwater	10/23/2017 3:42:00 PM	10/23/2017	11/9/2017
N026641-005A	OW-05S-Q417	Groundwater	10/23/2017 3:40:00 PM	10/23/2017	11/9/2017
N026641-005B	OW-05S-Q417	Groundwater	10/23/2017 3:40:00 PM	10/23/2017	11/9/2017
N026641-005C	OW-05S-Q417	Groundwater	10/23/2017 3:40:00 PM	10/23/2017	11/9/2017
N026641-005D	OW-05S-Q417	Groundwater	10/23/2017 3:40:00 PM	10/23/2017	11/9/2017
N026641-006A	MW-705-Q417	Groundwater	10/23/2017 3:50:00 PM	10/23/2017	11/9/2017
N026641-007A	MW-706-Q417	Groundwater	10/23/2017 4:00:00 PM	10/23/2017	11/9/2017



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-001

Client Sample ID: OW-01M-Q417
Collection Date: 10/23/2017 3:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171024D	QC Batch: R118788				PrepDate		Analyst: LR
Specific Conductance	6900	0.10	0.10		umhos/cm	1	10/24/2017 11:00 AM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-002

Client Sample ID: OW-01S-Q417
Collection Date: 10/23/2017 2:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171024D	QC Batch: R118788				PrepDate		Analyst: LR
Specific Conductance	5500	0.10	0.10		umhos/cm	1	10/24/2017 11:00 AM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-004

Client Sample ID: OW-02S-Q417
Collection Date: 10/23/2017 3:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171024D	QC Batch: R118788				PrepDate		Analyst: LR
Specific Conductance	2900	0.10	0.10		umhos/cm	1	10/24/2017 11:00 AM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-005

Client Sample ID: OW-05S-Q417
Collection Date: 10/23/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171024D	QC Batch: R118788				PrepDate		Analyst: LR
Specific Conductance	4400	0.10	0.10		umhos/cm	1	10/24/2017 11:00 AM

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



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 ORELAP/NELAP Cert 4046

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026641
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID N026641-001CDUP	SampType: DUP	TestCode: 120.1_WPGE	Units: umhos/cm	Prep Date:	RunNo: 118788						
Client ID: ZZZZZ	Batch ID: R118788	TestNo: EPA 120.1	Analysis Date: 10/24/2017	SeqNo: 2806796							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6870.000	0.10						6860	0.146	10	

Qualifiers:

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

Calculations are based on raw values



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-001

Client Sample ID: OW-01M-Q417
Collection Date: 10/23/2017 3:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171024G	QC Batch: 64369				PrepDate	10/24/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	10/24/2017 01:20 PM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-002

Client Sample ID: OW-01S-Q417
Collection Date: 10/23/2017 2:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171024G	QC Batch: 64369				PrepDate	10/24/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	3800	50	50		mg/L	1	10/24/2017 01:20 PM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-004

Client Sample ID: OW-02S-Q417
Collection Date: 10/23/2017 3:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171024G	QC Batch: 64369				PrepDate	10/24/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	1700	20	20		mg/L	1	10/24/2017 01:20 PM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-005

Client Sample ID: OW-05S-Q417
Collection Date: 10/23/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171024G	QC Batch: 64369				PrepDate	10/24/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	3000	33	33		mg/L	1	10/24/2017 01:20 PM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026641
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-64369	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	10/24/2017	RunNo:	118791			
Client ID:	LCSW	Batch ID:	64369	TestNo:	SM2540C			Analysis Date:	10/24/2017	SeqNo:	2806820			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		945.000		10	1000	0		94.5	80	120				

Sample ID	MB-64369	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	10/24/2017	RunNo:	118791			
Client ID:	PBW	Batch ID:	64369	TestNo:	SM2540C			Analysis Date:	10/24/2017	SeqNo:	2806821			
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	N026641-001CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	10/24/2017	RunNo:	118791			
Client ID:	ZZZZZ	Batch ID:	64369	TestNo:	SM2540C			Analysis Date:	10/24/2017	SeqNo:	2806827			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		3975.000		50						3975		0	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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-001

Client Sample ID: OW-01M-Q417
Collection Date: 10/23/2017 3:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171105B	QC Batch: 64416				PrepDate 10/27/2017		Analyst: CEI
Sodium	1400000	1300	25000		µg/L	50	11/5/2017 04:21 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		



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-002

Client Sample ID: OW-01S-Q417
Collection Date: 10/23/2017 2:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171105B	QC Batch: 64416			PrepDate	10/27/2017	Analyst: CEI
Sodium	830000	1300	25000	µg/L	50	11/5/2017 04:32 PM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-004

Client Sample ID: OW-02S-Q417
Collection Date: 10/23/2017 3:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171105B	QC Batch: 64416			PrepDate	10/27/2017	Analyst: CEI
Sodium	500000	1300	25000	µg/L	50	11/5/2017 04:35 PM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-005

Client Sample ID: OW-05S-Q417
Collection Date: 10/23/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171105B	QC Batch: 64416			PrepDate	10/27/2017	Analyst: CEI
Sodium	570000	1300	25000	µg/L	50	11/5/2017 04:39 PM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026641
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPBB

Sample ID MB-64416	SampType: MBLK	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: PBW	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822304
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	ND	500			

Sample ID LCS2-64416	SampType: LCS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: LCSW	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822305
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	19989.201	500	20000	0	99.9 85 115

Sample ID N026641-001B-MS2	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: ZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822330
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	1337836.766	25000	20000	1416000	-393 75 125 S

Sample ID N026661-002C-MS2	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: ZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822346
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	1562557.389	25000	20000	1536000	134 75 125 S

Sample ID N026661-002C-MSD	SampType: MSD	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: ZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822347
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	1556293.056	25000	20000	1536000	102 75 125 1563000 0.402 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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-001

Client Sample ID: OW-01M-Q417
Collection Date: 10/23/2017 3:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450			PrepDate	10/29/2017	Analyst: CEI
Molybdenum	19	0.039	0.50	µg/L	1	11/6/2017 02:09 AM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-002

Client Sample ID: OW-01S-Q417
Collection Date: 10/23/2017 2:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450			PrepDate	10/29/2017	Analyst: CEI
Molybdenum	6.4	0.039	0.50	µg/L	1	11/6/2017 03:10 AM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-004

Client Sample ID: OW-02S-Q417
Collection Date: 10/23/2017 3:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450			PrepDate	10/29/2017	Analyst: CEI
Molybdenum	25	0.039	0.50	µg/L	1	11/6/2017 03:21 AM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-005

Client Sample ID: OW-05S-Q417
Collection Date: 10/23/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450			PrepDate	10/29/2017	Analyst: CEI
Molybdenum	12	0.039	0.50	µg/L	1	11/6/2017 03:32 AM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026641
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID MB-64450	SampType: MBLK	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046
Client ID: PBW	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823198
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Molybdenum	ND	0.50			
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Sample ID LCS-64450	SampType: LCS	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046
Client ID: LCSW	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823199
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Molybdenum	9.390	0.50	10.00	0	93.9 85 115
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Sample ID N026641-001B-MS	SampType: MS	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046
Client ID: ZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823205
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Molybdenum	29.987	0.50	10.00	18.86	111 75 125
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Sample ID N026641-001B-MSD	SampType: MSD	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046
Client ID: ZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823207
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Molybdenum	30.140	0.50	10.00	18.86	113 75 125 29.99 0.508 20
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Sample ID N026661-007C-MS	SampType: MS	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046
Client ID: ZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823238
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Molybdenum	20.255	0.50	10.00	9.574	107 75 125
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Qualifiers:

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-001

Client Sample ID: OW-01M-Q417
Collection Date: 10/23/2017 3:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171024A	QC Batch: R118763				PrepDate		Analyst: RAB
Hexavalent Chromium	0.87	0.033	0.20		µg/L	1	10/24/2017 11:28 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	1.0	0.019	1.0		µg/L	1	11/6/2017 02:09 AM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-002

Client Sample ID: OW-01S-Q417
Collection Date: 10/23/2017 2:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC

EPA 218.6

RunID: NV00922-IC7_171024A	QC Batch: R118763				PrepDate		Analyst: RAB
Hexavalent Chromium	6.8	0.033	0.20		µg/L	1	10/24/2017 11:38 AM

DISSOLVED METALS BY ICP-MS

EPA 200.8

RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	7.2	0.019	1.0		µg/L	1	11/6/2017 03:10 AM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-003

Client Sample ID: MW-707-Q417
Collection Date: 10/23/2017 4:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC

EPA 218.6

RunID: NV00922-IC7_171024A	QC Batch: R118763			PrepDate			Analyst: RAB
Hexavalent Chromium	ND	0.033	0.20	µg/L	1		10/24/2017 11:47 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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-004

Client Sample ID: OW-02S-Q417
Collection Date: 10/23/2017 3:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171024A	QC Batch: R118763				PrepDate		Analyst: RAB
Hexavalent Chromium	17	0.17	1.0		µg/L	5	10/24/2017 11:56 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	18	0.019	1.0		µg/L	1	11/6/2017 03:21 AM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-005

Client Sample ID: OW-05S-Q417
Collection Date: 10/23/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC

EPA 218.6

RunID: NV00922-IC7_171024A	QC Batch: R118763				PrepDate		Analyst: RAB
Hexavalent Chromium	14	0.066	0.40		µg/L	2	10/24/2017 12:06 PM

DISSOLVED METALS BY ICP-MS

EPA 200.8

RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	14	0.019	1.0		µg/L	1	11/6/2017 03:32 AM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-006

Client Sample ID: MW-705-Q417
Collection Date: 10/23/2017 3:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC

EPA 218.6

RunID: NV00922-IC7_171024A	QC Batch: R118763			PrepDate			Analyst: RAB
Hexavalent Chromium	ND	0.033	0.20	µg/L	1		10/24/2017 12:15 PM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-007

Client Sample ID: MW-706-Q417
Collection Date: 10/23/2017 4:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC

EPA 218.6

RunID: NV00922-IC7_171024A	QC Batch: R118763			PrepDate			Analyst: RAB
Hexavalent Chromium	ND	0.033	0.20	µg/L	1		10/24/2017 12:25 PM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026641
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID MB-64450	SampType: MBLK	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: PBW	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823084
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium ND 1.0

Sample ID LCS-64450	SampType: LCS	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: LCSW	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823085
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium 10.449 1.0 10.00 0 104 85 115

Sample ID N026641-001B-MS	SampType: MS	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: ZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823091
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium 10.137 1.0 10.00 1.001 91.4 75 125

Sample ID N026641-001B-MSD	SampType: MSD	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: ZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823093
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium 10.018 1.0 10.00 1.001 90.2 75 125 10.14 1.18 20

Sample ID N026661-007C-MS	SampType: MS	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: ZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823124
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium 11.139 1.0 10.00 1.744 94.0 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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026641
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: MB-R118763	SampType: MBLK	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118763						
Client ID: PBW	Batch ID: R118763	TestNo: EPA 218.6		Analysis Date: 10/24/2017	SeqNo: 2805321						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	ND	0.20									
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Sample ID: LCS-R118763	SampType: LCS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118763						
Client ID: LCSW	Batch ID: R118763	TestNo: EPA 218.6		Analysis Date: 10/24/2017	SeqNo: 2805322						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	5.102	0.20	5.000	0	102	90	110				
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Sample ID: N026641-001ADUP	SampType: DUP	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118763						
Client ID: ZZZZZ	Batch ID: R118763	TestNo: EPA 218.6		Analysis Date: 10/24/2017	SeqNo: 2805322						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	0.910	0.20						0.8690	4.61	20	
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Sample ID: N026641-002AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118763						
Client ID: ZZZZZ	Batch ID: R118763	TestNo: EPA 218.6		Analysis Date: 10/24/2017	SeqNo: 2805333						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	12.217	0.20	5.000	6.813	108	90	110				
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Sample ID: N026641-003AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118763						
Client ID: ZZZZZ	Batch ID: R118763	TestNo: EPA 218.6		Analysis Date: 10/24/2017	SeqNo: 2805336						
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				
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Qualifiers:

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026641
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID N026641-004AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118763						
Client ID: ZZZZZZ	Batch ID: R118763	TestNo: EPA 218.6		Analysis Date: 10/24/2017	SeqNo: 2805337						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.985	1.0	25.00	17.32	103	90	110				

Sample ID N026641-005AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118763						
Client ID: ZZZZZZ	Batch ID: R118763	TestNo: EPA 218.6		Analysis Date: 10/24/2017	SeqNo: 2805338						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	24.276	0.40	10.00	13.62	107	90	110				

Sample ID N026641-006AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118763						
Client ID: ZZZZZZ	Batch ID: R118763	TestNo: EPA 218.6		Analysis Date: 10/24/2017	SeqNo: 2805339						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.091	0.20	1.000	0	109	90	110				

Sample ID N026641-007AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118763						
Client ID: ZZZZZZ	Batch ID: R118763	TestNo: EPA 218.6		Analysis Date: 10/24/2017	SeqNo: 2805340						
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				

Sample ID N026641-002AMSD	SampType: MSD	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118763						
Client ID: ZZZZZZ	Batch ID: R118763	TestNo: EPA 218.6		Analysis Date: 10/24/2017	SeqNo: 2805341						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.065	0.20	5.000	6.813	105	90	110	12.22	1.25	20	

Qualifiers:

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026641
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID N026641-001AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118763						
Client ID: ZZZZZZ	Batch ID: R118763	TestNo: EPA 218.6		Analysis Date: 10/24/2017	SeqNo: 2805342						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.895	0.20	1.000	0.8690	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 | |



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-001

Client Sample ID: OW-01M-Q417
Collection Date: 10/23/2017 3:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171024E	QC Batch: R118789				PrepDate		Analyst: LR
Turbidity	0.30	0.10	0.10		NTU	1	10/24/2017 11:30 AM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California **Client Sample ID:** OW-01S-Q417
Lab Order: N026641 **Collection Date:** 10/23/2017 2:10:00 PM
Project: PG&E Topock - CMP, RC000753.801B **Matrix:** GROUNDWATER
Lab ID: N026641-002

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
SM 2130B							
RunID: NV00922-WC_171024E	QC Batch: R118789				PrepDate	Analyst: LR	
Turbidity	0.33	0.10	0.10		NTU	1	10/24/2017 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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-004

Client Sample ID: OW-02S-Q417
Collection Date: 10/23/2017 3:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171024E	QC Batch: R118789				PrepDate		Analyst: LR
Turbidity	1.8	0.10	0.10		NTU	1	10/24/2017 11:30 AM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-005

Client Sample ID: OW-05S-Q417
Collection Date: 10/23/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171024E	QC Batch: R118789				PrepDate		Analyst: LR
Turbidity	0.73	0.10	0.10		NTU	1	10/24/2017 11:30 AM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026641
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2130_W

Sample ID MB-R118789	SampType: MBLK	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 118789						
Client ID: PBW	Batch ID: R118789	TestNo: SM 2130B		Analysis Date: 10/24/2017	SeqNo: 2806800						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Turbidity	ND	0.10									
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Sample ID N026641-004CDUP	SampType: DUP	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 118789						
Client ID: ZZZZZ	Batch ID: R118789	TestNo: SM 2130B		Analysis Date: 10/24/2017	SeqNo: 2806804						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Turbidity	1.810	0.10						1.800	0.554	30	
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Qualifiers:

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

Calculations are based on raw values

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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-001

Client Sample ID: OW-01M-Q417
Collection Date: 10/23/2017 3:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171024A	QC Batch: R118808				PrepDate		Analyst: RAB
Chloride	2100	4.6	250		mg/L	500	10/24/2017 12:49 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171024A	QC Batch: R118808				PrepDate		Analyst: RAB
Fluoride	2.3	0.032	0.50		mg/L	5	10/24/2017 11:17 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171024A	QC Batch: R118808				PrepDate		Analyst: RAB
Sulfate	470	1.1	25		mg/L	50	10/24/2017 01:50 PM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-002

Client Sample ID: OW-01S-Q417
Collection Date: 10/23/2017 2:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171024A	QC Batch: R118808				PrepDate		Analyst: RAB
Chloride	1800	4.6	250		mg/L	500	10/24/2017 01:04 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171024A	QC Batch: R118808				PrepDate		Analyst: RAB
Fluoride	1.5	0.032	0.50		mg/L	5	10/24/2017 12:03 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171024A	QC Batch: R118808				PrepDate		Analyst: RAB
Sulfate	370	1.1	25		mg/L	50	10/24/2017 02:05 PM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-004

Client Sample ID: OW-02S-Q417
Collection Date: 10/23/2017 3:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171024A	QC Batch: R118808				PrepDate		Analyst: RAB
Chloride	870	1.8	100		mg/L	200	10/24/2017 01:19 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171024A	QC Batch: R118808				PrepDate		Analyst: RAB
Fluoride	3.4	0.013	0.20		mg/L	2	10/24/2017 12:18 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171024A	QC Batch: R118808				PrepDate		Analyst: RAB
Sulfate	130	0.23	5.0		mg/L	10	10/24/2017 02:21 PM

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-005

Client Sample ID: OW-05S-Q417
Collection Date: 10/23/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171024A	QC Batch: R118808				PrepDate		Analyst: RAB
Chloride	1500	1.8	100		mg/L	200	10/24/2017 01:35 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171024A	QC Batch: R118808				PrepDate		Analyst: RAB
Fluoride	1.7	0.032	0.50		mg/L	5	10/24/2017 12:33 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171024A	QC Batch: R118808				PrepDate		Analyst: RAB
Sulfate	280	0.46	10		mg/L	20	10/24/2017 03:06 PM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026641
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R118808_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118808			
Client ID:	PBW	Batch ID:	R118808	TestNo:	EPA 300.0			Analysis Date:	10/24/2017	SeqNo:	2808453			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		0.127		0.50										

Sample ID	LCS-R118808_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118808			
Client ID:	LCSW	Batch ID:	R118808	TestNo:	EPA 300.0			Analysis Date:	10/24/2017	SeqNo:	2808454			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		2.117		0.50	2.000	0		106	90	110				

Sample ID	N026641-004CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118808			
Client ID:	ZZZZZ	Batch ID:	R118808	TestNo:	EPA 300.0			Analysis Date:	10/24/2017	SeqNo:	2808464			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		1288.120		100	400.0	866.2		105	80	120				

Sample ID	N026641-004CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118808			
Client ID:	ZZZZZ	Batch ID:	R118808	TestNo:	EPA 300.0			Analysis Date:	10/24/2017	SeqNo:	2808465			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		1280.200		100	400.0	866.2		104	80	120	1288	0.617	20	

Sample ID	N026641-002CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118808			
Client ID:	ZZZZZ	Batch ID:	R118808	TestNo:	EPA 300.0			Analysis Date:	10/24/2017	SeqNo:	2808466			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		1784.950		250							1758	1.50	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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026641
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPG

Sample ID	MB-R118808_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118808			
Client ID:	PBW	Batch ID:	R118808	TestNo:	EPA 300.0			Analysis Date:	10/24/2017	SeqNo:	2808434			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride ND 0.10

Sample ID	LCS-R118808_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118808			
Client ID:	LCSW	Batch ID:	R118808	TestNo:	EPA 300.0			Analysis Date:	10/24/2017	SeqNo:	2808435			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 1.260 0.10 1.250 0 101 90 110

Sample ID	N026641-001CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118808			
Client ID:	ZZZZZZ	Batch ID:	R118808	TestNo:	EPA 300.0			Analysis Date:	10/24/2017	SeqNo:	2808444			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 8.490 0.50 6.250 2.342 98.4 80 120

Sample ID	N026641-001CMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118808			
Client ID:	ZZZZZZ	Batch ID:	R118808	TestNo:	EPA 300.0			Analysis Date:	10/24/2017	SeqNo:	2808445			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 8.511 0.50 6.250 2.342 98.7 80 120 8.490 0.241 20

Sample ID	N026641-002CDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118808			
Client ID:	ZZZZZZ	Batch ID:	R118808	TestNo:	EPA 300.0			Analysis Date:	10/24/2017	SeqNo:	2808446			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 1.728 0.50 1.544 11.3 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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026641
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID: MB-R118808_SO4	SampType: MBLK	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 118808						
Client ID: PBW	Batch ID: R118808	TestNo: EPA 300.0		Analysis Date: 10/24/2017	SeqNo: 2808496						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID: LCS-R118808_SO4	SampType: LCS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 118808						
Client ID: LCSW	Batch ID: R118808	TestNo: EPA 300.0		Analysis Date: 10/24/2017	SeqNo: 2808497						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.912	0.50	4.000	0	97.8	90	110				

Sample ID: N026522-004CDUP	SampType: DUP	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 118808						
Client ID: ZZZZZZ	Batch ID: R118808	TestNo: EPA 300.0		Analysis Date: 10/24/2017	SeqNo: 2808512						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	63.425	2.5						63.79	0.580	20	

Sample ID: N026641-001CMS	SampType: MS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 118808						
Client ID: ZZZZZZ	Batch ID: R118808	TestNo: EPA 300.0		Analysis Date: 10/24/2017	SeqNo: 2808513						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	669.095	25	200.0	465.2	102	80	120				

Sample ID: N026641-001CMSD	SampType: MSD	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 118808						
Client ID: ZZZZZZ	Batch ID: R118808	TestNo: EPA 300.0		Analysis Date: 10/24/2017	SeqNo: 2808514						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	663.235	25	200.0	465.2	99.0	80	120	669.1	0.880	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 |

Calculations are based on raw values

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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-001

Client Sample ID: OW-01M-Q417
Collection Date: 10/23/2017 3:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171025A	QC Batch: R118795				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	3.0	0.16	0.25		mg/L	5	10/25/2017

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-002

Client Sample ID: OW-01S-Q417
Collection Date: 10/23/2017 2:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171025A	QC Batch: R118795				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.8	0.16	0.25		mg/L	5	10/25/2017

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-004

Client Sample ID: OW-02S-Q417
Collection Date: 10/23/2017 3:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171025A	QC Batch: R118795				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	3.0	0.16	0.25		mg/L	5	10/25/2017

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



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ANALYTICAL RESULTS

Print Date: 09-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026641
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026641-005

Client Sample ID: OW-05S-Q417
Collection Date: 10/23/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171025A	QC Batch: R118795				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.7	0.16	0.25		mg/L	5	10/25/2017

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026641
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID MB-R118795	SampType: MBLK	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118795
Client ID: PBW	Batch ID: R118795	TestNo: SM4500-NO3		Analysis Date: 10/25/2017	SeqNo: 2807032
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-R118795	SampType: LCS	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118795
Client ID: LCSW	Batch ID: R118795	TestNo: SM4500-NO3		Analysis Date: 10/25/2017	SeqNo: 2807033
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	0.478	0.050	0.5000	0	95.5 85 115

Sample ID N026641-001DDUP	SampType: DUP	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118795
Client ID: ZZZZZ	Batch ID: R118795	TestNo: SM4500-NO3		Analysis Date: 10/25/2017	SeqNo: 2807035
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	2.613	0.25			2.961 12.5 20

Sample ID N026641-002DMS	SampType: MS	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118795
Client ID: ZZZZZ	Batch ID: R118795	TestNo: SM4500-NO3		Analysis Date: 10/25/2017	SeqNo: 2807037
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	5.181	0.25	2.500	2.828	94.1 75 125

Sample ID N026641-002DMSD	SampType: MSD	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118795
Client ID: ZZZZZ	Batch ID: R118795	TestNo: SM4500-NO3		Analysis Date: 10/25/2017	SeqNo: 2807038
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	5.021	0.25	2.500	2.828	87.7 75 125 5.181 3.14 20

Qualifiers:

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



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ANALYTICAL SERVICES FOR THE ENVIRONMENT, ENERGY & WATER

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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NVO0922
ORELAP/NELAP Cert 4046

ASSET Laboratories

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

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

Cooler Received/Opened On: 10/23/2017 Workorder: N026641
 Rep sample Temp (Deg C): 2.1 IR Gun ID: 1
 Temp Blank: Yes No
 Carrier name: ASSET
 Last 4 digits of Tracking No.: NA Packing Material Used: None
 Cooling process: Ice Ice Pack Dry Ice Other None

Sample Receipt Checklist

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

Comments:

Checklist Completed By: YR  11/4/2017

Reviewed By:  11/06/2017

ASSET Laboratories

WORK ORDER Summary

24-Oct-17

WorkOrder: N026641

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/23/2017

Comments: Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026641-001A	OW-01M-Q417	10/23/2017 3:11:00 PM	11/6/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026641-001B			11/6/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026641-001C			11/6/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
N026641-001D			11/6/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026641-002A	OW-01S-Q417	10/23/2017 2:10:00 PM	11/6/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026641-002B			11/6/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026641-002C			11/6/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR

ASSET Laboratories

WORK ORDER Summary

24-Oct-17

WorkOrder: N026641

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/23/2017

Comments: Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026641-002C	OW-01S-Q417	10/23/2017 2:10:00 PM	11/6/2017	Groundwater		Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
N026641-002D			11/6/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026641-003A	MW-707-Q417	10/23/2017 4:00:00 PM	11/6/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026641-004A	OW-02S-Q417	10/23/2017 3:42:00 PM	11/6/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026641-004B			11/6/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026641-004C			11/6/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
N026641-004D			11/6/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW

ASSET Laboratories

WORK ORDER Summary

24-Oct-17

WorkOrder: N026641

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/23/2017

Comments: Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026641-005A	OW-05S-Q417	10/23/2017 3:40:00 PM	11/6/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026641-005B			11/6/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/6/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026641-005C			11/6/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			11/6/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
N026641-005D			11/6/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026641-006A	MW-705-Q417	10/23/2017 3:50:00 PM	11/6/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026641-007A	MW-706-Q417	10/23/2017 4:00:00 PM	11/6/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026641-008A	FOLDER	11/6/2017	11/6/2017		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			11/6/2017		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB

November 14, 2017

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

Workorder No.: N026661

RE: PG&E Topock - CMP, RC000753.801B

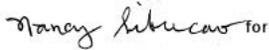
Attention: Dan Bush

Enclosed are the results for sample(s) received on October 24, 2017 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,

 for

Quennie Manimtim
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 Advanced Technology Laboratories - Las Vegas.



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ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.801B
Lab Order: N026661

CASE NARRATIVE**SAMPLE RECEIVING/GENERAL COMMENTS:**

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Subcontracted Analyses:

Ammonia was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) is outside recovery criteria for Sodium in QC samples N026641-001B-MS2 and N026661-002C-MS2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N026661-001C-MS1 and N026661-001C-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 200.8_Dissolved:

Dilution was necessary on some analytes for all samples due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N026641-001B-MS, N026641-001B-MSD and N026661-007CMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.



ASSET Laboratories

Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.801B
Lab Order: N026661
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N026661-001A	CW-02D-Q417	Groundwater	10/24/2017 2:51:00 PM	10/24/2017	11/14/2017
N026661-001B	CW-02D-Q417	Groundwater	10/24/2017 2:51:00 PM	10/24/2017	11/14/2017
N026661-001C	CW-02D-Q417	Groundwater	10/24/2017 2:51:00 PM	10/24/2017	11/14/2017
N026661-001D	CW-02D-Q417	Groundwater	10/24/2017 2:51:00 PM	10/24/2017	11/14/2017
N026661-001E	CW-02D-Q417	Groundwater	10/24/2017 2:51:00 PM	10/24/2017	11/14/2017
N026661-001F	CW-02D-Q417	Groundwater	10/24/2017 2:51:00 PM	10/24/2017	11/14/2017
N026661-002A	MW-901-Q417	Groundwater	10/24/2017 3:01:00 PM	10/24/2017	11/14/2017
N026661-002B	MW-901-Q417	Groundwater	10/24/2017 3:01:00 PM	10/24/2017	11/14/2017
N026661-002C	MW-901-Q417	Groundwater	10/24/2017 3:01:00 PM	10/24/2017	11/14/2017
N026661-002D	MW-901-Q417	Groundwater	10/24/2017 3:01:00 PM	10/24/2017	11/14/2017
N026661-002E	MW-901-Q417	Groundwater	10/24/2017 3:01:00 PM	10/24/2017	11/14/2017
N026661-002F	MW-901-Q417	Groundwater	10/24/2017 3:01:00 PM	10/24/2017	11/14/2017
N026661-003A	CW-02M-Q417	Groundwater	10/24/2017 3:32:00 PM	10/24/2017	11/14/2017
N026661-003B	CW-02M-Q417	Groundwater	10/24/2017 3:32:00 PM	10/24/2017	11/14/2017
N026661-003C	CW-02M-Q417	Groundwater	10/24/2017 3:32:00 PM	10/24/2017	11/14/2017
N026661-003D	CW-02M-Q417	Groundwater	10/24/2017 3:32:00 PM	10/24/2017	11/14/2017
N026661-003E	CW-02M-Q417	Groundwater	10/24/2017 3:32:00 PM	10/24/2017	11/14/2017
N026661-003F	CW-02M-Q417	Groundwater	10/24/2017 3:32:00 PM	10/24/2017	11/14/2017
N026661-004A	CW-03D-Q417	Groundwater	10/24/2017 1:40:00 PM	10/24/2017	11/14/2017
N026661-004B	CW-03D-Q417	Groundwater	10/24/2017 1:40:00 PM	10/24/2017	11/14/2017
N026661-004C	CW-03D-Q417	Groundwater	10/24/2017 1:40:00 PM	10/24/2017	11/14/2017
N026661-004D	CW-03D-Q417	Groundwater	10/24/2017 1:40:00 PM	10/24/2017	11/14/2017
N026661-004E	CW-03D-Q417	Groundwater	10/24/2017 1:40:00 PM	10/24/2017	11/14/2017
N026661-004F	CW-03D-Q417	Groundwater	10/24/2017 1:40:00 PM	10/24/2017	11/14/2017
N026661-005A	CW-03M-Q417	Groundwater	10/24/2017 12:38:00 PM	10/24/2017	11/14/2017
N026661-005B	CW-03M-Q417	Groundwater	10/24/2017 12:38:00 PM	10/24/2017	11/14/2017
N026661-005C	CW-03M-Q417	Groundwater	10/24/2017 12:38:00 PM	10/24/2017	11/14/2017
N026661-005D	CW-03M-Q417	Groundwater	10/24/2017 12:38:00 PM	10/24/2017	11/14/2017
N026661-005E	CW-03M-Q417	Groundwater	10/24/2017 12:38:00 PM	10/24/2017	11/14/2017



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 ELAP Cert 2676 | NV Cert NV00922
 ORELAP/NELAP Cert 4046

“Servina Clients with Passion and Professionalism”

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.801B
Lab Order: N026661
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N026661-005F	CW-03M-Q417	Groundwater	10/24/2017 12:38:00 PM	10/24/2017	11/14/2017
N026661-006A	CW-04D-Q417	Groundwater	10/24/2017 10:53:00 AM	10/24/2017	11/14/2017
N026661-006B	CW-04D-Q417	Groundwater	10/24/2017 10:53:00 AM	10/24/2017	11/14/2017
N026661-006C	CW-04D-Q417	Groundwater	10/24/2017 10:53:00 AM	10/24/2017	11/14/2017
N026661-006D	CW-04D-Q417	Groundwater	10/24/2017 10:53:00 AM	10/24/2017	11/14/2017
N026661-006E	CW-04D-Q417	Groundwater	10/24/2017 10:53:00 AM	10/24/2017	11/14/2017
N026661-006F	CW-04D-Q417	Groundwater	10/24/2017 10:53:00 AM	10/24/2017	11/14/2017
N026661-007A	CW-04M-Q417	Groundwater	10/24/2017 10:01:00 AM	10/24/2017	11/14/2017
N026661-007B	CW-04M-Q417	Groundwater	10/24/2017 10:01:00 AM	10/24/2017	11/14/2017
N026661-007C	CW-04M-Q417	Groundwater	10/24/2017 10:01:00 AM	10/24/2017	11/14/2017
N026661-007D	CW-04M-Q417	Groundwater	10/24/2017 10:01:00 AM	10/24/2017	11/14/2017
N026661-007E	CW-04M-Q417	Groundwater	10/24/2017 10:01:00 AM	10/24/2017	11/14/2017
N026661-007F	CW-04M-Q417	Groundwater	10/24/2017 10:01:00 AM	10/24/2017	11/14/2017



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-001

Client Sample ID: CW-02D-Q417
Collection Date: 10/24/2017 2:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171025D	QC Batch: R118821				PrepDate		Analyst: LR
Specific Conductance	7300	0.10	0.10		umhos/cm	1	10/25/2017 11:30 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-002

Client Sample ID: MW-901-Q417
Collection Date: 10/24/2017 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171025D	QC Batch: R118821				PrepDate		Analyst: LR
Specific Conductance	7300	0.10	0.10		umhos/cm	1	10/25/2017 11:30 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-003

Client Sample ID: CW-02M-Q417
Collection Date: 10/24/2017 3:32:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171025D	QC Batch: R118821				PrepDate		Analyst: LR
Specific Conductance	7300	0.10	0.10		umhos/cm	1	10/25/2017 11:30 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-004

Client Sample ID: CW-03D-Q417
Collection Date: 10/24/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171025D	QC Batch: R118821				PrepDate		Analyst: LR
Specific Conductance	7400	0.10	0.10		umhos/cm	1	10/25/2017 11:30 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-005

Client Sample ID: CW-03M-Q417
Collection Date: 10/24/2017 12:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171025D	QC Batch: R118821				PrepDate		Analyst: LR
Specific Conductance	8000	0.10	0.10		umhos/cm	1	10/25/2017 11:30 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-006

Client Sample ID: CW-04D-Q417
Collection Date: 10/24/2017 10:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171025D	QC Batch: R118821			PrepDate			Analyst: LR
Specific Conductance	7300	0.10	0.10		umhos/cm	1	10/25/2017 11:30 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-007

Client Sample ID: CW-04M-Q417
Collection Date: 10/24/2017 10:01:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171025D	QC Batch: R118821				PrepDate		Analyst: LR
Specific Conductance	7200	0.10	0.10		umhos/cm	1	10/25/2017 11:30 AM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID N026661-001DDUP	SampType: DUP	TestCode: 120.1_WPGE	Units: umhos/cm	Prep Date:	RunNo: 118821						
Client ID: ZZZZZ	Batch ID: R118821	TestNo: EPA 120.1		Analysis Date: 10/25/2017	SeqNo: 2809455						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7310.000	0.10						7330	0.273	10	

Sample ID N026664-010ADUP	SampType: DUP	TestCode: 120.1_WPGE	Units: umhos/cm	Prep Date:	RunNo: 118821						
Client ID: ZZZZZ	Batch ID: R118821	TestNo: EPA 120.1		Analysis Date: 10/25/2017	SeqNo: 2809474						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	169400.000	0.10						168900	0.296	10	

Qualifiers:

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-001

Client Sample ID: CW-02D-Q417
Collection Date: 10/24/2017 2:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171025H	QC Batch: 64388			PrepDate	10/25/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4000	50	50	mg/L	1	10/25/2017 12:55 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-002

Client Sample ID: MW-901-Q417
Collection Date: 10/24/2017 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171025H	QC Batch: 64388				PrepDate	10/25/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	10/25/2017 12:55 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-003

Client Sample ID: CW-02M-Q417
Collection Date: 10/24/2017 3:32:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171025H	QC Batch: 64388				PrepDate	10/25/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	10/25/2017 12:55 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-004

Client Sample ID: CW-03D-Q417
Collection Date: 10/24/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	-----	------	-------	----	---------------

TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171025H	QC Batch: 64388			PrepDate	10/25/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4000	50	50	mg/L	1	10/25/2017 12:55 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: 14-Nov-17

ASSET Laboratories

CLIENT:	ARCADIS U.S., Inc. - California	Client Sample ID:	CW-03M-Q417
Lab Order:	N026661	Collection Date:	10/24/2017 12:38:00 PM
Project:	PG&E Topock - CMP, RC000753.801B	Matrix:	GROUNDWATER
Lab ID:	N026661-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171025H	QC Batch: 64388			PrepDate	10/25/2017		Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4500	50	50		mg/L	1	10/25/2017 12:55 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: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-006

Client Sample ID: CW-04D-Q417
Collection Date: 10/24/2017 10:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171025H	QC Batch: 64388				PrepDate	10/25/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	3900	50	50		mg/L	1	10/25/2017 12:55 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: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-007

Client Sample ID: CW-04M-Q417
Collection Date: 10/24/2017 10:01:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171025H	QC Batch: 64388			PrepDate	10/25/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4000	50	50	mg/L	1	10/25/2017 12:55 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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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-64388	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	10/25/2017	RunNo:	118825			
Client ID:	LCSW	Batch ID:	64388	TestNo:	SM2540C			Analysis Date:	10/25/2017	SeqNo:	2811065			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		953.000		10	1000	0		95.3	80	120				

Sample ID	MB-64388	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	10/25/2017	RunNo:	118825			
Client ID:	PBW	Batch ID:	64388	TestNo:	SM2540C			Analysis Date:	10/25/2017	SeqNo:	2811066			
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	N026661-005DDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	10/25/2017	RunNo:	118825			
Client ID:	ZZZZZ	Batch ID:	64388	TestNo:	SM2540C			Analysis Date:	10/25/2017	SeqNo:	2811075			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		4675.000		50						4455		4.82	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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-001

Client Sample ID: CW-02D-Q417
Collection Date: 10/24/2017 2:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171106A	QC Batch: 64416	PrepDate	10/27/2017	Analyst: CEI		
Aluminum	ND	2.7	50	µg/L	1	11/6/2017 11:49 AM
Boron	1000	38	100	µg/L	1	11/6/2017 11:49 AM
Calcium	87000	28	500	µg/L	1	11/6/2017 11:49 AM
Iron	ND	1.8	20	µg/L	1	11/6/2017 11:49 AM
Magnesium	4800	4.4	100	µg/L	1	11/6/2017 11:49 AM
Potassium	10000	38	500	µg/L	1	11/5/2017 04:42 PM
Sodium	1400000	1300	25000	µg/L	50	11/5/2017 04:47 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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-002

Client Sample ID: MW-901-Q417
Collection Date: 10/24/2017 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171106A	QC Batch: 64416	PrepDate	10/27/2017	Analyst: CEI		
Aluminum	ND	2.7	50	µg/L	1	11/6/2017 11:58 AM
Boron	1300	38	100	µg/L	1	11/6/2017 11:58 AM
Calcium	110000	28	500	µg/L	1	11/6/2017 11:58 AM
Iron	ND	1.8	20	µg/L	1	11/6/2017 11:58 AM
Magnesium	6100	4.4	100	µg/L	1	11/6/2017 11:58 AM
Potassium	11000	38	500	µg/L	1	11/5/2017 04:50 PM
Sodium	1500000	1300	25000	µg/L	50	11/5/2017 05:22 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-003

Client Sample ID: CW-02M-Q417
Collection Date: 10/24/2017 3:32:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171106A	QC Batch: 64416	PrepDate	10/27/2017	Analyst: CEI		
Aluminum	ND	2.7	50	µg/L	1	11/6/2017 12:04 PM
Boron	1100	38	100	µg/L	1	11/6/2017 12:04 PM
Calcium	120000	28	500	µg/L	1	11/6/2017 12:04 PM
Iron	ND	1.8	20	µg/L	1	11/6/2017 12:04 PM
Magnesium	8900	4.4	100	µg/L	1	11/6/2017 12:04 PM
Potassium	11000	38	500	µg/L	1	11/5/2017 05:39 PM
Sodium	1500000	1300	25000	µg/L	50	11/5/2017 05:44 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-004

Client Sample ID: CW-03D-Q417
Collection Date: 10/24/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171106A	QC Batch: 64416	PrepDate	10/27/2017	Analyst: CEI		
Aluminum	ND	2.7	50	µg/L	1	11/6/2017 12:10 PM
Boron	1000	38	100	µg/L	1	11/6/2017 12:10 PM
Calcium	70000	28	500	µg/L	1	11/6/2017 12:10 PM
Iron	ND	1.8	20	µg/L	1	11/6/2017 12:10 PM
Magnesium	4700	4.4	100	µg/L	1	11/6/2017 12:10 PM
Potassium	10000	38	500	µg/L	1	11/5/2017 05:54 PM
Sodium	1600000	1300	25000	µg/L	50	11/5/2017 05:59 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-005

Client Sample ID: CW-03M-Q417
Collection Date: 10/24/2017 12:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171106A	QC Batch: 64416	PrepDate	10/27/2017	Analyst: CEI		
Aluminum	ND	2.7	50	µg/L	1	11/6/2017 12:15 PM
Boron	1200	38	100	µg/L	1	11/6/2017 12:15 PM
Calcium	170000	28	500	µg/L	1	11/6/2017 12:15 PM
Iron	ND	1.8	20	µg/L	1	11/6/2017 12:15 PM
Magnesium	13000	4.4	100	µg/L	1	11/6/2017 12:15 PM
Potassium	12000	38	500	µg/L	1	11/5/2017 06:03 PM
Sodium	1600000	1300	25000	µg/L	50	11/5/2017 06:08 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-006

Client Sample ID: CW-04D-Q417
Collection Date: 10/24/2017 10:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171106A	QC Batch: 64416	PrepDate	10/27/2017	Analyst: CEI		
Aluminum	ND	2.7	50	µg/L	1	11/6/2017 12:21 PM
Boron	1000	38	100	µg/L	1	11/6/2017 12:21 PM
Calcium	120000	28	500	µg/L	1	11/6/2017 12:21 PM
Iron	ND	1.8	20	µg/L	1	11/6/2017 12:21 PM
Magnesium	7800	4.4	100	µg/L	1	11/6/2017 12:21 PM
Potassium	11000	38	500	µg/L	1	11/5/2017 06:11 PM
Sodium	1400000	1300	25000	µg/L	50	11/5/2017 06:16 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-007

Client Sample ID: CW-04M-Q417
Collection Date: 10/24/2017 10:01:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171106A	QC Batch: 64416	PrepDate	10/27/2017	Analyst: CEI		
Aluminum	ND	2.7	50	µg/L	1	11/6/2017 12:27 PM
Boron	1000	38	100	µg/L	1	11/6/2017 12:27 PM
Calcium	190000	28	500	µg/L	1	11/6/2017 12:27 PM
Iron	ND	1.8	20	µg/L	1	11/6/2017 12:27 PM
Magnesium	15000	4.4	100	µg/L	1	11/6/2017 12:27 PM
Potassium	13000	38	500	µg/L	1	11/5/2017 06:19 PM
Sodium	1500000	1300	25000	µg/L	50	11/5/2017 06:24 PM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPB

Sample ID MB-64416	SampType: MBLK	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: PBW	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822304
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 LCS2-64416	SampType: LCS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: LCSW	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822305
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	19728.875	500	20000	0	98.6 85 115
Sodium	19989.201	500	20000	0	99.9 85 115

Sample ID N026641-001B-MS2	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: ZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822329
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	34570.354	5000	20000	13950	103 75 125

Sample ID N026641-001B-MS2	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: ZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822330
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	1337836.766	25000	20000	1416000	-393 75 125 S

Sample ID N026661-002C-MS2	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: ZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822341
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	31989.216	500	20000	10730	106 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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPBB

Sample ID N026661-002C-MSD	SampType: MSD	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025						
Client ID: ZZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822342						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	31991.241	500	20000	10730	106	75	125	31990	0.00633	20	

Sample ID N026661-002C-MS2	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025						
Client ID: ZZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822346						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1562557.389	25000	20000	1536000	134	75	125				S

Sample ID N026661-002C-MSD	SampType: MSD	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025						
Client ID: ZZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822347						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1556293.056	25000	20000	1536000	102	75	125	1563000	0.402	20	

Sample ID MB-64416	SampType: MBLK	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119059						
Client ID: PBW	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/6/2017	SeqNo: 2824304						
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	4.686	20									
Magnesium	ND	100									

Sample ID LCS1-64416	SampType: LCS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119059						
Client ID: LCSW	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/6/2017	SeqNo: 2824305						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	10022.256	50	10000	0	100	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
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Calculations are based on raw values

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGPPB

Sample ID	LCS1-64416	SampType: LCS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119059
Client ID:	LCSW	Batch ID: 64416	TestNo: EPA 200.7	Analysis Date: 11/6/2017	SeqNo: 2824305	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Boron	4868.963	100	5000	0	97.4	85 115
Calcium	9697.709	500	10000	0	97.0	85 115
Iron	108.434	20	100.0	0	108	85 115
Magnesium	9920.171	100	10000	0	99.2	85 115

Sample ID	N026661-001C-MS1	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119059
Client ID:	ZZZZZ	Batch ID: 64416	TestNo: EPA 200.7	Analysis Date: 11/6/2017	SeqNo: 2824321	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	9719.981	50	10000	0	97.2	75 125
Boron	5864.074	100	5000	999.2	97.3	75 125
Calcium	100861.286	500	10000	86710	141	75 125 S
Iron	102.456	20	100.0	7.411	95.0	75 125
Magnesium	14005.502	100	10000	4773	92.3	75 125

Sample ID	N026661-001C-MSD	SampType: MSD	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119059
Client ID:	ZZZZZ	Batch ID: 64416	TestNo: EPA 200.7	Analysis Date: 11/6/2017	SeqNo: 2824322	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	9784.653	50	10000	0	97.8	75 125 9720 0.663 20
Boron	5881.103	100	5000	999.2	97.6	75 125 5864 0.290 20
Calcium	101455.571	500	10000	86710	147	75 125 100900 0.587 20 S
Iron	102.791	20	100.0	7.411	95.4	75 125 102.5 0.327 20
Magnesium	14115.325	100	10000	4773	93.4	75 125 14010 0.781 20

Sample ID	N026689-004B-MS1	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119059
Client ID:	ZZZZZ	Batch ID: 64416	TestNo: EPA 200.7	Analysis Date: 11/6/2017	SeqNo: 2824324	
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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPBB

Sample ID: N026689-004B-MS1	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119059						
Client ID: ZZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/6/2017	SeqNo: 2824324						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9767.135	50	10000	0	97.7	75	125				
Boron	5798.867	100	5000	1065	94.7	75	125				
Calcium	133561.065	500	10000	125300	82.7	75	125				
Iron	107.169	20	100.0	9.981	97.2	75	125				
Magnesium	32928.029	100	10000	24460	84.7	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 | |



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-001

Client Sample ID: CW-02D-Q417
Collection Date: 10/24/2017 2:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450	PrepDate	10/29/2017	Analyst: CEI		
Antimony	ND	0.031	0.50	µg/L	1	11/6/2017 03:43 AM
Arsenic	2.6	0.025	0.10	µg/L	1	11/6/2017 03:43 AM
Barium	14	0.070	1.0	µg/L	1	11/6/2017 03:43 AM
Beryllium	ND	0.22	2.5	µg/L	5	11/6/2017 03:48 AM
Cadmium	ND	0.047	0.50	µg/L	1	11/6/2017 03:43 AM
Cobalt	ND	0.026	0.50	µg/L	1	11/6/2017 03:43 AM
Copper	ND	0.26	1.0	µg/L	1	11/6/2017 03:43 AM
Lead	ND	0.18	5.0	µg/L	5	11/6/2017 03:48 AM
Manganese	1.9	0.056	0.50	µg/L	1	11/6/2017 03:43 AM
Molybdenum	12	0.039	0.50	µg/L	1	11/6/2017 03:43 AM
Nickel	ND	0.040	1.0	µg/L	1	11/6/2017 03:43 AM
Selenium	3.5	0.028	0.50	µg/L	1	11/6/2017 03:43 AM
Silver	ND	0.059	0.50	µg/L	1	11/6/2017 03:43 AM
Thallium	ND	0.15	2.5	µg/L	5	11/6/2017 03:48 AM
Vanadium	4.0	0.021	1.0	µg/L	1	11/6/2017 03:43 AM
Zinc	ND	0.27	10	µg/L	1	11/6/2017 03:43 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-002

Client Sample ID: MW-901-Q417
Collection Date: 10/24/2017 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450	PrepDate	10/29/2017	Analyst: CEI		
Antimony	ND	0.031	0.50	µg/L	1	11/6/2017 03:54 AM
Arsenic	2.5	0.025	0.10	µg/L	1	11/6/2017 03:54 AM
Barium	15	0.070	1.0	µg/L	1	11/6/2017 03:54 AM
Beryllium	ND	0.22	2.5	µg/L	5	11/6/2017 04:11 AM
Cadmium	ND	0.047	0.50	µg/L	1	11/6/2017 03:54 AM
Cobalt	ND	0.026	0.50	µg/L	1	11/6/2017 03:54 AM
Copper	ND	0.26	1.0	µg/L	1	11/6/2017 03:54 AM
Lead	ND	0.18	5.0	µg/L	5	11/6/2017 04:11 AM
Manganese	1.9	0.056	0.50	µg/L	1	11/6/2017 03:54 AM
Molybdenum	12	0.039	0.50	µg/L	1	11/6/2017 03:54 AM
Nickel	ND	0.040	1.0	µg/L	1	11/6/2017 03:54 AM
Selenium	3.5	0.028	0.50	µg/L	1	11/6/2017 03:54 AM
Silver	ND	0.059	0.50	µg/L	1	11/6/2017 03:54 AM
Thallium	ND	0.15	2.5	µg/L	5	11/6/2017 04:11 AM
Vanadium	4.1	0.021	1.0	µg/L	1	11/6/2017 03:54 AM
Zinc	ND	0.27	10	µg/L	1	11/6/2017 03:54 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-003

Client Sample ID: CW-02M-Q417
Collection Date: 10/24/2017 3:32:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450	PrepDate	10/29/2017	Analyst: CEI		
Antimony	ND	0.031	0.50	µg/L	1	11/6/2017 04:16 AM
Arsenic	1.8	0.025	0.10	µg/L	1	11/6/2017 04:16 AM
Barium	61	0.070	1.0	µg/L	1	11/6/2017 04:16 AM
Beryllium	ND	0.22	2.5	µg/L	5	11/6/2017 04:22 AM
Cadmium	ND	0.047	0.50	µg/L	1	11/6/2017 04:16 AM
Cobalt	ND	0.026	0.50	µg/L	1	11/6/2017 04:16 AM
Copper	ND	0.26	1.0	µg/L	1	11/6/2017 04:16 AM
Lead	ND	0.18	5.0	µg/L	5	11/6/2017 04:22 AM
Manganese	1.3	0.056	0.50	µg/L	1	11/6/2017 04:16 AM
Molybdenum	15	0.039	0.50	µg/L	1	11/6/2017 04:16 AM
Nickel	ND	0.040	1.0	µg/L	1	11/6/2017 04:16 AM
Selenium	3.2	0.028	0.50	µg/L	1	11/6/2017 04:16 AM
Silver	ND	0.059	0.50	µg/L	1	11/6/2017 04:16 AM
Thallium	ND	0.15	2.5	µg/L	5	11/6/2017 04:22 AM
Vanadium	3.6	0.021	1.0	µg/L	1	11/6/2017 04:16 AM
Zinc	ND	0.27	10	µg/L	1	11/6/2017 04:16 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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-004

Client Sample ID: CW-03D-Q417
Collection Date: 10/24/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450	PrepDate	10/29/2017	Analyst: CEI		
Antimony	ND	0.031	0.50	µg/L	1	11/6/2017 04:27 AM
Arsenic	1.4	0.025	0.10	µg/L	1	11/6/2017 04:27 AM
Barium	15	0.070	1.0	µg/L	1	11/6/2017 04:27 AM
Beryllium	ND	0.22	2.5	µg/L	5	11/6/2017 04:33 AM
Cadmium	ND	0.047	0.50	µg/L	1	11/6/2017 04:27 AM
Cobalt	ND	0.026	0.50	µg/L	1	11/6/2017 04:27 AM
Copper	ND	0.26	1.0	µg/L	1	11/6/2017 04:27 AM
Lead	ND	0.18	5.0	µg/L	5	11/6/2017 04:33 AM
Manganese	2.1	0.056	0.50	µg/L	1	11/6/2017 04:27 AM
Molybdenum	15	0.039	0.50	µg/L	1	11/6/2017 04:27 AM
Nickel	ND	0.040	1.0	µg/L	1	11/6/2017 04:27 AM
Selenium	3.3	0.028	0.50	µg/L	1	11/6/2017 04:27 AM
Silver	ND	0.059	0.50	µg/L	1	11/6/2017 04:27 AM
Thallium	ND	0.15	2.5	µg/L	5	11/6/2017 04:33 AM
Vanadium	2.6	0.021	1.0	µg/L	1	11/6/2017 04:27 AM
Zinc	ND	0.27	10	µg/L	1	11/6/2017 04:27 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-005

Client Sample ID: CW-03M-Q417
Collection Date: 10/24/2017 12:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450	PrepDate	10/29/2017	Analyst: CEI		
Antimony	ND	0.031	0.50	µg/L	1	11/6/2017 04:38 AM
Arsenic	1.2	0.025	0.10	µg/L	1	11/6/2017 04:38 AM
Barium	40	0.070	1.0	µg/L	1	11/6/2017 04:38 AM
Beryllium	ND	0.22	2.5	µg/L	5	11/6/2017 04:44 AM
Cadmium	ND	0.047	0.50	µg/L	1	11/6/2017 04:38 AM
Cobalt	ND	0.026	0.50	µg/L	1	11/6/2017 04:38 AM
Copper	ND	0.26	1.0	µg/L	1	11/6/2017 04:38 AM
Lead	ND	0.18	5.0	µg/L	5	11/6/2017 04:44 AM
Manganese	1.1	0.056	0.50	µg/L	1	11/6/2017 04:38 AM
Molybdenum	26	0.039	0.50	µg/L	1	11/6/2017 04:38 AM
Nickel	ND	0.040	1.0	µg/L	1	11/6/2017 04:38 AM
Selenium	2.0	0.028	0.50	µg/L	1	11/6/2017 04:38 AM
Silver	ND	0.059	0.50	µg/L	1	11/6/2017 04:38 AM
Thallium	ND	0.15	2.5	µg/L	5	11/6/2017 04:44 AM
Vanadium	2.8	0.021	1.0	µg/L	1	11/6/2017 04:38 AM
Zinc	ND	0.27	10	µg/L	1	11/6/2017 04:38 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-006

Client Sample ID: CW-04D-Q417
Collection Date: 10/24/2017 10:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450	PrepDate	10/29/2017	Analyst: CEI		
Antimony	ND	0.031	0.50	µg/L	1	11/6/2017 04:49 AM
Arsenic	2.7	0.025	0.10	µg/L	1	11/6/2017 04:49 AM
Barium	17	0.070	1.0	µg/L	1	11/6/2017 04:49 AM
Beryllium	ND	0.22	2.5	µg/L	5	11/6/2017 04:55 AM
Cadmium	ND	0.047	0.50	µg/L	1	11/6/2017 04:49 AM
Cobalt	ND	0.026	0.50	µg/L	1	11/6/2017 04:49 AM
Copper	ND	0.26	1.0	µg/L	1	11/6/2017 04:49 AM
Lead	ND	0.18	5.0	µg/L	5	11/6/2017 04:55 AM
Manganese	1.5	0.056	0.50	µg/L	1	11/6/2017 04:49 AM
Molybdenum	18	0.039	0.50	µg/L	1	11/6/2017 04:49 AM
Nickel	ND	0.040	1.0	µg/L	1	11/6/2017 04:49 AM
Selenium	3.5	0.028	0.50	µg/L	1	11/6/2017 04:49 AM
Silver	ND	0.059	0.50	µg/L	1	11/6/2017 04:49 AM
Thallium	ND	0.15	2.5	µg/L	5	11/6/2017 04:55 AM
Vanadium	3.2	0.021	1.0	µg/L	1	11/6/2017 04:49 AM
Zinc	ND	0.27	10	µg/L	1	11/6/2017 04:49 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-007

Client Sample ID: CW-04M-Q417
Collection Date: 10/24/2017 10:01:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450	PrepDate	10/29/2017	Analyst: CEI		
Antimony	ND	0.031	0.50	µg/L	1	11/6/2017 05:01 AM
Arsenic	2.0	0.025	0.10	µg/L	1	11/6/2017 05:01 AM
Barium	95	0.070	1.0	µg/L	1	11/6/2017 05:01 AM
Beryllium	ND	0.22	2.5	µg/L	5	11/6/2017 05:34 AM
Cadmium	ND	0.047	0.50	µg/L	1	11/6/2017 05:01 AM
Cobalt	ND	0.026	0.50	µg/L	1	11/6/2017 05:01 AM
Copper	ND	0.26	1.0	µg/L	1	11/6/2017 05:01 AM
Lead	ND	0.18	5.0	µg/L	5	11/6/2017 05:34 AM
Manganese	0.60	0.056	0.50	µg/L	1	11/6/2017 05:01 AM
Molybdenum	9.6	0.039	0.50	µg/L	1	11/6/2017 05:01 AM
Nickel	ND	0.040	1.0	µg/L	1	11/6/2017 05:01 AM
Selenium	2.9	0.028	0.50	µg/L	1	11/6/2017 05:01 AM
Silver	ND	0.059	0.50	µg/L	1	11/6/2017 05:01 AM
Thallium	ND	0.15	2.5	µg/L	5	11/6/2017 05:34 AM
Vanadium	3.4	0.021	1.0	µg/L	1	11/6/2017 05:01 AM
Zinc	ND	0.27	10	µg/L	1	11/6/2017 05:01 AM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID MB-64450	SampType: MBLK	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046						
Client ID: PBW	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823198						
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									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	ND	0.50									
Thallium	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID LCS-64450	SampType: LCS	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046						
Client ID: LCSW	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823199						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.505	0.50	10.00	0	95.0	85	115				
Arsenic	9.706	0.10	10.00	0	97.1	85	115				
Barium	9.611	1.0	10.00	0	96.1	85	115				
Beryllium	9.075	0.50	10.00	0	90.8	85	115				
Cadmium	9.554	0.50	10.00	0	95.5	85	115				
Cobalt	9.980	0.50	10.00	0	99.8	85	115				
Copper	11.185	1.0	10.00	0	112	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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	LCS-64450	SampType:	LCS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	10/29/2017	RunNo:	119046
Client ID:	LCSW	Batch ID:	64450	TestNo:	EPA 200.8			Analysis Date:	11/6/2017	SeqNo:	2823199
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	9.861	1.0	10.00	0	98.6	85	115				
Manganese	91.393	0.50	100.0	0	91.4	85	115				
Molybdenum	9.390	0.50	10.00	0	93.9	85	115				
Nickel	10.721	1.0	10.00	0	107	85	115				
Selenium	9.676	0.50	10.00	0	96.8	85	115				
Silver	10.562	0.50	10.00	0	106	85	115				
Thallium	10.407	0.50	10.00	0	104	85	115				
Vanadium	10.322	1.0	10.00	0	103	85	115				
Zinc	101.716	10	100.0	0	102	85	115				

Sample ID	N026641-001B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	10/29/2017	RunNo:	119046
Client ID:	ZZZZZZ	Batch ID:	64450	TestNo:	EPA 200.8			Analysis Date:	11/6/2017	SeqNo:	2823205
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.638	0.50	10.00	0	96.4	75	125				
Arsenic	11.681	0.10	10.00	1.787	98.9	75	125				
Barium	72.981	1.0	10.00	64.12	88.6	75	125				
Cadmium	8.991	0.50	10.00	0	89.9	75	125				
Cobalt	8.187	0.50	10.00	0	81.9	75	125				
Copper	4.951	1.0	10.00	0	49.5	75	125				S
Manganese	90.132	0.50	100.0	0	90.1	75	125				
Molybdenum	29.987	0.50	10.00	18.86	111	75	125				
Nickel	9.006	1.0	10.00	0	90.1	75	125				
Selenium	12.874	0.50	10.00	3.310	95.6	75	125				
Silver	10.489	0.50	10.00	0	105	75	125				
Vanadium	12.549	1.0	10.00	2.791	97.6	75	125				
Zinc	111.980	10	100.0	0	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



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"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID N026641-001B-MS	SampType: MS	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046						
Client ID: ZZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823206						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	11.038	2.5	10.00	0	110	75	125				
Lead	10.289	5.0	10.00	0	103	75	125				
Thallium	9.033	2.5	10.00	0	90.3	75	125				

Sample ID N026641-001B-MSD	SampType: MSD	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046						
Client ID: ZZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823207						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.706	0.50	10.00	0	97.1	75	125	9.638	0.697	20	
Arsenic	11.758	0.10	10.00	1.787	99.7	75	125	11.68	0.654	20	
Barium	72.702	1.0	10.00	64.12	85.8	75	125	72.98	0.382	20	
Cadmium	8.887	0.50	10.00	0	88.9	75	125	8.991	1.17	20	
Cobalt	8.171	0.50	10.00	0	81.7	75	125	8.187	0.186	20	
Copper	5.180	1.0	10.00	0	51.8	75	125	4.951	4.52	20	S
Manganese	89.961	0.50	100.0	0	90.0	75	125	90.13	0.190	20	
Molybdenum	30.140	0.50	10.00	18.86	113	75	125	29.99	0.508	20	
Nickel	9.220	1.0	10.00	0	92.2	75	125	9.006	2.35	20	
Selenium	13.689	0.50	10.00	3.310	104	75	125	12.87	6.14	20	
Silver	10.392	0.50	10.00	0	104	75	125	10.49	0.923	20	
Vanadium	12.554	1.0	10.00	2.791	97.6	75	125	12.55	0.0358	20	
Zinc	110.323	10	100.0	0	110	75	125	112.0	1.49	20	

Sample ID N026641-001B-MSD	SampType: MSD	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046						
Client ID: ZZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823210						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	10.766	2.5	10.00	0	108	75	125	11.04	2.50	20	
Lead	10.190	5.0	10.00	0	102	75	125	10.29	0.968	20	
Thallium	8.245	2.5	10.00	0	82.5	75	125	9.033	9.12	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: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	SampType: MS	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046						
Client ID: ZZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823238						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.635	0.50	10.00	0	96.3	75	125				
Arsenic	11.635	0.10	10.00	1.983	96.5	75	125				
Barium	105.419	1.0	10.00	95.49	99.3	75	125				
Cadmium	8.901	0.50	10.00	0	89.0	75	125				
Cobalt	8.467	0.50	10.00	0	84.7	75	125				
Copper	4.843	1.0	10.00	0	48.4	75	125				S
Manganese	93.712	0.50	100.0	0.5997	93.1	75	125				
Molybdenum	20.255	0.50	10.00	9.574	107	75	125				
Nickel	9.109	1.0	10.00	0	91.1	75	125				
Selenium	11.943	0.50	10.00	2.882	90.6	75	125				
Silver	10.213	0.50	10.00	0	102	75	125				
Vanadium	13.624	1.0	10.00	3.441	102	75	125				
Zinc	109.600	10	100.0	0	110	75	125				

Sample ID	SampType: MS	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046						
Client ID: ZZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823239						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	10.436	2.5	10.00	0	104	75	125				
Lead	9.905	5.0	10.00	0	99.0	75	125				
Thallium	8.397	2.5	10.00	0	84.0	75	125				

Qualifiers:

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

Calculations are based on raw values

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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-001

Client Sample ID: CW-02D-Q417
Collection Date: 10/24/2017 2:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171026A	QC Batch: R118830				PrepDate		Analyst: RAB
Hexavalent Chromium	0.26	0.033	0.20		µg/L	1	10/26/2017 09:49 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	ND	0.019	1.0		µg/L	1	11/6/2017 03:43 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-002

Client Sample ID: MW-901-Q417
Collection Date: 10/24/2017 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171026A	QC Batch: R118830				PrepDate		Analyst: RAB
Hexavalent Chromium	0.23	0.033	0.20		µg/L	1	10/26/2017 10:08 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	ND	0.019	1.0		µg/L	1	11/6/2017 03:54 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-003

Client Sample ID: CW-02M-Q417
Collection Date: 10/24/2017 3:32:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171026A	QC Batch: R118830				PrepDate		Analyst: RAB
Hexavalent Chromium	1.2	0.033	0.20		µg/L	1	10/26/2017 10:26 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	1.4	0.019	1.0		µg/L	1	11/6/2017 04:16 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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-004

Client Sample ID: CW-03D-Q417
Collection Date: 10/24/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171026A	QC Batch: R118830				PrepDate		Analyst: RAB
Hexavalent Chromium	0.26	0.033	0.20		µg/L	1	10/26/2017 10:45 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	ND	0.019	1.0		µg/L	1	11/6/2017 04:27 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-005

Client Sample ID: CW-03M-Q417
Collection Date: 10/24/2017 12:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171026A	QC Batch: R118830				PrepDate		Analyst: RAB
Hexavalent Chromium	4.9	0.033	0.20		µg/L	1	10/26/2017 12:20 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	4.6	0.019	1.0		µg/L	1	11/6/2017 04:38 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-006

Client Sample ID: CW-04D-Q417
Collection Date: 10/24/2017 10:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171026A	QC Batch: R118830				PrepDate		Analyst: RAB
Hexavalent Chromium	0.39	0.033	0.20		µg/L	1	10/26/2017 12:39 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	ND	0.019	1.0		µg/L	1	11/6/2017 04:49 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-007

Client Sample ID: CW-04M-Q417
Collection Date: 10/24/2017 10:01:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC

EPA 218.6

RunID: NV00922-IC7_171026A	QC Batch: R118830				PrepDate		Analyst: RAB
Hexavalent Chromium	1.7	0.033	0.20		µg/L	1	10/26/2017 01:17 PM

DISSOLVED METALS BY ICP-MS

EPA 200.8

RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	1.7	0.019	1.0		µg/L	1	11/6/2017 05:01 AM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID MB-64450	SampType: MBLK	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: PBW	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823084
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium	ND	1.0			
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Sample ID LCS-64450	SampType: LCS	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: LCSW	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823085
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium	10.449	1.0	10.00	0	104 85 115
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Sample ID N026641-001B-MS	SampType: MS	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: ZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823091
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium	10.137	1.0	10.00	1.001	91.4 75 125
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Sample ID N026641-001B-MSD	SampType: MSD	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: ZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823093
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium	10.018	1.0	10.00	1.001	90.2 75 125 10.14 1.18 20
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Sample ID N026661-007C-MS	SampType: MS	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: ZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823124
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium	11.139	1.0	10.00	1.744	94.0 75 125
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Qualifiers:

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: MB-R118830	SampType: MBLK	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: PBW	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809820						
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-R118830	SampType: LCS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: LCSW	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809821						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 5.099 0.20 5.000 0 102 90 110

Sample ID: N026661-001AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809823						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 1.313 0.20 1.000 0.2605 105 90 110

Sample ID: N026661-002AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809825						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 1.267 0.20 1.000 0.2327 103 90 110

Sample ID: N026661-003AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809827						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 2.281 0.20 1.000 1.228 105 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 | |

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID N026661-004AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809829						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	1.251	0.20	1.000	0.2619	98.9	90	110				
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Sample ID N026661-005AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809833						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	10.032	0.20	5.000	4.885	103	90	110				
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Sample ID N026661-006AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809835						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	1.405	0.20	1.000	0.3880	102	90	110				
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Sample ID N026661-007AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809839						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	2.765	0.20	1.000	1.713	105	90	110				
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Sample ID N026661-001AMSD	SampType: MSD	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809840						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	1.344	0.20	1.000	0.2605	108	90	110	1.313	2.36	20	
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Qualifiers:

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

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID N026689-001AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809842						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.328	0.20	1.000	0.3498	97.8	90	110				

Sample ID N026689-002AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809844						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.883	0.20	1.000	0.8537	103	90	110				

Sample ID N026689-003AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809846						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.327	0.20	1.000	0.2719	105	90	110				

Sample ID N026689-004AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809850						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.251	0.20	1.000	0.2506	100	90	110				

Sample ID N026689-005AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809852						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.667	0.20	1.000	0.5766	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: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID N026689-006AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809854						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.324	0.20	1.000	0.2945	103	90	110				

Sample ID N026689-007AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809856						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.466	0.20	1.000	0.4456	102	90	110				

Sample ID N026689-008AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809858						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.049	0.20	1.000	0	105	90	110				

Sample ID N026690-001ADUP	SampType: DUP	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809862						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	83.543	2.0						81.76	2.16	20	

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-001

Client Sample ID: CW-02D-Q417
Collection Date: 10/24/2017 2:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171025E	QC Batch: R118822				PrepDate		Analyst: LR
Turbidity	0.25	0.10	0.10		NTU	1	10/25/2017 03:45 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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-002

Client Sample ID: MW-901-Q417
Collection Date: 10/24/2017 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171025E	QC Batch: R118822				PrepDate		Analyst: LR
Turbidity	0.30	0.10	0.10		NTU	1	10/25/2017 03:45 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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-003

Client Sample ID: CW-02M-Q417
Collection Date: 10/24/2017 3:32:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
SM 2130B							
RunID: NV00922-WC_171025E	QC Batch: R118822		PrepDate		Analyst: LR		
Turbidity	0.30	0.10	0.10		NTU	1	10/25/2017 03:45 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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

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CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-004

Client Sample ID: CW-03D-Q417
Collection Date: 10/24/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171025E	QC Batch: R118822				PrepDate		Analyst: LR
Turbidity	0.21	0.10	0.10		NTU	1	10/25/2017 03:45 PM

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

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-005

Client Sample ID: CW-03M-Q417
Collection Date: 10/24/2017 12:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171025E	QC Batch: R118822				PrepDate		Analyst: LR
Turbidity	0.21	0.10	0.10		NTU	1	10/25/2017 03:45 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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-006

Client Sample ID: CW-04D-Q417
Collection Date: 10/24/2017 10:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171025E	QC Batch: R118822				PrepDate		Analyst: LR
Turbidity	0.20	0.10	0.10		NTU	1	10/25/2017 03:45 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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-007

Client Sample ID: CW-04M-Q417
Collection Date: 10/24/2017 10:01:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171025E	QC Batch: R118822				PrepDate		Analyst: LR
Turbidity	0.28	0.10	0.10		NTU	1	10/25/2017 03:45 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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2130_W

Sample ID MB-R118822	SampType: MBLK	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 118822						
Client ID: PBW	Batch ID: R118822	TestNo: SM 2130B		Analysis Date: 10/25/2017	SeqNo: 2809477						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Turbidity	ND	0.10									
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Sample ID N026661-004DDUP	SampType: DUP	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 118822						
Client ID: ZZZZZ	Batch ID: R118822	TestNo: SM 2130B		Analysis Date: 10/25/2017	SeqNo: 2809482						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Turbidity	0.210	0.10						0.2100	0	30	
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Qualifiers:

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

Calculations are based on raw values



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-001

Client Sample ID: CW-02D-Q417
Collection Date: 10/24/2017 2:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ALKALINITY, SPECIATED

SM 2320 B

RunID: NV00922-WC_171027B	QC Batch: R118856				PrepDate		Analyst: LR
Alkalinity, Total (As CaCO3)	65	1.2	5.0		mg/L	1	10/27/2017 01:30 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-002

Client Sample ID: MW-901-Q417
Collection Date: 10/24/2017 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ALKALINITY, SPECIATED

SM 2320 B

RunID: NV00922-WC_171027B	QC Batch: R118856				PrepDate		Analyst: LR
Alkalinity, Total (As CaCO3)	65	1.2	5.0		mg/L	1	10/27/2017 01:30 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-003

Client Sample ID: CW-02M-Q417
Collection Date: 10/24/2017 3:32:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ALKALINITY, SPECIATED

SM 2320 B

RunID: NV00922-WC_171027B	QC Batch: R118856				PrepDate		Analyst: LR
Alkalinity, Total (As CaCO3)	58	1.2	5.0		mg/L	1	10/27/2017 01:30 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-004

Client Sample ID: CW-03D-Q417
Collection Date: 10/24/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ALKALINITY, SPECIATED

SM 2320 B

RunID: NV00922-WC_171027B	QC Batch: R118856				PrepDate		Analyst: LR
Alkalinity, Total (As CaCO3)	63	1.2	5.0		mg/L	1	10/27/2017 01:30 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-005

Client Sample ID: CW-03M-Q417
Collection Date: 10/24/2017 12:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ALKALINITY, SPECIATED

SM 2320 B

RunID: NV00922-WC_171027B	QC Batch: R118856				PrepDate		Analyst: LR
Alkalinity, Total (As CaCO3)	52	1.2	5.0		mg/L	1	10/27/2017 01:30 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-006

Client Sample ID: CW-04D-Q417
Collection Date: 10/24/2017 10:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ALKALINITY, SPECIATED

SM 2320 B

RunID: NV00922-WC_171027B	QC Batch: R118856				PrepDate		Analyst: LR
Alkalinity, Total (As CaCO3)	61	1.2	5.0		mg/L	1	10/27/2017 01:30 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-007

Client Sample ID: CW-04M-Q417
Collection Date: 10/24/2017 10:01:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ALKALINITY, SPECIATED

SM 2320 B

RunID: NV00922-WC_171027B	QC Batch: R118856				PrepDate		Analyst: LR
Alkalinity, Total (As CaCO3)	56	1.2	5.0		mg/L	1	10/27/2017 01:30 PM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	LCS-R118856	SampType:	LCS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	118856			
Client ID:	LCSW	Batch ID:	R118856	TestNo:	SM 2320 B			Analysis Date:	10/27/2017	SeqNo:	2811407			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)		97.534		5.0	100.0	0		97.5	85	115				

Sample ID	MB-R118856	SampType:	MBLK	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	118856			
Client ID:	PBW	Batch ID:	R118856	TestNo:	SM 2320 B			Analysis Date:	10/27/2017	SeqNo:	2811408			
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	N026661-001DDUP	SampType:	DUP	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	118856			
Client ID:	ZZZZZ	Batch ID:	R118856	TestNo:	SM 2320 B			Analysis Date:	10/27/2017	SeqNo:	2811413			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)		62.780		5.0							65.02	3.51	30	

Sample ID	N026662-001CMS	SampType:	MS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	118856			
Client ID:	ZZZZZ	Batch ID:	R118856	TestNo:	SM 2320 B			Analysis Date:	10/27/2017	SeqNo:	2811421			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)		179.372		5.0	100.0	82.96		96.4	75	125				

Sample ID	N026662-001CMSD	SampType:	MSD	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	118856			
Client ID:	ZZZZZ	Batch ID:	R118856	TestNo:	SM 2320 B			Analysis Date:	10/27/2017	SeqNo:	2811422			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)		179.372		5.0	100.0	82.96		96.4	75	125	179.4	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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-001

Client Sample ID: CW-02D-Q417
Collection Date: 10/24/2017 2:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE

EPA 245.1

RunID: NV00922-AA1_171027A	QC Batch: 64406			PrepDate	10/26/2017		Analyst: MG
Mercury	ND	0.087	0.20		µg/L	1	10/27/2017 10:31 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-002

Client Sample ID: MW-901-Q417
Collection Date: 10/24/2017 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE

EPA 245.1

RunID: NV00922-AA1_171027A	QC Batch: 64406	PrepDate	10/26/2017	Analyst: MG
Mercury	ND	0.087	0.20	µg/L
				1
				10/27/2017 10:34 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-003

Client Sample ID: CW-02M-Q417
Collection Date: 10/24/2017 3:32:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE

EPA 245.1

RunID: NV00922-AA1_171027A	QC Batch: 64406			PrepDate	10/26/2017		Analyst: MG
Mercury	ND	0.087	0.20		µg/L	1	10/27/2017 10:36 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-004

Client Sample ID: CW-03D-Q417
Collection Date: 10/24/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE

EPA 245.1

RunID: NV00922-AA1_171027A	QC Batch: 64406			PrepDate	10/26/2017	Analyst: MG
Mercury	ND	0.087	0.20	µg/L	1	10/27/2017 10:45 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-005

Client Sample ID: CW-03M-Q417
Collection Date: 10/24/2017 12:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE

EPA 245.1

RunID: NV00922-AA1_171027A	QC Batch: 64406			PrepDate	10/26/2017		Analyst: MG
Mercury	ND	0.087	0.20		µg/L	1	10/27/2017 10:47 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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-006

Client Sample ID: CW-04D-Q417
Collection Date: 10/24/2017 10:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE

EPA 245.1

RunID: NV00922-AA1_171027A	QC Batch: 64406			PrepDate	10/26/2017		Analyst: MG
Mercury	ND	0.087	0.20		µg/L	1	10/27/2017 10:50 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-007

Client Sample ID: CW-04M-Q417
Collection Date: 10/24/2017 10:01:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE

EPA 245.1

RunID: NV00922-AA1_171027A	QC Batch: 64406			PrepDate	10/26/2017		Analyst: MG
Mercury	ND	0.087	0.20		µg/L	1	10/27/2017 10:53 AM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_WD

Sample ID MB-64406	SampType: MBLK	TestCode: 245.1_WD	Units: µg/L	Prep Date: 10/26/2017	RunNo: 118854
Client ID: PBW	Batch ID: 64406	TestNo: EPA 245.1		Analysis Date: 10/27/2017	SeqNo: 2819457
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury	ND	0.20			
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Sample ID LCS-64406	SampType: LCS	TestCode: 245.1_WD	Units: µg/L	Prep Date: 10/26/2017	RunNo: 118854
Client ID: LCSW	Batch ID: 64406	TestNo: EPA 245.1		Analysis Date: 10/27/2017	SeqNo: 2819458
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury	4.701	0.20	5.000	0	94.0 85 115
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Sample ID N026645-001G-MS	SampType: MS	TestCode: 245.1_WD	Units: µg/L	Prep Date: 10/26/2017	RunNo: 118854
Client ID: ZZZZZ	Batch ID: 64406	TestNo: EPA 245.1		Analysis Date: 10/27/2017	SeqNo: 2819459
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury	4.885	0.20	5.000	0	97.7 75 125
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Sample ID N026645-001G-MSD	SampType: MSD	TestCode: 245.1_WD	Units: µg/L	Prep Date: 10/26/2017	RunNo: 118854
Client ID: ZZZZZ	Batch ID: 64406	TestNo: EPA 245.1		Analysis Date: 10/27/2017	SeqNo: 2819460
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury	4.846	0.20	5.000	0	96.9 75 125 4.885 0.809 20
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Qualifiers:

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-001

Client Sample ID: CW-02D-Q417
Collection Date: 10/24/2017 2:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Chloride	2200	4.6	250		mg/L	500	10/25/2017 03:10 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Fluoride	1.8	0.013	0.20		mg/L	2	10/25/2017 08:58 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Sulfate	470	1.1	25		mg/L	50	10/25/2017 06:28 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-002

Client Sample ID: MW-901-Q417
Collection Date: 10/24/2017 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ANIONS BY ION CHROMATOGRAPHY

EPA 300.0

RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Chloride	2100	4.6	250		mg/L	500	10/25/2017 04:26 PM

ANIONS BY ION CHROMATOGRAPHY

EPA 300.0

RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Fluoride	1.8	0.013	0.20		mg/L	2	10/25/2017 09:13 AM

ANIONS BY ION CHROMATOGRAPHY

EPA 300.0

RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Sulfate	480	1.1	25		mg/L	50	10/25/2017 07:45 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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-003

Client Sample ID: CW-02M-Q417
Collection Date: 10/24/2017 3:32:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Chloride	2200	4.6	250		mg/L	500	10/25/2017 04:41 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Fluoride	3.1	0.032	0.50		mg/L	5	10/25/2017 09:29 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Sulfate	500	1.1	25		mg/L	50	10/25/2017 08:00 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-004

Client Sample ID: CW-03D-Q417
Collection Date: 10/24/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ANIONS BY ION CHROMATOGRAPHY

EPA 300.0

RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Chloride	2100	4.6	250		mg/L	500	10/25/2017 04:57 PM

ANIONS BY ION CHROMATOGRAPHY

EPA 300.0

RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Fluoride	2.7	0.032	0.50		mg/L	5	10/25/2017 09:44 AM

ANIONS BY ION CHROMATOGRAPHY

EPA 300.0

RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Sulfate	480	1.1	25		mg/L	50	10/25/2017 07:14 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-005

Client Sample ID: CW-03M-Q417
Collection Date: 10/24/2017 12:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Chloride	2400	4.6	250		mg/L	500	10/25/2017 03:55 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Fluoride	3.5	0.032	0.50		mg/L	5	10/25/2017 09:59 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Sulfate	500	1.1	25		mg/L	50	10/25/2017 08:16 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-006

Client Sample ID: CW-04D-Q417
Collection Date: 10/24/2017 10:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ANIONS BY ION CHROMATOGRAPHY

EPA 300.0

RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Chloride	2100	4.6	250		mg/L	500	10/25/2017 05:12 PM

ANIONS BY ION CHROMATOGRAPHY

EPA 300.0

RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Fluoride	3.2	0.032	0.50		mg/L	5	10/25/2017 10:15 AM

ANIONS BY ION CHROMATOGRAPHY

EPA 300.0

RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Sulfate	480	1.1	25		mg/L	50	10/25/2017 08:31 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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-007

Client Sample ID: CW-04M-Q417
Collection Date: 10/24/2017 10:01:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Chloride	2200	4.6	250		mg/L	500	10/25/2017 05:27 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Fluoride	2.3	0.032	0.50		mg/L	5	10/25/2017 10:30 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171025A	QC Batch: R118813				PrepDate		Analyst: RAB
Sulfate	480	1.1	25		mg/L	50	10/25/2017 09:17 PM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R118813_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	PBW	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2809890			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		ND		0.50										
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Sample ID	LCS-R118813_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	LCSW	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2809891			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		1.981		0.50	2.000	0		99.0	90	110				
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Sample ID	N026661-001DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	ZZZZZ	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2809897			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		3225.800		250	1000	2156		107	80	120				
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Sample ID	N026661-001DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	ZZZZZ	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2809898			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		3212.700		250	1000	2156		106	80	120	3226	0.407	20	
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Sample ID	N026661-005DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	ZZZZZ	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2809900			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		2433.200		250							2423	0.410	20	
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Qualifiers:

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPG

Sample ID	MB-R118813_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	PBW	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2808745			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride ND 0.10

Sample ID	LCS-R118813_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	LCSW	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2808746			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 1.248 0.10 1.250 0 99.8 90 110

Sample ID	N026661-003DMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	ZZZZZZ	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2808756			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 9.471 0.50 6.250 3.066 102 80 120

Sample ID	N026661-003DMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	ZZZZZZ	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2808757			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 9.182 0.50 6.250 3.066 97.8 80 120 9.471 3.10 20

Sample ID	N026661-004DDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	ZZZZZZ	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2808758			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 2.686 0.50 2.694 0.316 20

Qualifiers:

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

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID N026661-006DMS	SampType: MS	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 118813						
Client ID: ZZZZZZ	Batch ID: R118813	TestNo: EPA 300.0		Analysis Date: 10/25/2017	SeqNo: 2808759						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	9.412	0.50	6.250	3.150	100	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 | |



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"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R118813_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	PBW	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2808798			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate		ND		0.50										
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Sample ID	LCS-R118813_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	LCSW	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2808799			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate		3.821		0.50	4.000	0		95.5	90	110				
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Sample ID	N026661-001DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	ZZZZZ	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2808809			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate		671.975		25	200.0	472.6		99.7	80	120				
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Sample ID	N026661-001DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	ZZZZZ	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2808810			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate		671.600		25	200.0	472.6		99.5	80	120	672.0	0.0558	20	
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Sample ID	N026661-004DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	118813			
Client ID:	ZZZZZ	Batch ID:	R118813	TestNo:	EPA 300.0			Analysis Date:	10/25/2017	SeqNo:	2808812			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate		479.185		25							481.6	0.507	20	
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Qualifiers:

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

Calculations are based on raw values

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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-001

Client Sample ID: CW-02D-Q417
Collection Date: 10/24/2017 2:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171026B	QC Batch: R118817				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.8	0.16	0.25		mg/L	5	10/26/2017

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-002

Client Sample ID: MW-901-Q417
Collection Date: 10/24/2017 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171026B	QC Batch: R118817				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.9	0.16	0.25		mg/L	5	10/26/2017

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-003

Client Sample ID: CW-02M-Q417
Collection Date: 10/24/2017 3:32:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171026B	QC Batch: R118817				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.9	0.16	0.25		mg/L	5	10/26/2017

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-004

Client Sample ID: CW-03D-Q417
Collection Date: 10/24/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171026B	QC Batch: R118817				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.8	0.16	0.25		mg/L	5	10/26/2017

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-005

Client Sample ID: CW-03M-Q417
Collection Date: 10/24/2017 12:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171026B	QC Batch: R118817				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.4	0.16	0.25		mg/L	5	10/26/2017

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-006

Client Sample ID: CW-04D-Q417
Collection Date: 10/24/2017 10:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171026B	QC Batch: R118817				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.9	0.16	0.25		mg/L	5	10/26/2017

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-007

Client Sample ID: CW-04M-Q417
Collection Date: 10/24/2017 10:01:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171026B	QC Batch: R118817				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.8	0.16	0.25		mg/L	5	10/26/2017

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID MB-R118817	SampType: MBLK	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118817
Client ID: PBW	Batch ID: R118817	TestNo: SM4500-NO3		Analysis Date: 10/26/2017	SeqNo: 2809394
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-R118817	SampType: LCS	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118817
Client ID: LCSW	Batch ID: R118817	TestNo: SM4500-NO3		Analysis Date: 10/26/2017	SeqNo: 2809395
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	0.498	0.050	0.5000	0	99.7 85 115

Sample ID N026661-001EDUP	SampType: DUP	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118817
Client ID: ZZZZZ	Batch ID: R118817	TestNo: SM4500-NO3		Analysis Date: 10/26/2017	SeqNo: 2809397
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	3.002	0.25			2.776 7.82 20

Sample ID N026661-004EMS	SampType: MS	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118817
Client ID: ZZZZZ	Batch ID: R118817	TestNo: SM4500-NO3		Analysis Date: 10/26/2017	SeqNo: 2809403
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	5.260	0.25	2.500	2.845	96.6 75 125

Sample ID N026661-004EMSD	SampType: MSD	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118817
Client ID: ZZZZZ	Batch ID: R118817	TestNo: SM4500-NO3		Analysis Date: 10/26/2017	SeqNo: 2809404
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	5.390	0.25	2.500	2.845	102 75 125 5.260 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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-001

Client Sample ID: CW-02D-Q417
Collection Date: 10/24/2017 2:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

EPA 3010A

EPA 6010B

RunID: NV00922-ICP2_171028C	QC Batch: 64404			PrepDate	10/26/2017		Analyst: CEI
Iron	ND	1.8	20	ug/L		1	10/29/2017 11:38 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-002

Client Sample ID: MW-901-Q417
Collection Date: 10/24/2017 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

EPA 3010A

EPA 6010B

RunID: NV00922-ICP2_171028C	QC Batch: 64404			PrepDate	10/26/2017		Analyst: CEI
Iron	ND	1.8	20	ug/L		1	10/29/2017 12:16 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-003

Client Sample ID: CW-02M-Q417
Collection Date: 10/24/2017 3:32:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

EPA 3010A

EPA 6010B

RunID: NV00922-ICP2_171028C	QC Batch: 64404			PrepDate	10/26/2017	Analyst: CEI
Iron	22	1.8	20	ug/L	1	10/29/2017 12:22 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-004

Client Sample ID: CW-03D-Q417
Collection Date: 10/24/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

EPA 3010A

EPA 6010B

RunID: NV00922-ICP2_171028C	QC Batch: 64404			PrepDate	10/26/2017	Analyst: CEI
Iron	23	1.8	20	ug/L	1	10/29/2017 12:28 PM

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



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 ELAP Cert 2676 | NV Cert NV00922
 ORELAP/NELAP Cert 4046

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ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-005

Client Sample ID: CW-03M-Q417
Collection Date: 10/24/2017 12:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

EPA 3010A

EPA 6010B

RunID: NV00922-ICP2_171028C	QC Batch: 64404			PrepDate	10/26/2017		Analyst: CEI
Iron	ND	1.8	20	ug/L		1	10/29/2017 12:34 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



ASSET LABORATORIES
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CALIFORNIA | P:562.219.7435 F:562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 ELAP Cert 2921
 EPA ID CA01638

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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-006

Client Sample ID: CW-04D-Q417
Collection Date: 10/24/2017 10:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

EPA 3010A

EPA 6010B

RunID: NV00922-ICP2_171028C	QC Batch: 64404			PrepDate	10/26/2017		Analyst: CEI
Iron	ND	1.8	20	ug/L		1	10/29/2017 12:40 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026661
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026661-007

Client Sample ID: CW-04M-Q417
Collection Date: 10/24/2017 10:01:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

EPA 3010A

EPA 6010B

RunID: NV00922-ICP2_171028C	QC Batch: 64404			PrepDate	10/26/2017		Analyst: CEI
Iron	ND	1.8	20	ug/L		1	10/29/2017 12:46 PM

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



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ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026661
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPB

Sample ID MB-64404	SampType: MBLK	TestCode: 6010_WPGE	Units: ug/L	Prep Date: 10/26/2017	RunNo: 118868
Client ID: PBW	Batch ID: 64404	TestNo: EPA 6010B EPA 3010A		Analysis Date: 10/29/2017	SeqNo: 2816770
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Iron	ND	20			
------	----	----	--	--	--

Sample ID LCS-64404	SampType: LCS	TestCode: 6010_WPGE	Units: ug/L	Prep Date: 10/26/2017	RunNo: 118868
Client ID: LCSW	Batch ID: 64404	TestNo: EPA 6010B EPA 3010A		Analysis Date: 10/29/2017	SeqNo: 2816771
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Iron	109.831	20	100.0	0	110 85 115
------	---------	----	-------	---	------------

Sample ID N026661-001F-MS	SampType: MS	TestCode: 6010_WPGE	Units: ug/L	Prep Date: 10/26/2017	RunNo: 118868
Client ID: ZZZZZ	Batch ID: 64404	TestNo: EPA 6010B EPA 3010A		Analysis Date: 10/29/2017	SeqNo: 2816777
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Iron	113.015	20	100.0	7.077	106 75 125
------	---------	----	-------	-------	------------

Sample ID N026661-001F-MSD	SampType: MSD	TestCode: 6010_WPGE	Units: ug/L	Prep Date: 10/26/2017	RunNo: 118868
Client ID: ZZZZZ	Batch ID: 64404	TestNo: EPA 6010B EPA 3010A		Analysis Date: 10/29/2017	SeqNo: 2816778
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Iron	112.093	20	100.0	7.077	105 75 125 113.0 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



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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		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@cnrigen.com		Address:		Geotracker		RWQCB		1. Chilled																							
Phone: 916-786-3302		Address: 1410 Rocky Ridge Dr # 330		Email to: mbloes@pivox.com		Labspec		CalTrans		2. Headspace																							
Fax:		Roseville, CA 95661		P.O.#		Others		LEVEL III		3. Container Intact																							
Submitted By: <i>Sacch Mathewij</i>		Phone: 916-786-3302		Phone: 949-727-1400, ext 200		Specify:		LEVEL IV		4. Seal Present																							
Title: <i>Sample Tech</i>		Fax:		Fax:		RWQCB		Regulatory		5. IR number																							
Signature: <i>[Signature]</i> Date: <i>10/24/17</i>		Sampled By: <i>Sordan Termp</i>		Matrix		Global ID:		Specify State:		6. Method of Cooling:																							
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 prosecution.		Ground-water		Global ID:		Specify State:		J.e																							
Project Name: PG&E Topock - CMP		Signature: <i>[Signature]</i> Date: <i>10/24/17</i>		x Sediment		Global ID:		Specify State:		Sample Temp: <i>2.4°C/2.2°C/2.8°C</i>																							
Project Number: RC000753.801B		Signature: <i>[Signature]</i> Date: <i>10/24/17</i>		Potable		Global ID:		Specify State:		Courier:																							
				NPDES		Global ID:		Specify State:		Tracking No.:																							
				Surface		Global ID:		Specify State:		Remarks																							
Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2SO4/NH4OH	Ammonia as Nitrogen (SM4500-NH3D), H2SO4	Dissolved metals (EPA 200.8) FF: HNO3, 500 mL poly	Ag, As, Ba, Be, Cd, Cu, Mn, Ni, Pb, Sb, Se, Tl, V, Zn	Dissolved metals (EPA200.8) FF: HNO3	Cr, Mo	Dissolved metals (EPA200.7) FF: HNO3	Al, B, Ca, Fe, K, Mg, Na	Dissolved metals (EPA 245.1): HNO3	Mercury	Anions (E300.0): Chloride, Fluoride, Sulfate	Specific Conductance (E120.1)	pH (SM4500HB)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	Turbidity (SM2130B)	Nitrate/Nitrite as Nitrogen (SM4500N03); H2SO4	Total metals (SM8010B); HNO3	Dissolved metals (EPA200.7) FF: HNO3	Na	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks			
1		CW-01D-Q417				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
2		CW-01M-Q417				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
3	N026661 - 01	CW-02D-Q417	10/24/17	1451		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
4	- 02	MW-901-Q417	10/24/17	1501		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
5	- 03	CW-02M-Q417	10/24/17	1532		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
6	- 04	CW-03D-Q417	10/24/17	1340		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
7	- 05	CW-03M-Q417	10/24/17	1238		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
8	- 06	CW-04D-Q417	10/24/17	1053		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
9	- 07	CW-04M-Q417	10/24/17	1001		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
10		CW-01D-Q417				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
Relinquished by (Signature and Printed Name): <i>Sordan Termp</i> Date/Time: <i>10/24/17 10:10</i>		Relinquished by (Signature and Printed Name): <i>[Signature]</i> Date/Time: <i>10/24/17 @ 1634</i>		Turn Around Time (TAT)		Special Instruction:																											
Relinquished by (Signature and Printed Name): <i>[Signature]</i> Date/Time: <i>10/24/17 @ 19:12</i>		Relinquished by (Signature and Printed Name): <i>[Signature]</i> Date/Time: <i>10/24/17 19:12</i>		A < 24 Hrs or Same Day TAT		Title 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Ti, V, Zn, K, Na																											
				B = Next Workday																													
				C = 2 Workdays																													
				D = 3 Workdays																													
				E = Routine 5-7 Workdays																													
				TAT Starts at 8 AM the following day if samples received after 3:00PM.																													
Terms		5. Trip Blanks and Equipment Blanks are billable sample		Preservatives:		Container Type:																											
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.		6. Asset Laboratories is not responsible for samples collected using incorrect methodology.		H=HCL		T=Tube																											
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis		7. Terms are net 30 days.		N=HNO3		V=VOA																											
3. Custom EDD formats will be an additional 3% of the total project price.		8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.		S=H2SO4		B=Tedlar																											
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.		9. For subcontract analysis, TAT and Surcharges will vary.		O=NaOH		P=Pin																											
				T=Na2S2O3		G=Glass																											
				Others/Specify: B (NH4)2SO4/NH4OH		C=Can																											

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On: 10/24/2017 Workorder: N026661
 Rep sample Temp (Deg C): 2.4/2.2/2.8 IR Gun ID: 1
 Temp Blank: Yes No
 Carrier name: ASSET
 Last 4 digits of Tracking No.: NA Packing Material Used: None
 Cooling process: Ice Ice Pack Dry Ice Other None

Sample Receipt Checklist

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

Comments:

Checklist Completed By: YR YR 11/3/2017

Reviewed By: HS 11/06/2017



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: SIGNED

25-Oct-17

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3D		
N026661-001B / CW-02D-Q417	Groundwater	10/24/2017 2:51:00 PM	8OZP	1		
N026661-002B / MW-901-Q417	Groundwater	10/24/2017 3:01:00 PM	8OZP	1		
N026661-003B / CW-02M-Q417	Groundwater	10/24/2017 3:32:00 PM	8OZP	1		
N026661-004B / CW-03D-Q417	Groundwater	10/24/2017 1:40:00 PM	8OZP	1		
N026661-005B / CW-03M-Q417	Groundwater	10/24/2017 12:38:00 PM	8OZP	1		
N026661-006B / CW-04D-Q417	Groundwater	10/24/2017 10:53:00 AM	8OZP	1		
N026661-007B / CW-04M-Q417	Groundwater	10/24/2017 10:01:00 AM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N26661A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. Please report Level IV package. EDD requirement Labspec7 edata.

GSO #: 538128982

	Date/Time		Date/Time
Relinquished by: 	10/25/2017 17:00	Received by: _____	
Relinquished by: _____		Received by: _____	

ASSET Laboratories

WORK ORDER Summary

25-Oct-17

WorkOrder: N026661

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/24/2017

Comments: RWQCB Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026661-001A	CW-02D-Q417	10/24/2017 2:51:00 PM	11/7/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-001B			11/7/2017		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N026661-001C			11/7/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-001D			11/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-001E			11/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-001F			11/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-002A	MW-901-Q417	10/24/2017 3:01:00 PM	11/7/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW

ASSET Laboratories

WORK ORDER Summary

25-Oct-17

WorkOrder: N026661

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/24/2017

Comments: RWQCB Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026661-002B	MW-901-Q417	10/24/2017 3:01:00 PM	11/7/2017	Groundwater	SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N026661-002C			11/7/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-002D			11/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-002E			11/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-002F			11/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-003A	CW-02M-Q417	10/24/2017 3:32:00 PM	11/7/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-003B			11/7/2017		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB

ASSET Laboratories

WORK ORDER Summary

25-Oct-17

WorkOrder: N026661

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/24/2017

Comments: RWQCB Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026661-003C	CW-02M-Q417	10/24/2017 3:32:00 PM	11/7/2017	Groundwater		AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-003D			11/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-003E			11/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-003F			11/7/2017		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-004A	CW-03D-Q417	10/24/2017 1:40:00 PM	11/7/2017				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-004B			11/7/2017		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N026661-004C			11/7/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW

ASSET Laboratories

WORK ORDER Summary

25-Oct-17

WorkOrder: N026661

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/24/2017

Comments: RWQCB Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026661-004C	CW-03D-Q417	10/24/2017 1:40:00 PM	11/7/2017	Groundwater	EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-004D			11/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-004E			11/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-004F			11/7/2017		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-005A	CW-03M-Q417	10/24/2017 12:38:00 PM	11/7/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-005B			11/7/2017		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N026661-005C			11/7/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW

ASSET Laboratories

WORK ORDER Summary

25-Oct-17

WorkOrder: N026661

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/24/2017

Comments: RWQCB Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026661-005C	CW-03M-Q417	10/24/2017 12:38:00 PM	11/7/2017	Groundwater		AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-005D			11/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-005E			11/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-005F			11/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-006A	CW-04D-Q417	10/24/2017 10:53:00 AM	11/7/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-006B			11/7/2017		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N026661-006C			11/7/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW

ASSET Laboratories

WORK ORDER Summary

25-Oct-17

WorkOrder: N026661

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/24/2017

Comments: RWQCB Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026661-006C	CW-04D-Q417	10/24/2017 10:53:00 AM	11/7/2017	Groundwater	EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-006D			11/7/2017	EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW	
			11/7/2017	SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW	
			11/7/2017		Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW	
			11/7/2017	SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW	
			11/7/2017	SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW	
			11/7/2017	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW	
			11/7/2017	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW	
			11/7/2017	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW	
N026661-006E			11/7/2017	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW	
N026661-006F			11/7/2017	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW	
			11/7/2017	EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW	
N026661-007A	CW-04M-Q417	10/24/2017 10:01:00 AM	11/7/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-007B			11/7/2017		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N026661-007C			11/7/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017	EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW	
			11/7/2017		AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW	
			11/7/2017	EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW	

ASSET Laboratories

WORK ORDER Summary

25-Oct-17

WorkOrder: N026661

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/24/2017

Comments: RWQCB Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026661-007C	CW-04M-Q417	10/24/2017 10:01:00 AM	11/7/2017	Groundwater	EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-007D			11/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-007E			11/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-007F			11/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/7/2017		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026661-008A	FOLDER	11/7/2017	11/7/2017		EDD	RWQCB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			11/7/2017		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			11/7/2017		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB



Date of Report: 11/08/2017

Marlon Cartin

ASSET Laboratories

3151-3153 W. Post Rd

Las Vegas, NV 89118

Client Project: N026661

BCL Project: CH2M Hill

BCL Work Order: 1730587

Invoice ID: B284754

Enclosed are the results of analyses for samples received by the laboratory on 10/26/2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Vanessa Sandoval
Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com



Table of Contents

Sample Information

Chain of Custody and Cooler Receipt form.....	3
Laboratory / Client Sample Cross Reference.....	5

Sample Results

1730587-01 - N026661-001B/ CW-02D-Q417	
Water Analysis (General Chemistry).....	6
1730587-02 - N026661-002B/ MW-901-Q417	
Water Analysis (General Chemistry).....	7
1730587-03 - N026661-003B/ CW-02M-Q417	
Water Analysis (General Chemistry).....	8
1730587-04 - N026661-004B/ CW-03D-Q417	
Water Analysis (General Chemistry).....	9
1730587-05 - N026661-005B/ CW-03M-Q417	
Water Analysis (General Chemistry).....	10
1730587-06 - N026661-006B/ CW-04D-Q417	
Water Analysis (General Chemistry).....	11
1730587-07 - N026661-007B/ CW-04M-Q417	
Water Analysis (General Chemistry).....	12

Quality Control Reports

Water Analysis (General Chemistry)

Method Blank Analysis.....	13
Laboratory Control Sample.....	14
Precision and Accuracy.....	15

Notes

Notes and Definitions.....	16
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CHAIN-OF-CUSTODY RECORD



ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
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TEL: 7023072659 FAX: 7023072691

Subcontractor:
BC Labs
4100 Atlas Court
Bakersfield, CA 93308

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

QC Level: Level IV 17-305887

Field Sampler: SIGNED

25-Oct-17

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests	
				SM4500-NH3D	
N026661-001B / CW-02D-Q417	Groundwater	10/24/2017 2:51:00 PM	80ZP	1	
N026661-002B / MW-901-Q417	Groundwater	10/24/2017 3:01:00 PM	80ZP	1	
N026661-003B / CW-02M-Q417	Groundwater	10/24/2017 3:32:00 PM	80ZP	1	
N026661-004B / CW-03D-Q417	Groundwater	10/24/2017 1:40:00 PM	80ZP	1	
N026661-005B / CW-03M-Q417	Groundwater	10/24/2017 12:38:00 PM	80ZP	1	
N026661-006B / CW-04D-Q417	Groundwater	10/24/2017 10:53:00 AM	80ZP	1	
N026661-007B / CW-04M-Q417	Groundwater	10/24/2017 10:01:00 AM	80ZP	1	

JMS JS PT

CHK BY [Signature] DISTRIBUTION
SUB-OUT

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N26661A. Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marion at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal T.A.T.

Please analyze for Ammonia by SM4500NH3D. Please report Level IV package. EDD requirement Labspec7 edata.

GSO #: 538128982

Relinquished by: <u>[Signature]</u>	Date/Time: 10/25/2017 17:00
Relinquished by: <u>[Signature]</u>	Date/Time: 10-26-17 10:38



BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 17-30587

SHIPPING INFORMATION
 Fed Ex UPS Ontrac Hand Delivery
 BC Lab Field Service Other (Specify) 650

SHIPPING CONTAINER
 Ice Chest None Box
 Other (Specify) _____

FREE LIQUID
 YES NO
 W S

Refrigerant: Ice Blue Ice None Other Comments:

Custody Seals Ice Chest Containers None Comments:
 Intact? Yes No Intact? Yes No

All samples received? Yes No All samples containers intact? Yes No Description(s) match COC? Yes No

COC Received YES NO Emissivity: 95 Container: Pipe Thermometer ID: 274 Date/Time: 10-26-17
 Temperature: (A) 0.0 °C / (C) 0.1 °C Analyst Initials: [Signature] 10:38

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz C										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS 8oz	A	A	A	A	A	A	A			
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL# 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: _____

Sample Numbering Completed By: [Signature] Date/Time: [Signature] 2:34

Rev 21 05/23/2016
 IS-1WPFacWordPerfectLAB DOCSIFORMSISAMRECrev 201



ASSET Laboratories
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 11/08/2017 17:35
Project: CH2M Hill
Project Number: N026661
Project Manager: Marlon Cartin

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1730587-01	COC Number:	---	Receive Date:	10/26/2017 10:38
	Project Number:	Cerritos Lab - EDD	Sampling Date:	10/24/2017 14:51
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	N026661-001B/ CW-02D-Q417	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Water
1730587-02	COC Number:	---	Receive Date:	10/26/2017 10:38
	Project Number:	Cerritos Lab - EDD	Sampling Date:	10/24/2017 15:01
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	N026661-002B/ MW-901-Q417	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Water
1730587-03	COC Number:	---	Receive Date:	10/26/2017 10:38
	Project Number:	Cerritos Lab - EDD	Sampling Date:	10/24/2017 15:32
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	N026661-003B/ CW-02M-Q417	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Water
1730587-04	COC Number:	---	Receive Date:	10/26/2017 10:38
	Project Number:	Cerritos Lab - EDD	Sampling Date:	10/24/2017 13:40
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	N026661-004B/ CW-03D-Q417	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Water
1730587-05	COC Number:	---	Receive Date:	10/26/2017 10:38
	Project Number:	Cerritos Lab - EDD	Sampling Date:	10/24/2017 12:38
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	N026661-005B/ CW-03M-Q417	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Water
1730587-06	COC Number:	---	Receive Date:	10/26/2017 10:38
	Project Number:	Cerritos Lab - EDD	Sampling Date:	10/24/2017 10:53
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	N026661-006B/ CW-04D-Q417	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Water
1730587-07	COC Number:	---	Receive Date:	10/26/2017 10:38
	Project Number:	Cerritos Lab - EDD	Sampling Date:	10/24/2017 10:01
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	N026661-007B/ CW-04M-Q417	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Water

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



ASSET Laboratories
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 11/08/2017 17:35
Project: CH2M Hill
Project Number: N026661
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

BCL Sample ID: 1730587-01	Client Sample Name: Cerritos Lab - EDD, N026661-001B/ CW-02D-Q417, 10/24/2017 2:51:00PM, Client
----------------------------------	--

Constituent	Dry Basis Result	As Recvd Result	Units	As Received PQL	Method	MB Bias	Lab Quals	Run #
Ammonia as N (Distilled)		ND	mg/L	1.0	SM-4500-NH3G	ND	A07	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	SM-4500-NH3G	11/06/17	11/06/17 18:11	JMH	SC-1	5	B[K0422

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3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 11/08/2017 17:35
Project: CH2M Hill
Project Number: N026661
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

BCL Sample ID: 1730587-02	Client Sample Name: Cerritos Lab - EDD, N026661-002B/ MW-901-Q417, 10/24/2017 3:01:00PM, Client
----------------------------------	--

Constituent	Dry Basis Result	As Recvd Result	Units	As Received PQL	Method	MB Bias	Lab Quals	Run #
Ammonia as N (Distilled)		ND	mg/L	1.0	SM-4500-NH3G	ND	A07	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	SM-4500-NH3G	11/06/17	11/06/17 18:14	JMH	SC-1	5	B[K0422

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ASSET Laboratories
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 11/08/2017 17:35
Project: CH2M Hill
Project Number: N026661
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

BCL Sample ID: 1730587-03	Client Sample Name: Cerritos Lab - EDD, N026661-003B/ CW-02M-Q417, 10/24/2017 3:32:00PM, Client
----------------------------------	--

Constituent	Dry Basis Result	As Recvd Result	Units	As Received PQL	Method	MB Bias	Lab Quals	Run #
Ammonia as N (Distilled)		ND	mg/L	2.0	SM-4500-NH3G	ND	A07	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	SM-4500-NH3G	11/02/17	11/02/17 14:29	JMH	SC-1	10	B[K0132

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Las Vegas, NV 89118

Reported: 11/08/2017 17:35
Project: CH2M Hill
Project Number: N026661
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

BCL Sample ID: 1730587-04	Client Sample Name: Cerritos Lab - EDD, N026661-004B/ CW-03D-Q417, 10/24/2017 1:40:00PM, Client
----------------------------------	--

Constituent	Dry Basis Result	As Recvd Result	Units	As Received PQL	Method	MB Bias	Lab Quals	Run #
Ammonia as N (Distilled)		ND	mg/L	1.0	SM-4500-NH3G	ND	A07	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	SM-4500-NH3G	11/06/17	11/06/17 18:16	JMH	SC-1	5	B[K0422

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ASSET Laboratories
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 11/08/2017 17:35
Project: CH2M Hill
Project Number: N026661
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

BCL Sample ID: 1730587-05	Client Sample Name: Cerritos Lab - EDD, N026661-005B/ CW-03M-Q417, 10/24/2017 12:38:00PM, Client
----------------------------------	---

Constituent	Dry Basis Result	As Recvd Result	Units	As Received PQL	Method	MB Bias	Lab Quals	Run #
Ammonia as N (Distilled)		ND	mg/L	1.0	SM-4500-NH3G	ND	A07	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	SM-4500-NH3G	11/06/17	11/06/17 18:18	JMH	SC-1	5	B[K0422

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Las Vegas, NV 89118

Reported: 11/08/2017 17:35
Project: CH2M Hill
Project Number: N026661
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

BCL Sample ID: 1730587-06	Client Sample Name: Cerritos Lab - EDD, N026661-006B/ CW-04D-Q417, 10/24/2017 10:53:00AM, Client
----------------------------------	---

Constituent	Dry Basis Result	As Recvd Result	Units	As Received PQL	Method	MB Bias	Lab Quals	Run #
Ammonia as N (Distilled)		ND	mg/L	1.0	SM-4500-NH3G	ND	A07	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	SM-4500-NH3G	11/06/17	11/06/17 18:20	JMH	SC-1	5	B[K0422

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ASSET Laboratories
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 11/08/2017 17:35
Project: CH2M Hill
Project Number: N026661
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

BCL Sample ID: 1730587-07	Client Sample Name: Cerritos Lab - EDD, N026661-007B/ CW-04M-Q417, 10/24/2017 10:01:00AM, Client
----------------------------------	---

Constituent	Dry Basis Result	As Recvd Result	Units	As Received PQL	Method	MB Bias	Lab Quals	Run #
Ammonia as N (Distilled)		ND	mg/L	1.0	SM-4500-NH3G	ND	A07	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	SM-4500-NH3G	11/06/17	11/06/17 18:20	JMH	SC-1	5	B[K0422

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
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ASSET Laboratories
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 11/08/2017 17:35
Project: CH2M Hill
Project Number: N026661
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[K0132]						
Ammonia as N (Distilled)	B[K0132-BLK1	ND	mg/L	0.20		
QC Batch ID: B[K0422]						
Ammonia as N (Distilled)	B[K0422-BLK1	ND	mg/L	0.20		



ASSET Laboratories
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 11/08/2017 17:35
Project: CH2M Hill
Project Number: N026661
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[K0132]										
Ammonia as N (Distilled)	B[K0132-BS1	LCS	1.0928	1.0000	mg/L	109		85 - 115		
QC Batch ID: B[K0422]										
Ammonia as N (Distilled)	B[K0422-BS1	LCS	1.0700	1.0000	mg/L	107		85 - 115		



ASSET Laboratories
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 11/08/2017 17:35
Project: CH2M Hill
Project Number: N026661
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab Quals
								Percent Recovery	RPD	
QC Batch ID: B[K0132]		Used client sample: Y - Description: N026661-003B/ CW-02M-Q417, 10/24/2017 15:32								
Ammonia as N (Distilled)	DUP	730587-03RE	ND	ND		mg/L			20	
	MS	730587-03RE	ND	27.448	25.000	mg/L		110		80 - 120
	MSD	730587-03RE	ND	27.878	25.000	mg/L	1.6	112	20	80 - 120
QC Batch ID: B[K0422]		Used client sample: Y - Description: N026661-001B/ CW-02D-Q417, 10/24/2017 14:51								
Ammonia as N (Distilled)	DUP	730587-01RE	0.52700	ND		mg/L			20	
	MS	730587-01RE	0.52700	5.6105	5.0000	mg/L		102		80 - 120
	MSD	730587-01RE	0.52700	5.4765	5.0000	mg/L	2.4	99.0	20	80 - 120



ASSET Laboratories
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 11/08/2017 17:35
Project: CH2M Hill
Project Number: N026661
Project Manager: Marlon Cartin

Notes And Definitions

- ND Analyte Not Detected
- PQL Practical Quantitation Limit
- A07 Detection and quantitation limits were raised due to sample dilution caused by high analyte concentration or matrix interference.

November 14, 2017

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

Workorder No.: N026689

RE: PG&E Topock - CMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on October 25, 2017 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,



Quennie Manimtim
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 Advanced Technology Laboratories - Las Vegas.



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NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.801B
Lab Order: N026689

CASE NARRATIVE**SAMPLE RECEIVING/GENERAL COMMENTS:**

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Subcontracted Analyses:

Ammonia was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (2.3 ug/L) and hexavalent chromium (0.25 ug/L) for sample N026689-004 (OW-02D-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) is outside recovery criteria for Sodium in QC samples N026641-001B-MS2 and N026661-002C-MS2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N026661-001C-MS1 and N026661-001C-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 200.8_Dissolved:

Dilution was necessary on some analytes for samples N026689-001, -002, -006 and -007 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed



CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.801B
Lab Order: N026689

CASE NARRATIVE

internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N026641-001B-MS, N026641-001B-MSD and N026661-007CMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Because the results for total dissolved chromium (2.3 ug/L) and hexavalent chromium (0.25 ug/L) for sample N026689-004 (OW-02D-Q417) 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 0.9 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.



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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.801B
Lab Order: N026689
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N026689-001A	CW-01D-Q417	Groundwater	10/25/2017 10:45:00 AM	10/25/2017	11/14/2017
N026689-001B	CW-01D-Q417	Groundwater	10/25/2017 10:45:00 AM	10/25/2017	11/14/2017
N026689-001C	CW-01D-Q417	Groundwater	10/25/2017 10:45:00 AM	10/25/2017	11/14/2017
N026689-001D	CW-01D-Q417	Groundwater	10/25/2017 10:45:00 AM	10/25/2017	11/14/2017
N026689-001E	CW-01D-Q417	Groundwater	10/25/2017 10:45:00 AM	10/25/2017	11/14/2017
N026689-001F	CW-01D-Q417	Groundwater	10/25/2017 10:45:00 AM	10/25/2017	11/14/2017
N026689-002A	CW-01M-Q417	Groundwater	10/25/2017 11:22:00 AM	10/25/2017	11/14/2017
N026689-002B	CW-01M-Q417	Groundwater	10/25/2017 11:22:00 AM	10/25/2017	11/14/2017
N026689-002C	CW-01M-Q417	Groundwater	10/25/2017 11:22:00 AM	10/25/2017	11/14/2017
N026689-002D	CW-01M-Q417	Groundwater	10/25/2017 11:22:00 AM	10/25/2017	11/14/2017
N026689-002E	CW-01M-Q417	Groundwater	10/25/2017 11:22:00 AM	10/25/2017	11/14/2017
N026689-002F	CW-01M-Q417	Groundwater	10/25/2017 11:22:00 AM	10/25/2017	11/14/2017
N026689-003A	OW-01D-Q417	Groundwater	10/25/2017 1:12:00 PM	10/25/2017	11/14/2017
N026689-003B	OW-01D-Q417	Groundwater	10/25/2017 1:12:00 PM	10/25/2017	11/14/2017
N026689-003C	OW-01D-Q417	Groundwater	10/25/2017 1:12:00 PM	10/25/2017	11/14/2017
N026689-003D	OW-01D-Q417	Groundwater	10/25/2017 1:12:00 PM	10/25/2017	11/14/2017
N026689-004A	OW-02D-Q417	Groundwater	10/25/2017 8:58:00 AM	10/25/2017	11/14/2017
N026689-004B	OW-02D-Q417	Groundwater	10/25/2017 8:58:00 AM	10/25/2017	11/14/2017
N026689-004C	OW-02D-Q417	Groundwater	10/25/2017 8:58:00 AM	10/25/2017	11/14/2017
N026689-004D	OW-02D-Q417	Groundwater	10/25/2017 8:58:00 AM	10/25/2017	11/14/2017
N026689-005A	OW-02M-Q417	Groundwater	10/25/2017 9:46:00 AM	10/25/2017	11/14/2017
N026689-005B	OW-02M-Q417	Groundwater	10/25/2017 9:46:00 AM	10/25/2017	11/14/2017
N026689-005C	OW-02M-Q417	Groundwater	10/25/2017 9:46:00 AM	10/25/2017	11/14/2017
N026689-005D	OW-02M-Q417	Groundwater	10/25/2017 9:46:00 AM	10/25/2017	11/14/2017
N026689-006A	OW-05D-Q417	Groundwater	10/25/2017 3:21:00 PM	10/25/2017	11/14/2017
N026689-006B	OW-05D-Q417	Groundwater	10/25/2017 3:21:00 PM	10/25/2017	11/14/2017
N026689-006C	OW-05D-Q417	Groundwater	10/25/2017 3:21:00 PM	10/25/2017	11/14/2017
N026689-006D	OW-05D-Q417	Groundwater	10/25/2017 3:21:00 PM	10/25/2017	11/14/2017
N026689-006E	OW-05D-Q417	Groundwater	10/25/2017 3:21:00 PM	10/25/2017	11/14/2017



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CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.801B
Lab Order: N026689
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N026689-006F	OW-05D-Q417	Groundwater	10/25/2017 3:21:00 PM	10/25/2017	11/14/2017
N026689-007A	OW-05M-Q417	Groundwater	10/25/2017 2:22:00 PM	10/25/2017	11/14/2017
N026689-007B	OW-05M-Q417	Groundwater	10/25/2017 2:22:00 PM	10/25/2017	11/14/2017
N026689-007C	OW-05M-Q417	Groundwater	10/25/2017 2:22:00 PM	10/25/2017	11/14/2017
N026689-007D	OW-05M-Q417	Groundwater	10/25/2017 2:22:00 PM	10/25/2017	11/14/2017
N026689-007E	OW-05M-Q417	Groundwater	10/25/2017 2:22:00 PM	10/25/2017	11/14/2017
N026689-007F	OW-05M-Q417	Groundwater	10/25/2017 2:22:00 PM	10/25/2017	11/14/2017
N026689-008A	MW-709-0417	Groundwater	10/25/2017 3:40:00 PM	10/25/2017	11/14/2017



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-001

Client Sample ID: CW-01D-Q417
Collection Date: 10/25/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171026C	QC Batch: R118844				PrepDate		Analyst: LR
Specific Conductance	7000	0.10	0.10		umhos/cm	1	10/26/2017 01:30 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-002

Client Sample ID: CW-01M-Q417
Collection Date: 10/25/2017 11:22:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171026C	QC Batch: R118844				PrepDate		Analyst: LR
Specific Conductance	7000	0.10	0.10		umhos/cm	1	10/26/2017 01:30 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-003

Client Sample ID: OW-01D-Q417
Collection Date: 10/25/2017 1:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171026C	QC Batch: R118844				PrepDate		Analyst: LR
Specific Conductance	6900	0.10	0.10		umhos/cm	1	10/26/2017 01:30 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-004

Client Sample ID: OW-02D-Q417
Collection Date: 10/25/2017 8:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171026C	QC Batch: R118844				PrepDate		Analyst: LR
Specific Conductance	7100	0.10	0.10		umhos/cm	1	10/26/2017 01:30 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-005

Client Sample ID: OW-02M-Q417
Collection Date: 10/25/2017 9:46:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171026C	QC Batch: R118844				PrepDate		Analyst: LR
Specific Conductance	7000	0.10	0.10		umhos/cm	1	10/26/2017 01:30 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-006

Client Sample ID: OW-05D-Q417
Collection Date: 10/25/2017 3:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171026C	QC Batch: R118844				PrepDate		Analyst: LR
Specific Conductance	7000	0.10	0.10		umhos/cm	1	10/26/2017 01:30 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-007

Client Sample ID: OW-05M-Q417
Collection Date: 10/25/2017 2:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: NV00922-WC_171026C	QC Batch: R118844				PrepDate		Analyst: LR
Specific Conductance	7000	0.10	0.10		umhos/cm	1	10/26/2017 01:30 PM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID N026689-001DDUP	SampType: DUP	TestCode: 120.1_WPGE	Units: umhos/cm	Prep Date:	RunNo: 118844						
Client ID: ZZZZZ	Batch ID: R118844	TestNo: EPA 120.1	Analysis Date: 10/26/2017	SeqNo: 2811097							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7050.000	0.10						7030	0.284	10	

Qualifiers:

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

Calculations are based on raw values



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-001

Client Sample ID: CW-01D-Q417
Collection Date: 10/25/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171026F	QC Batch: 64408				PrepDate	10/26/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	10/26/2017 01:15 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-002

Client Sample ID: CW-01M-Q417
Collection Date: 10/25/2017 11:22:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171026F	QC Batch: 64408				PrepDate	10/26/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	3900	50	50		mg/L	1	10/26/2017 01:15 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-003

Client Sample ID: OW-01D-Q417
Collection Date: 10/25/2017 1:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171026F	QC Batch: 64408				PrepDate	10/26/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	10/26/2017 01:15 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-004

Client Sample ID: OW-02D-Q417
Collection Date: 10/25/2017 8:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171026F	QC Batch: 64408				PrepDate	10/26/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	10/26/2017 01:15 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT:	ARCADIS U.S., Inc. - California	Client Sample ID:	OW-02M-Q417
Lab Order:	N026689	Collection Date:	10/25/2017 9:46:00 AM
Project:	PG&E Topock - CMP, RC000753.801B	Matrix:	GROUNDWATER
Lab ID:	N026689-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171026G	QC Batch: 64409			PrepDate	10/26/2017		Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4000	50	50	mg/L		1	10/26/2017 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	



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-006

Client Sample ID: OW-05D-Q417
Collection Date: 10/25/2017 3:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171026G	QC Batch: 64409				PrepDate	10/26/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	3800	50	50		mg/L	1	10/26/2017 01:15 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-007

Client Sample ID: OW-05M-Q417
Collection Date: 10/25/2017 2:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE

SM2540C

RunID: NV00922-WC_171026G	QC Batch: 64409				PrepDate	10/26/2017	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	3800	50	50		mg/L	1	10/26/2017 01:15 PM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-64408	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	10/26/2017	RunNo:	118848			
Client ID:	LCSW	Batch ID:	64408	TestNo:	SM2540C			Analysis Date:	10/26/2017	SeqNo:	2811426			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		965.000		10	1000	0		96.5	80	120				

Sample ID	MB-64408	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	10/26/2017	RunNo:	118848			
Client ID:	PBW	Batch ID:	64408	TestNo:	SM2540C			Analysis Date:	10/26/2017	SeqNo:	2811427			
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	N026664-012ADUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	10/26/2017	RunNo:	118848			
Client ID:	ZZZZZ	Batch ID:	64408	TestNo:	SM2540C			Analysis Date:	10/26/2017	SeqNo:	2811431			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		352800.000		2000						340200		3.64	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



ASSET LABORATORIES
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 3151 W. Post Rd., Las Vegas, NV 89118
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"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID LCS-64409	SampType: LCS	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 10/26/2017	RunNo: 118849						
Client ID: LCSW	Batch ID: 64409	TestNo: SM2540C		Analysis Date: 10/26/2017	SeqNo: 2811439						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera											
	966.000	10	1000	0	96.6	80	120				

Sample ID MB-64409	SampType: MBLK	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 10/26/2017	RunNo: 118849						
Client ID: PBW	Batch ID: 64409	TestNo: SM2540C		Analysis Date: 10/26/2017	SeqNo: 2811440						
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 N026691-001CDUP	SampType: DUP	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 10/26/2017	RunNo: 118849						
Client ID: ZZZZZ	Batch ID: 64409	TestNo: SM2540C		Analysis Date: 10/26/2017	SeqNo: 2811447						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera											
	25350.000	500						26100	2.92	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 |

Calculations are based on raw values

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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-001

Client Sample ID: CW-01D-Q417
Collection Date: 10/25/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171106A	QC Batch: 64416	PrepDate	10/27/2017	Analyst: CEI		
Aluminum	ND	2.7	50	µg/L	1	11/6/2017 12:33 PM
Boron	1000	38	100	µg/L	1	11/6/2017 12:33 PM
Calcium	140000	28	500	µg/L	1	11/6/2017 12:33 PM
Iron	ND	1.8	20	µg/L	1	11/6/2017 12:33 PM
Magnesium	15000	4.4	100	µg/L	1	11/6/2017 12:33 PM
Potassium	11000	38	500	µg/L	1	11/5/2017 06:27 PM
Sodium	1400000	1300	25000	µg/L	50	11/5/2017 06:32 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-002

Client Sample ID: CW-01M-Q417
Collection Date: 10/25/2017 11:22:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171106A	QC Batch: 64416	PrepDate	10/27/2017	Analyst: CEI		
Aluminum	ND	2.7	50	µg/L	1	11/6/2017 12:49 PM
Boron	990	38	100	µg/L	1	11/6/2017 12:49 PM
Calcium	140000	28	500	µg/L	1	11/6/2017 12:49 PM
Iron	ND	1.8	20	µg/L	1	11/6/2017 12:49 PM
Magnesium	12000	4.4	100	µg/L	1	11/6/2017 12:49 PM
Potassium	11000	38	500	µg/L	1	11/5/2017 06:56 PM
Sodium	1400000	1300	25000	µg/L	50	11/5/2017 07:01 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-003

Client Sample ID: OW-01D-Q417
Collection Date: 10/25/2017 1:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171105B	QC Batch: 64416			PrepDate	10/27/2017	Analyst: CEI
Sodium	1400000	1300	25000	µg/L	50	11/5/2017 07:04 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-004

Client Sample ID: OW-02D-Q417
Collection Date: 10/25/2017 8:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171105B	QC Batch: 64416			PrepDate	10/27/2017	Analyst: CEI
Sodium	1500000	1300	25000	µg/L	50	11/5/2017 07:08 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-005

Client Sample ID: OW-02M-Q417
Collection Date: 10/25/2017 9:46:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171105B	QC Batch: 64416			PrepDate	10/27/2017	Analyst: CEI
Sodium	1400000	1300	25000	µg/L	50	11/5/2017 07:11 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-006

Client Sample ID: OW-05D-Q417
Collection Date: 10/25/2017 3:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171106A	QC Batch: 64416	PrepDate	10/27/2017	Analyst: CEI		
Aluminum	ND	2.7	50	µg/L	1	11/6/2017 12:55 PM
Boron	980	38	100	µg/L	1	11/6/2017 12:55 PM
Calcium	120000	28	500	µg/L	1	11/6/2017 12:55 PM
Iron	ND	1.8	20	µg/L	1	11/6/2017 12:55 PM
Magnesium	23000	4.4	100	µg/L	1	11/6/2017 12:55 PM
Potassium	13000	38	500	µg/L	1	11/5/2017 07:14 PM
Sodium	1400000	1300	25000	µg/L	50	11/5/2017 07:19 PM

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



ASSET LABORATORIES
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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-007

Client Sample ID: OW-05M-Q417
Collection Date: 10/25/2017 2:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICP

EPA 200.7

RunID: NV00922-ICP2_171106A	QC Batch: 64416	PrepDate	10/27/2017	Analyst: CEI		
Aluminum	ND	2.7	50	µg/L	1	11/6/2017 01:01 PM
Boron	980	38	100	µg/L	1	11/6/2017 01:01 PM
Calcium	120000	28	500	µg/L	1	11/6/2017 01:01 PM
Iron	ND	1.8	20	µg/L	1	11/6/2017 01:01 PM
Magnesium	21000	4.4	100	µg/L	1	11/6/2017 01:01 PM
Potassium	12000	38	500	µg/L	1	11/5/2017 07:23 PM
Sodium	1400000	1300	25000	µg/L	50	11/5/2017 07:27 PM

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



ASSET LABORATORIES
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"Servina Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPBB

Sample ID MB-64416	SampType: MBLK	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: PBW	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822304
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 LCS2-64416	SampType: LCS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: LCSW	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822305
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	19728.875	500	20000	0	98.6 85 115
Sodium	19989.201	500	20000	0	99.9 85 115

Sample ID N026641-001B-MS2	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: ZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822329
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	34570.354	5000	20000	13950	103 75 125

Sample ID N026641-001B-MS2	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: ZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822330
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	1337836.766	25000	20000	1416000	-393 75 125 S

Sample ID N026661-002C-MS2	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025
Client ID: ZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822341
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	31989.216	500	20000	10730	106 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



ASSET LABORATORIES
ANALYTICAL SERVICES FOR THE CONSTRUCTION INDUSTRY

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPBB

Sample ID N026661-002C-MSD	SampType: MSD	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025						
Client ID: ZZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822342						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	31991.241	500	20000	10730	106	75	125	31990	0.00633	20	

Sample ID N026661-002C-MS2	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025						
Client ID: ZZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822346						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1562557.389	25000	20000	1536000	134	75	125				S

Sample ID N026661-002C-MSD	SampType: MSD	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119025						
Client ID: ZZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/5/2017	SeqNo: 2822347						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1556293.056	25000	20000	1536000	102	75	125	1563000	0.402	20	

Sample ID MB-64416	SampType: MBLK	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119059						
Client ID: PBW	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/6/2017	SeqNo: 2824304						
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	4.686	20									
Magnesium	ND	100									

Sample ID LCS1-64416	SampType: LCS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119059						
Client ID: LCSW	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/6/2017	SeqNo: 2824305						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	10022.256	50	10000	0	100	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 |

Calculations are based on raw values

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPBB

Sample ID	LCS1-64416	SampType: LCS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119059
Client ID:	LCSW	Batch ID: 64416	TestNo: EPA 200.7	Analysis Date: 11/6/2017	SeqNo: 2824305	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Boron	4868.963	100	5000	0	97.4	85 115
Calcium	9697.709	500	10000	0	97.0	85 115
Iron	108.434	20	100.0	0	108	85 115
Magnesium	9920.171	100	10000	0	99.2	85 115

Sample ID	N026661-001C-MS1	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119059
Client ID:	ZZZZZZ	Batch ID: 64416	TestNo: EPA 200.7	Analysis Date: 11/6/2017	SeqNo: 2824321	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	9719.981	50	10000	0	97.2	75 125
Boron	5864.074	100	5000	999.2	97.3	75 125
Calcium	100861.286	500	10000	86710	141	75 125 S
Iron	102.456	20	100.0	7.411	95.0	75 125
Magnesium	14005.502	100	10000	4773	92.3	75 125

Sample ID	N026661-001C-MSD	SampType: MSD	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119059
Client ID:	ZZZZZZ	Batch ID: 64416	TestNo: EPA 200.7	Analysis Date: 11/6/2017	SeqNo: 2824322	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aluminum	9784.653	50	10000	0	97.8	75 125 9720 0.663 20
Boron	5881.103	100	5000	999.2	97.6	75 125 5864 0.290 20
Calcium	101455.571	500	10000	86710	147	75 125 100900 0.587 20 S
Iron	102.791	20	100.0	7.411	95.4	75 125 102.5 0.327 20
Magnesium	14115.325	100	10000	4773	93.4	75 125 14010 0.781 20

Sample ID	N026689-004B-MS1	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119059
Client ID:	ZZZZZZ	Batch ID: 64416	TestNo: EPA 200.7	Analysis Date: 11/6/2017	SeqNo: 2824324	
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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPBB

Sample ID: N026689-004B-MS1	SampType: MS	TestCode: 200.7_WDPG	Units: µg/L	Prep Date: 10/27/2017	RunNo: 119059						
Client ID: ZZZZZZ	Batch ID: 64416	TestNo: EPA 200.7		Analysis Date: 11/6/2017	SeqNo: 2824324						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9767.135	50	10000	0	97.7	75	125				
Boron	5798.867	100	5000	1065	94.7	75	125				
Calcium	133561.065	500	10000	125300	82.7	75	125				
Iron	107.169	20	100.0	9.981	97.2	75	125				
Magnesium	32928.029	100	10000	24460	84.7	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 | |



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-001

Client Sample ID: CW-01D-Q417
Collection Date: 10/25/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450	PrepDate	10/29/2017	Analyst: CEI		
Antimony	ND	0.031	0.50	µg/L	1	11/6/2017 05:50 AM
Arsenic	1.1	0.025	0.10	µg/L	1	11/6/2017 05:50 AM
Barium	20	0.070	1.0	µg/L	1	11/6/2017 05:50 AM
Beryllium	ND	0.22	2.5	µg/L	5	11/6/2017 05:56 AM
Cadmium	ND	0.047	0.50	µg/L	1	11/6/2017 05:50 AM
Cobalt	ND	0.026	0.50	µg/L	1	11/6/2017 05:50 AM
Copper	ND	0.26	1.0	µg/L	1	11/6/2017 05:50 AM
Lead	ND	0.18	5.0	µg/L	5	11/6/2017 05:56 AM
Manganese	0.58	0.056	0.50	µg/L	1	11/6/2017 05:50 AM
Molybdenum	19	0.039	0.50	µg/L	1	11/6/2017 05:50 AM
Nickel	ND	0.040	1.0	µg/L	1	11/6/2017 05:50 AM
Selenium	3.3	0.028	0.50	µg/L	1	11/6/2017 05:50 AM
Silver	ND	0.059	0.50	µg/L	1	11/6/2017 05:50 AM
Thallium	ND	0.15	2.5	µg/L	5	11/6/2017 05:56 AM
Vanadium	2.4	0.021	1.0	µg/L	1	11/6/2017 05:50 AM
Zinc	ND	0.27	10	µg/L	1	11/6/2017 05:50 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-002

Client Sample ID: CW-01M-Q417
Collection Date: 10/25/2017 11:22:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450	PrepDate	10/29/2017	Analyst: CEI		
Antimony	ND	0.031	0.50	µg/L	1	11/6/2017 06:01 AM
Arsenic	1.1	0.025	0.10	µg/L	1	11/6/2017 06:01 AM
Barium	81	0.070	1.0	µg/L	1	11/6/2017 06:01 AM
Beryllium	ND	0.22	2.5	µg/L	5	11/6/2017 06:07 AM
Cadmium	ND	0.047	0.50	µg/L	1	11/6/2017 06:01 AM
Cobalt	ND	0.026	0.50	µg/L	1	11/6/2017 06:01 AM
Copper	ND	0.26	1.0	µg/L	1	11/6/2017 06:01 AM
Lead	ND	0.18	5.0	µg/L	5	11/6/2017 06:07 AM
Manganese	1.5	0.056	0.50	µg/L	1	11/6/2017 06:01 AM
Molybdenum	17	0.039	0.50	µg/L	1	11/6/2017 06:01 AM
Nickel	ND	0.040	1.0	µg/L	1	11/6/2017 06:01 AM
Selenium	3.2	0.028	0.50	µg/L	1	11/6/2017 06:01 AM
Silver	ND	0.059	0.50	µg/L	1	11/6/2017 06:01 AM
Thallium	ND	0.15	2.5	µg/L	5	11/6/2017 06:07 AM
Vanadium	2.6	0.021	1.0	µg/L	1	11/6/2017 06:01 AM
Zinc	ND	0.27	10	µg/L	1	11/6/2017 06:01 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-003

Client Sample ID: OW-01D-Q417
Collection Date: 10/25/2017 1:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450			PrepDate	10/29/2017	Analyst: CEI
Molybdenum	18	0.039	0.50	µg/L	1	11/6/2017 06:12 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-004

Client Sample ID: OW-02D-Q417
Collection Date: 10/25/2017 8:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450			PrepDate	10/29/2017	Analyst: CEI
Molybdenum	19	0.039	0.50	µg/L	1	11/6/2017 06:24 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-005

Client Sample ID: OW-02M-Q417
Collection Date: 10/25/2017 9:46:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Molybdenum	22	0.039	0.50		µg/L	1	11/6/2017 06:46 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-006

Client Sample ID: OW-05D-Q417
Collection Date: 10/25/2017 3:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY ICMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450	PrepDate	10/29/2017	Analyst: CEI		
Antimony	ND	0.031	0.50	µg/L	1	11/6/2017 06:57 AM
Arsenic	4.1	0.025	0.10	µg/L	1	11/6/2017 06:57 AM
Barium	21	0.070	1.0	µg/L	1	11/6/2017 06:57 AM
Beryllium	ND	0.22	2.5	µg/L	5	11/6/2017 07:02 AM
Cadmium	ND	0.047	0.50	µg/L	1	11/6/2017 06:57 AM
Cobalt	ND	0.026	0.50	µg/L	1	11/6/2017 06:57 AM
Copper	ND	0.26	1.0	µg/L	1	11/6/2017 06:57 AM
Lead	ND	0.18	5.0	µg/L	5	11/6/2017 07:02 AM
Manganese	ND	0.056	0.50	µg/L	1	11/6/2017 06:57 AM
Molybdenum	21	0.039	0.50	µg/L	1	11/6/2017 06:57 AM
Nickel	ND	0.040	1.0	µg/L	1	11/6/2017 06:57 AM
Selenium	3.6	0.028	0.50	µg/L	1	11/6/2017 06:57 AM
Silver	ND	0.059	0.50	µg/L	1	11/6/2017 06:57 AM
Thallium	ND	0.15	2.5	µg/L	5	11/6/2017 07:02 AM
Vanadium	3.4	0.021	1.0	µg/L	1	11/6/2017 06:57 AM
Zinc	ND	0.27	10	µg/L	1	11/6/2017 06:57 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-007

Client Sample ID: OW-05M-Q417
Collection Date: 10/25/2017 2:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED METALS BY IC PMS

EPA 200.8

RunID: NV00922-ICP7_171105B	QC Batch: 64450	PrepDate	10/29/2017	Analyst: CEI		
Antimony	ND	0.031	0.50	µg/L	1	11/6/2017 07:08 AM
Arsenic	0.81	0.025	0.10	µg/L	1	11/6/2017 07:08 AM
Barium	32	0.070	1.0	µg/L	1	11/6/2017 07:08 AM
Beryllium	ND	0.22	2.5	µg/L	5	11/6/2017 07:13 AM
Cadmium	ND	0.047	0.50	µg/L	1	11/6/2017 07:08 AM
Cobalt	ND	0.026	0.50	µg/L	1	11/6/2017 07:08 AM
Copper	ND	0.26	1.0	µg/L	1	11/6/2017 07:08 AM
Lead	ND	0.18	5.0	µg/L	5	11/6/2017 07:13 AM
Manganese	ND	0.056	0.50	µg/L	1	11/6/2017 07:08 AM
Molybdenum	19	0.039	0.50	µg/L	1	11/6/2017 07:08 AM
Nickel	ND	0.040	1.0	µg/L	1	11/6/2017 07:08 AM
Selenium	3.3	0.028	0.50	µg/L	1	11/6/2017 07:08 AM
Silver	ND	0.059	0.50	µg/L	1	11/6/2017 07:08 AM
Thallium	ND	0.15	2.5	µg/L	5	11/6/2017 07:13 AM
Vanadium	1.6	0.021	1.0	µg/L	1	11/6/2017 07:08 AM
Zinc	ND	0.27	10	µg/L	1	11/6/2017 07:08 AM

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



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"Servina Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID MB-64450	SampType: MBLK	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046						
Client ID: PBW	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823198						
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									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	ND	0.50									
Thallium	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID LCS-64450	SampType: LCS	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046						
Client ID: LCSW	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823199						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.505	0.50	10.00	0	95.0	85	115				
Arsenic	9.706	0.10	10.00	0	97.1	85	115				
Barium	9.611	1.0	10.00	0	96.1	85	115				
Beryllium	9.075	0.50	10.00	0	90.8	85	115				
Cadmium	9.554	0.50	10.00	0	95.5	85	115				
Cobalt	9.980	0.50	10.00	0	99.8	85	115				
Copper	11.185	1.0	10.00	0	112	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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	LCS-64450	SampType:	LCS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	10/29/2017	RunNo:	119046
Client ID:	LCSW	Batch ID:	64450	TestNo:	EPA 200.8			Analysis Date:	11/6/2017	SeqNo:	2823199
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	9.861	1.0	10.00	0	98.6	85	115				
Manganese	91.393	0.50	100.0	0	91.4	85	115				
Molybdenum	9.390	0.50	10.00	0	93.9	85	115				
Nickel	10.721	1.0	10.00	0	107	85	115				
Selenium	9.676	0.50	10.00	0	96.8	85	115				
Silver	10.562	0.50	10.00	0	106	85	115				
Thallium	10.407	0.50	10.00	0	104	85	115				
Vanadium	10.322	1.0	10.00	0	103	85	115				
Zinc	101.716	10	100.0	0	102	85	115				

Sample ID	N026641-001B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	10/29/2017	RunNo:	119046
Client ID:	ZZZZZZ	Batch ID:	64450	TestNo:	EPA 200.8			Analysis Date:	11/6/2017	SeqNo:	2823205
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.638	0.50	10.00	0	96.4	75	125				
Arsenic	11.681	0.10	10.00	1.787	98.9	75	125				
Barium	72.981	1.0	10.00	64.12	88.6	75	125				
Cadmium	8.991	0.50	10.00	0	89.9	75	125				
Cobalt	8.187	0.50	10.00	0	81.9	75	125				
Copper	4.951	1.0	10.00	0	49.5	75	125				S
Manganese	90.132	0.50	100.0	0	90.1	75	125				
Molybdenum	29.987	0.50	10.00	18.86	111	75	125				
Nickel	9.006	1.0	10.00	0	90.1	75	125				
Selenium	12.874	0.50	10.00	3.310	95.6	75	125				
Silver	10.489	0.50	10.00	0	105	75	125				
Vanadium	12.549	1.0	10.00	2.791	97.6	75	125				
Zinc	111.980	10	100.0	0	112	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: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID N026641-001B-MS	SampType: MS	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046						
Client ID: ZZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823206						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	11.038	2.5	10.00	0	110	75	125				
Lead	10.289	5.0	10.00	0	103	75	125				
Thallium	9.033	2.5	10.00	0	90.3	75	125				

Sample ID N026641-001B-MSD	SampType: MSD	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046						
Client ID: ZZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823207						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.706	0.50	10.00	0	97.1	75	125	9.638	0.697	20	
Arsenic	11.758	0.10	10.00	1.787	99.7	75	125	11.68	0.654	20	
Barium	72.702	1.0	10.00	64.12	85.8	75	125	72.98	0.382	20	
Cadmium	8.887	0.50	10.00	0	88.9	75	125	8.991	1.17	20	
Cobalt	8.171	0.50	10.00	0	81.7	75	125	8.187	0.186	20	
Copper	5.180	1.0	10.00	0	51.8	75	125	4.951	4.52	20	S
Manganese	89.961	0.50	100.0	0	90.0	75	125	90.13	0.190	20	
Molybdenum	30.140	0.50	10.00	18.86	113	75	125	29.99	0.508	20	
Nickel	9.220	1.0	10.00	0	92.2	75	125	9.006	2.35	20	
Selenium	13.689	0.50	10.00	3.310	104	75	125	12.87	6.14	20	
Silver	10.392	0.50	10.00	0	104	75	125	10.49	0.923	20	
Vanadium	12.554	1.0	10.00	2.791	97.6	75	125	12.55	0.0358	20	
Zinc	110.323	10	100.0	0	110	75	125	112.0	1.49	20	

Sample ID N026641-001B-MSD	SampType: MSD	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046						
Client ID: ZZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823210						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	10.766	2.5	10.00	0	108	75	125	11.04	2.50	20	
Lead	10.190	5.0	10.00	0	102	75	125	10.29	0.968	20	
Thallium	8.245	2.5	10.00	0	82.5	75	125	9.033	9.12	20	

Qualifiers:

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

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	SampType: MS	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046						
Client ID: ZZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823238						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.635	0.50	10.00	0	96.3	75	125				
Arsenic	11.635	0.10	10.00	1.983	96.5	75	125				
Barium	105.419	1.0	10.00	95.49	99.3	75	125				
Cadmium	8.901	0.50	10.00	0	89.0	75	125				
Cobalt	8.467	0.50	10.00	0	84.7	75	125				
Copper	4.843	1.0	10.00	0	48.4	75	125				S
Manganese	93.712	0.50	100.0	0.5997	93.1	75	125				
Molybdenum	20.255	0.50	10.00	9.574	107	75	125				
Nickel	9.109	1.0	10.00	0	91.1	75	125				
Selenium	11.943	0.50	10.00	2.882	90.6	75	125				
Silver	10.213	0.50	10.00	0	102	75	125				
Vanadium	13.624	1.0	10.00	3.441	102	75	125				
Zinc	109.600	10	100.0	0	110	75	125				

Sample ID	SampType: MS	TestCode: 200.8_WDISS	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119046						
Client ID: ZZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823239						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	10.436	2.5	10.00	0	104	75	125				
Lead	9.905	5.0	10.00	0	99.0	75	125				
Thallium	8.397	2.5	10.00	0	84.0	75	125				

Qualifiers:

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

Calculations are based on raw values

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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-001

Client Sample ID: CW-01D-Q417
Collection Date: 10/25/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171026A	QC Batch: R118830				PrepDate		Analyst: RAB
Hexavalent Chromium	0.35	0.033	0.20		µg/L	1	10/26/2017 02:23 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	ND	0.019	1.0		µg/L	1	11/6/2017 05:50 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-002

Client Sample ID: CW-01M-Q417
Collection Date: 10/25/2017 11:22:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171026A	QC Batch: R118830				PrepDate		Analyst: RAB
Hexavalent Chromium	0.85	0.033	0.20		µg/L	1	10/26/2017 02:42 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	ND	0.019	1.0		µg/L	1	11/6/2017 06:01 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-003

Client Sample ID: OW-01D-Q417
Collection Date: 10/25/2017 1:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171026A	QC Batch: R118830				PrepDate		Analyst: RAB
Hexavalent Chromium	0.27	0.033	0.20		µg/L	1	10/26/2017 03:01 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	ND	0.019	1.0		µg/L	1	11/6/2017 06:12 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-004

Client Sample ID: OW-02D-Q417
Collection Date: 10/25/2017 8:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171026A	QC Batch: R118830				PrepDate		Analyst: RAB
Hexavalent Chromium	0.25	0.033	0.20		µg/L	1	10/26/2017 03:39 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	2.3	0.019	1.0		µg/L	1	11/6/2017 06:24 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-005

Client Sample ID: OW-02M-Q417
Collection Date: 10/25/2017 9:46:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171026A	QC Batch: R118830				PrepDate		Analyst: RAB
Hexavalent Chromium	0.58	0.033	0.20		µg/L	1	10/26/2017 03:57 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	ND	0.019	1.0		µg/L	1	11/6/2017 06:46 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-006

Client Sample ID: OW-05D-Q417
Collection Date: 10/25/2017 3:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171026A	QC Batch: R118830				PrepDate		Analyst: RAB
Hexavalent Chromium	0.29	0.033	0.20		µg/L	1	10/26/2017 04:16 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	ND	0.019	1.0		µg/L	1	11/6/2017 06:57 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-007

Client Sample ID: OW-05M-Q417
Collection Date: 10/25/2017 2:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_171026A	QC Batch: R118830				PrepDate		Analyst: RAB
Hexavalent Chromium	0.45	0.033	0.20		µg/L	1	10/26/2017 04:35 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: NV00922-ICP7_171105A	QC Batch: 64450				PrepDate	10/29/2017	Analyst: CEI
Chromium	ND	0.019	1.0		µg/L	1	11/6/2017 07:08 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-008

Client Sample ID: MW-709-0417
Collection Date: 10/25/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC

EPA 218.6

RunID: NV00922-IC7_171026A	QC Batch: R118830			PrepDate			Analyst: RAB
Hexavalent Chromium	ND	0.033	0.20	µg/L	1		10/26/2017 04:54 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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID MB-64450	SampType: MBLK	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: PBW	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823084
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium ND 1.0

Sample ID LCS-64450	SampType: LCS	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: LCSW	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823085
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium 10.449 1.0 10.00 0 104 85 115

Sample ID N026641-001B-MS	SampType: MS	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: ZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823091
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium 10.137 1.0 10.00 1.001 91.4 75 125

Sample ID N026641-001B-MSD	SampType: MSD	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: ZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823093
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium 10.018 1.0 10.00 1.001 90.2 75 125 10.14 1.18 20

Sample ID N026661-007C-MS	SampType: MS	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date: 10/29/2017	RunNo: 119044
Client ID: ZZZZZ	Batch ID: 64450	TestNo: EPA 200.8		Analysis Date: 11/6/2017	SeqNo: 2823124
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chromium 11.139 1.0 10.00 1.744 94.0 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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: MB-R118830	SampType: MBLK	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: PBW	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809820						
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-R118830	SampType: LCS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: LCSW	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809821						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 5.099 0.20 5.000 0 102 90 110

Sample ID: N026661-001AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809823						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 1.313 0.20 1.000 0.2605 105 90 110

Sample ID: N026661-002AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809825						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 1.267 0.20 1.000 0.2327 103 90 110

Sample ID: N026661-003AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809827						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 2.281 0.20 1.000 1.228 105 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 | |

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID N026661-004AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809829						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.251	0.20	1.000	0.2619	98.9	90	110				

Sample ID N026661-005AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809833						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.032	0.20	5.000	4.885	103	90	110				

Sample ID N026661-006AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809835						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.405	0.20	1.000	0.3880	102	90	110				

Sample ID N026661-007AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809839						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.765	0.20	1.000	1.713	105	90	110				

Sample ID N026661-001AMSD	SampType: MSD	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809840						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.344	0.20	1.000	0.2605	108	90	110	1.313	2.36	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 |

Calculations are based on raw values

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"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID N026689-001AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809842						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.328	0.20	1.000	0.3498	97.8	90	110				

Sample ID N026689-002AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809844						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.883	0.20	1.000	0.8537	103	90	110				

Sample ID N026689-003AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809846						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.327	0.20	1.000	0.2719	105	90	110				

Sample ID N026689-004AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809850						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.251	0.20	1.000	0.2506	100	90	110				

Sample ID N026689-005AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809852						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.667	0.20	1.000	0.5766	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 | |

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID N026689-006AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809854						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.324	0.20	1.000	0.2945	103	90	110				

Sample ID N026689-007AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809856						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.466	0.20	1.000	0.4456	102	90	110				

Sample ID N026689-008AMS	SampType: MS	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809858						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.049	0.20	1.000	0	105	90	110				

Sample ID N026690-001ADUP	SampType: DUP	TestCode: 218.6_WPGE	Units: µg/L	Prep Date:	RunNo: 118830						
Client ID: ZZZZZ	Batch ID: R118830	TestNo: EPA 218.6		Analysis Date: 10/26/2017	SeqNo: 2809862						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	83.543	2.0						81.76	2.16	20	

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-001

Client Sample ID: CW-01D-Q417
Collection Date: 10/25/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171026H	QC Batch: R118847				PrepDate		Analyst: LR
Turbidity	0.23	0.10	0.10		NTU	1	10/26/2017 03:35 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-002

Client Sample ID: CW-01M-Q417
Collection Date: 10/25/2017 11:22:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171026H	QC Batch: R118847				PrepDate		Analyst: LR
Turbidity	0.36	0.10	0.10		NTU	1	10/26/2017 03:35 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-003

Client Sample ID: OW-01D-Q417
Collection Date: 10/25/2017 1:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171026H	QC Batch: R118847			PrepDate		Analyst: LR
Turbidity	0.40	0.10	0.10	NTU	1	10/26/2017 03:35 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-004

Client Sample ID: OW-02D-Q417
Collection Date: 10/25/2017 8:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171026H	QC Batch: R118847			PrepDate			Analyst: LR
Turbidity	0.32	0.10	0.10	NTU	1		10/26/2017 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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-005

Client Sample ID: OW-02M-Q417
Collection Date: 10/25/2017 9:46:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171026H	QC Batch: R118847				PrepDate		Analyst: LR
Turbidity	0.15	0.10	0.10		NTU	1	10/26/2017 03:35 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-006

Client Sample ID: OW-05D-Q417
Collection Date: 10/25/2017 3:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171026H	QC Batch: R118847				PrepDate		Analyst: LR
Turbidity	0.16	0.10	0.10		NTU	1	10/26/2017 03:35 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-007

Client Sample ID: OW-05M-Q417
Collection Date: 10/25/2017 2:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_171026H	QC Batch: R118847				PrepDate		Analyst: LR
Turbidity	0.18	0.10	0.10		NTU	1	10/26/2017 03:35 PM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2130_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo	Client ID	Batch ID	TestNo	Analysis Date	SeqNo	Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
MB-R118847	MBLK	2130_W	NTU		118847	PBW	R118847	SM 2130B	10/26/2017	2811114	Turbidity	ND	0.10										
N026689-001DDUP	DUP	2130_W	NTU		118847	ZZZZZ	R118847	SM 2130B	10/26/2017	2811116	Turbidity	0.250	0.10					0.2300		8.33		30	
N026689-004CDUP	DUP	2130_W	NTU		118847	ZZZZZ	R118847	SM 2130B	10/26/2017	2811120	Turbidity	0.340	0.10					0.3200		6.06		30	

Qualifiers:

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

Calculations are based on raw values

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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-001

Client Sample ID: CW-01D-Q417
Collection Date: 10/25/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ALKALINITY, SPECIATED

SM 2320 B

RunID: NV00922-WC_171031F	QC Batch: R119070					PrepDate	Analyst: LR
Alkalinity, Total (As CaCO3)	63	1.2	5.0		mg/L	1	10/31/2017 08:15 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-002

Client Sample ID: CW-01M-Q417
Collection Date: 10/25/2017 11:22:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ALKALINITY, SPECIATED

SM 2320 B

RunID: NV00922-WC_171031F	QC Batch: R119070				PrepDate		Analyst: LR
Alkalinity, Total (As CaCO3)	79	1.2	5.0		mg/L	1	10/31/2017 08:15 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-006

Client Sample ID: OW-05D-Q417
Collection Date: 10/25/2017 3:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ALKALINITY, SPECIATED

SM 2320 B

RunID: NV00922-WC_171031F	QC Batch: R119070				PrepDate		Analyst: LR
Alkalinity, Total (As CaCO3)	72	1.2	5.0		mg/L	1	10/31/2017 08:15 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-007

Client Sample ID: OW-05M-Q417
Collection Date: 10/25/2017 2:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ALKALINITY, SPECIATED

SM 2320 B

RunID: NV00922-WC_171031F	QC Batch: R119070				PrepDate		Analyst: LR
Alkalinity, Total (As CaCO3)	68	1.2	5.0		mg/L	1	10/31/2017 08:15 AM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	LCS-R119070	SampType:	LCS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	119070			
Client ID:	LCSW	Batch ID:	R119070	TestNo:	SM 2320 B			Analysis Date:	10/31/2017	SeqNo:	2824830			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)		96.916		5.0	100.0	0		96.9	85	115				

Sample ID	MB-R119070	SampType:	MBLK	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	119070			
Client ID:	PBW	Batch ID:	R119070	TestNo:	SM 2320 B			Analysis Date:	10/31/2017	SeqNo:	2824831			
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	N026689-002DMS	SampType:	MS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	119070			
Client ID:	ZZZZZ	Batch ID:	R119070	TestNo:	SM 2320 B			Analysis Date:	10/31/2017	SeqNo:	2824834			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)		171.806		5.0	100.0	79.30		92.5	75	125				

Sample ID	N026689-002DMSD	SampType:	MSD	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	119070			
Client ID:	ZZZZZ	Batch ID:	R119070	TestNo:	SM 2320 B			Analysis Date:	10/31/2017	SeqNo:	2824835			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)		174.009		5.0	100.0	79.30		94.7	75	125	171.8	1.27	20	

Sample ID	N026714-003CDUP	SampType:	DUP	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	119070			
Client ID:	ZZZZZ	Batch ID:	R119070	TestNo:	SM 2320 B			Analysis Date:	10/31/2017	SeqNo:	2824844			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)		411.894		5.0							407.5	1.08	30	

Qualifiers:

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-001

Client Sample ID: CW-01D-Q417
Collection Date: 10/25/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE

EPA 245.1

RunID: NV00922-AA1_171027A	QC Batch: 64406			PrepDate	10/26/2017		Analyst: MG
Mercury	ND	0.087	0.20		µg/L	1	10/27/2017 11:04 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-002

Client Sample ID: CW-01M-Q417
Collection Date: 10/25/2017 11:22:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE

EPA 245.1

RunID: NV00922-AA1_171027A	QC Batch: 64406			PrepDate	10/26/2017	Analyst: MG
Mercury	ND	0.087	0.20	µg/L	1	10/27/2017 11:06 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-006

Client Sample ID: OW-05D-Q417
Collection Date: 10/25/2017 3:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE

EPA 245.1

RunID: NV00922-AA1_171027A	QC Batch: 64406			PrepDate	10/26/2017	Analyst: MG
Mercury	ND	0.087	0.20	µg/L	1	10/27/2017 11:09 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-007

Client Sample ID: OW-05M-Q417
Collection Date: 10/25/2017 2:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE

EPA 245.1

RunID: NV00922-AA1_171027E	QC Batch: 64406			PrepDate	10/26/2017		Analyst: MG
Mercury	ND	0.087	0.20		µg/L	1	10/27/2017 12:24 PM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_WD

Sample ID MB-64406	SampType: MBLK	TestCode: 245.1_WD	Units: µg/L	Prep Date: 10/26/2017	RunNo: 118854
Client ID: PBW	Batch ID: 64406	TestNo: EPA 245.1		Analysis Date: 10/27/2017	SeqNo: 2819457
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury	ND	0.20			
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Sample ID LCS-64406	SampType: LCS	TestCode: 245.1_WD	Units: µg/L	Prep Date: 10/26/2017	RunNo: 118854
Client ID: LCSW	Batch ID: 64406	TestNo: EPA 245.1		Analysis Date: 10/27/2017	SeqNo: 2819458
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury	4.701	0.20	5.000	0	94.0 85 115
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Sample ID N026645-001G-MS	SampType: MS	TestCode: 245.1_WD	Units: µg/L	Prep Date: 10/26/2017	RunNo: 118854
Client ID: ZZZZZ	Batch ID: 64406	TestNo: EPA 245.1		Analysis Date: 10/27/2017	SeqNo: 2819459
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury	4.885	0.20	5.000	0	97.7 75 125
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Sample ID N026645-001G-MSD	SampType: MSD	TestCode: 245.1_WD	Units: µg/L	Prep Date: 10/26/2017	RunNo: 118854
Client ID: ZZZZZ	Batch ID: 64406	TestNo: EPA 245.1		Analysis Date: 10/27/2017	SeqNo: 2819460
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury	4.846	0.20	5.000	0	96.9 75 125 4.885 0.809 20
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Qualifiers:

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-001

Client Sample ID: CW-01D-Q417
Collection Date: 10/25/2017 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_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Chloride	2100	4.6	250		mg/L	500	10/26/2017 10:35 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Fluoride	2.5	0.032	0.50		mg/L	5	10/26/2017 07:32 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Sulfate	470	1.1	25		mg/L	50	10/27/2017 12:53 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-002

Client Sample ID: CW-01M-Q417
Collection Date: 10/25/2017 11:22:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Chloride	2200	4.6	250		mg/L	500	10/26/2017 10:51 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Fluoride	2.3	0.032	0.50		mg/L	5	10/26/2017 08:48 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Sulfate	480	1.1	25		mg/L	50	10/27/2017 01:08 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-003

Client Sample ID: OW-01D-Q417
Collection Date: 10/25/2017 1:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Chloride	2100	4.6	250		mg/L	500	10/26/2017 11:06 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Fluoride	2.2	0.032	0.50		mg/L	5	10/26/2017 09:04 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Sulfate	470	1.1	25		mg/L	50	10/27/2017 01:24 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-004

Client Sample ID: OW-02D-Q417
Collection Date: 10/25/2017 8:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Chloride	2200	4.6	250		mg/L	500	10/26/2017 11:21 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Fluoride	2.4	0.032	0.50		mg/L	5	10/26/2017 09:49 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Sulfate	480	1.1	25		mg/L	50	10/27/2017 01:39 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-005

Client Sample ID: OW-02M-Q417
Collection Date: 10/25/2017 9:46:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Chloride	2100	4.6	250		mg/L	500	10/26/2017 11:36 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Fluoride	2.4	0.032	0.50		mg/L	5	10/26/2017 10:05 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Sulfate	470	1.1	25		mg/L	50	10/27/2017 01:54 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-006

Client Sample ID: OW-05D-Q417
Collection Date: 10/25/2017 3:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Chloride	2000	4.6	250		mg/L	500	10/26/2017 11:52 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Fluoride	2.5	0.032	0.50		mg/L	5	10/26/2017 10:20 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Sulfate	460	1.1	25		mg/L	50	10/27/2017 02:09 AM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-007

Client Sample ID: OW-05M-Q417
Collection Date: 10/25/2017 2:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Chloride	2100	4.6	250		mg/L	500	10/27/2017 12:07 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Fluoride	2.6	0.032	0.50		mg/L	5	10/26/2017 08:18 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_171026A	QC Batch: R118880				PrepDate		Analyst: RAB
Sulfate	470	1.1	25		mg/L	50	10/27/2017 02:25 AM

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



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"Servina Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R118880_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	PBW	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813427			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		0.131		0.50										

Sample ID	LCS-R118880_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	LCSW	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813428			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		1.992		0.50	2.000	0		99.6	90	110				

Sample ID	N026645-001CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	ZZZZZ	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813434			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		191.530		25							191.2	0.157	20	

Sample ID	N026645-001CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	ZZZZZ	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813435			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		295.510		25	100.0	191.2		104	80	120				

Sample ID	N026645-001CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	ZZZZZ	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813436			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		293.490		25	100.0	191.2		102	80	120	295.5	0.686	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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID: N026679-001CMS	SampType: MS	TestCode: 300_W_CLP	Units: mg/L	Prep Date:	RunNo: 118880						
Client ID: ZZZZZZ	Batch ID: R118880	TestNo: EPA 300.0		Analysis Date: 10/26/2017	SeqNo: 2813438						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	324.810	25	100.0	216.7	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 | |



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPG

Sample ID	MB-R118880_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	PBW	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813323			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride ND 0.10

Sample ID	LCS-R118880_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	LCSW	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813324			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 1.267 0.10 1.250 0 101 90 110

Sample ID	N026689-001DMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	ZZZZZ	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813333			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 8.576 0.50 6.250 2.545 96.5 80 120

Sample ID	N026689-001DMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	ZZZZZ	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813334			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 8.820 0.50 6.250 2.545 100 80 120 8.576 2.81 20

Sample ID	N026689-007DDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	ZZZZZ	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813336			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 2.685 0.50 2.580 3.99 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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R118880_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	PBW	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813462			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		0.214		0.50										

Sample ID	LCS-R118880_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	LCSW	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813463			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		3.917		0.50	4.000	0		97.9	90	110				

Sample ID	N026645-001CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	ZZZZZZ	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813475			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		99.336		5.0							96.99	2.39	20	

Sample ID	N026645-001CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	ZZZZZZ	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813478			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		138.158		5.0	40.00	96.99		103	80	120				

Sample ID	N026645-001CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	118880			
Client ID:	ZZZZZZ	Batch ID:	R118880	TestNo:	EPA 300.0			Analysis Date:	10/26/2017	SeqNo:	2813479			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		138.253		5.0	40.00	96.99		103	80	120	138.2	0.0687	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 |

Calculations are based on raw values

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID N026679-002CMS	SampType: MS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 118880						
Client ID: ZZZZZZ	Batch ID: R118880	TestNo: EPA 300.0		Analysis Date: 10/26/2017	SeqNo: 2813480						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	126.948	5.0	40.00	86.34	102	80	120				

Qualifiers:

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-001

Client Sample ID: CW-01D-Q417
Collection Date: 10/25/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171027A	QC Batch: R118851				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.7	0.16	0.25		mg/L	5	10/27/2017

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-002

Client Sample ID: CW-01M-Q417
Collection Date: 10/25/2017 11:22:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171027A	QC Batch: R118851				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.7	0.16	0.25		mg/L	5	10/27/2017

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-004

Client Sample ID: OW-02D-Q417
Collection Date: 10/25/2017 8:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171027A	QC Batch: R118851				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.7	0.16	0.25		mg/L	5	10/27/2017

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-005

Client Sample ID: OW-02M-Q417
Collection Date: 10/25/2017 9:46:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171027A	QC Batch: R118851				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.9	0.16	0.25		mg/L	5	10/27/2017

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-006

Client Sample ID: OW-05D-Q417
Collection Date: 10/25/2017 3:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171027A	QC Batch: R118851				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.6	0.16	0.25		mg/L	5	10/27/2017

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-007

Client Sample ID: OW-05M-Q417
Collection Date: 10/25/2017 2:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: NV00922-WC_171027A	QC Batch: R118851				PrepDate		Analyst: QBM
Nitrate/Nitrite as N	2.7	0.16	0.25		mg/L	5	10/27/2017

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID MB-R118851	SampType: MBLK	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118851
Client ID: PBW	Batch ID: R118851	TestNo: SM4500-NO3		Analysis Date: 10/27/2017	SeqNo: 2811131
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-R118851	SampType: LCS	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118851
Client ID: LCSW	Batch ID: R118851	TestNo: SM4500-NO3		Analysis Date: 10/27/2017	SeqNo: 2811132
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	0.501	0.050	0.5000	0	100 85 115

Sample ID N026689-001EDUP	SampType: DUP	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118851
Client ID: ZZZZZ	Batch ID: R118851	TestNo: SM4500-NO3		Analysis Date: 10/27/2017	SeqNo: 2811134
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	2.748	0.25			2.670 2.90 20

Sample ID N026689-004DMS	SampType: MS	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118851
Client ID: ZZZZZ	Batch ID: R118851	TestNo: SM4500-NO3		Analysis Date: 10/27/2017	SeqNo: 2811140
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	5.025	0.25	2.500	2.714	92.4 75 125

Sample ID N026689-004DMSD	SampType: MSD	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 118851
Client ID: ZZZZZ	Batch ID: R118851	TestNo: SM4500-NO3		Analysis Date: 10/27/2017	SeqNo: 2811141
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	5.217	0.25	2.500	2.714	100 75 125 5.025 3.75 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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-001

Client Sample ID: CW-01D-Q417
Collection Date: 10/25/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

EPA 3010A

EPA 6010B

RunID: NV00922-ICP2_171028C	QC Batch: 64404			PrepDate	10/26/2017	Analyst: CEI
Iron	ND	1.8	20	ug/L	1	10/29/2017 12:52 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-002

Client Sample ID: CW-01M-Q417
Collection Date: 10/25/2017 11:22:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

EPA 3010A

EPA 6010B

RunID: NV00922-ICP2_171028C	QC Batch: 64404			PrepDate	10/26/2017		Analyst: CEI
Iron	ND	1.8	20	ug/L		1	10/29/2017 12:58 PM

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-006

Client Sample ID: OW-05D-Q417
Collection Date: 10/25/2017 3:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

EPA 3010A

EPA 6010B

RunID: NV00922-ICP2_171028C	QC Batch: 64404			PrepDate	10/26/2017	Analyst: CEI	
Iron	29	1.8	20	ug/L	1	10/29/2017 01:32 PM	

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



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ANALYTICAL RESULTS

Print Date: 14-Nov-17

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N026689
Project: PG&E Topock - CMP, RC000753.801B
Lab ID: N026689-007

Client Sample ID: OW-05M-Q417
Collection Date: 10/25/2017 2:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

EPA 3010A

EPA 6010B

RunID: NV00922-ICP2_171028C	QC Batch: 64404			PrepDate	10/26/2017		Analyst: CEI
Iron	ND	1.8	20	ug/L	1		10/29/2017 01:38 PM

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



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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N026689
Project: PG&E Topock - CMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPB

Sample ID MB-64404	SampType: MBLK	TestCode: 6010_WPGE	Units: ug/L	Prep Date: 10/26/2017	RunNo: 118868
Client ID: PBW	Batch ID: 64404	TestNo: EPA 6010B EPA 3010A		Analysis Date: 10/29/2017	SeqNo: 2816770
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Iron	ND	20			

Sample ID LCS-64404	SampType: LCS	TestCode: 6010_WPGE	Units: ug/L	Prep Date: 10/26/2017	RunNo: 118868
Client ID: LCSW	Batch ID: 64404	TestNo: EPA 6010B EPA 3010A		Analysis Date: 10/29/2017	SeqNo: 2816771
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Iron	109.831	20	100.0	0	110 85 115

Sample ID N026661-001F-MS	SampType: MS	TestCode: 6010_WPGE	Units: ug/L	Prep Date: 10/26/2017	RunNo: 118868
Client ID: ZZZZZ	Batch ID: 64404	TestNo: EPA 6010B EPA 3010A		Analysis Date: 10/29/2017	SeqNo: 2816777
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Iron	113.015	20	100.0	7.077	106 75 125

Sample ID N026661-001F-MSD	SampType: MSD	TestCode: 6010_WPGE	Units: ug/L	Prep Date: 10/26/2017	RunNo: 118868
Client ID: ZZZZZ	Batch ID: 64404	TestNo: EPA 6010B EPA 3010A		Analysis Date: 10/29/2017	SeqNo: 2816778
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Iron	112.093	20	100.0	7.077	105 75 125 113.0 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



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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: 10/25/2017 Workorder: N026689
 Rep sample Temp (Deg C): 0.3/3.1 IR Gun ID: 1
 Temp Blank: Yes No
 Carrier name: ASSET
 Last 4 digits of Tracking No.: NA Packing Material Used: None
 Cooling process: Ice Ice Pack Dry Ice Other None

Sample Receipt Checklist

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

Comments:

Checklist Completed By: YR  11/5/2017

Reviewed By:  11/07/2017



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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: SIGNED

26-Oct-17

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3D		
N026689-001B / CW-01D-Q417	Groundwater	10/25/2017 10:45:00 AM	32OZP	1		
N026689-002B / CW-01M-Q417	Groundwater	10/25/2017 11:22:00 AM	32OZP	1		
N026689-006B / OW-05D-Q417	Groundwater	10/25/2017 3:21:00 PM	32OZP	1		
N026689-007B / OW-05M-Q417	Groundwater	10/25/2017 2:22:00 PM	32OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N26689A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. Please report Level IV package. EDD Requirement Labspec7 edata.

GSO #: 538140545

		Date/Time			Date/Time
Relinquished by:		10/26/2017	17:00	Received by:	
Relinquished by:				Received by:	

ASSET Laboratories

WORK ORDER Summary

26-Oct-17

WorkOrder: N026689

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/25/2017

Comments: RWQCB Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026689-001A	CW-01D-Q417	10/25/2017 10:45:00 AM	11/8/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-001B			11/8/2017		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	WW
N026689-001C			11/8/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-001D			11/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-001E			11/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-001F			11/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-002A	CW-01M-Q417	10/25/2017 11:22:00 AM	11/8/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW

ASSET Laboratories

WORK ORDER Summary

26-Oct-17

WorkOrder: N026689

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/25/2017

Comments: RWQCB Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026689-002B	CW-01M-Q417	10/25/2017 11:22:00 AM	11/8/2017	Groundwater	SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	WW
N026689-002C			11/8/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-002D			11/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-002E			11/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-002F			11/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-003A	OW-01D-Q417	10/25/2017 1:12:00 PM	11/8/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-003B			11/8/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW

ASSET Laboratories

WORK ORDER Summary

26-Oct-17

WorkOrder: N026689

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/25/2017

Comments: RWQCB Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026689-003B	OW-01D-Q417	10/25/2017 1:12:00 PM	11/8/2017	Groundwater	EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-003C			11/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-003D			11/8/2017							
N026689-004A	OW-02D-Q417	10/25/2017 8:58:00 AM	11/8/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-004B			11/8/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-004C			11/8/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017							

ASSET Laboratories

WORK ORDER Summary

26-Oct-17

WorkOrder: N026689

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/25/2017

Comments: RWQCB Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026689-004C	OW-02D-Q417	10/25/2017 8:58:00 AM	11/8/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-004D			11/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-005A	OW-02M-Q417	10/25/2017 9:46:00 AM	11/8/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-005B			11/8/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-005C			11/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-005D			11/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-006A	OW-05D-Q417	10/25/2017 3:21:00 PM	11/8/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-006B			11/8/2017		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	WW
N026689-006C			11/8/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW

ASSET Laboratories

WORK ORDER Summary

26-Oct-17

WorkOrder: N026689

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/25/2017

Comments: RWQCB Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026689-006C	OW-05D-Q417	10/25/2017 3:21:00 PM	11/8/2017	Groundwater	EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-006D			11/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-006E			11/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-006F			11/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-007A	OW-05M-Q417	10/25/2017 2:22:00 PM	11/8/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-007B			11/8/2017		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	WW
N026689-007C			11/8/2017			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.7	DISSOLVED METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW

ASSET Laboratories

WORK ORDER Summary

26-Oct-17

WorkOrder: N026689

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.801B

QC Level: Level IV

Date Received: 10/25/2017

Comments: RWQCB Title 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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N026689-007C	OW-05M-Q417	10/25/2017 2:22:00 PM	11/8/2017	Groundwater		AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			DISSOLVED MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-007D			11/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		SM 2320 B	ALKALINITY, SPECIATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-007E			11/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-007F			11/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			11/8/2017		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-008A	MW-709-0417	10/25/2017 3:40:00 PM	11/8/2017		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N026689-009A	FOLDER	11/8/2017	11/8/2017		EDD	RWQCB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			11/8/2017		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			11/8/2017		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB



Date of Report: 11/07/2017

Marlon Cartin

ASSET Laboratories
3151-3153 W. Post Rd
Las Vegas, NV 89118

Client Project: N026689
BCL Project: CH2M Hill
BCL Work Order: 1730690
Invoice ID: B284634

Enclosed are the results of analyses for samples received by the laboratory on 10/27/2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Vanessa Sandoval
Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com



Table of Contents

Sample Information

Chain of Custody and Cooler Receipt form.....	3
Laboratory / Client Sample Cross Reference.....	5

Sample Results

1730690-01 - N026689-001B/ CW-01D-Q417	
Water Analysis (General Chemistry).....	6
1730690-02 - N026689-002B/ CW-01M-Q417	
Water Analysis (General Chemistry).....	7
1730690-03 - N026689-006B/ OW-05D-Q417	
Water Analysis (General Chemistry).....	8
1730690-04 - N026689-007B/ OW-05M-Q417	
Water Analysis (General Chemistry).....	9

Quality Control Reports

Water Analysis (General Chemistry)

Method Blank Analysis.....	10
Laboratory Control Sample.....	11
Precision and Accuracy.....	12

Notes

Notes and Definitions.....	13
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CHAIN-OF-CUSTODY RECORD

ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118
www.asset-labs.com
TEL: 7023072659 FAX: 7023072691



Subcontractor:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

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

QC Level: Level IV

Field Sampler: SIGNED

17-30690

26-Oct-17

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests	
				SM4500-NH3D	
N026689-001B / CW-01D-Q417	Groundwater	10/25/2017 10:45:00 AM	320ZP	1	
N026689-002B / CW-01M-Q417	Groundwater	10/25/2017 11:22:00 AM	320ZP	1	
N026689-006B / OW-05D-Q417	Groundwater	10/25/2017 3:21:00 PM	320ZP	1	
N026689-007B / OW-05M-Q417	Groundwater	10/25/2017 2:22:00 PM	320ZP	1	

CHK BY [Signature] DISTRIBUTION
SUB-OUT

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO# N26689A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. Please report Level IV package. EDD Requirement Labspec7 edata.

GSO #: 538140545

Relinquished by: [Signature] Date/Time: 10/26/2017 17:00

Relinquished by: [Signature] Date/Time: 10/27/17 09:22



Chain of Custody and Cooler Receipt Form for 1730690 Page 2 of 2

BC LABORATORIES INC.		COOLER RECEIPT FORM			Page <u> </u> Of <u> </u>					
Submission #: <u>17-30090</u>										
SHIPPING INFORMATION Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input type="checkbox"/> Other <input checked="" type="checkbox"/> (Specify) <u>GSD</u>			SHIPPING CONTAINER Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) <u> </u>		FREE LIQUID YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> <u>W</u> <u>S</u>					
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: <u> </u>										
Custody Seals Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: <u> </u> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>										
All samples received? Yes <input type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input type="checkbox"/> No <input type="checkbox"/>										
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <u>0.95</u> Container: <u>STP</u> Thermometer ID: <u>274</u>		Date/Time: <u>10/27/17</u>		Analyst Init: <u>AD</u>				
Temperature: (A) <u>0-0</u> °C / (C) <u>0-1</u> °C										
SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr ⁶⁺										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS <u>602</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>						
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: Date/Time: 10/27/17 1600 Rev 21 05/23/2016
 Sample Numbering Completed By:
 A = Actual / C = Corrected (S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMREC rev 20)



ASSET Laboratories
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 11/07/2017 16:38
Project: CH2M Hill
Project Number: N026689
Project Manager: Marlon Cartin

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1730690-01	COC Number:	---	Receive Date:	10/27/2017 09:22
	Project Number:	---	Sampling Date:	10/25/2017 10:45
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	N026689-001B/ CW-01D-Q417	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Groundwater
1730690-02	COC Number:	---	Receive Date:	10/27/2017 09:22
	Project Number:	---	Sampling Date:	10/25/2017 11:22
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	N026689-002B/ CW-01M-Q417	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Groundwater
1730690-03	COC Number:	---	Receive Date:	10/27/2017 09:22
	Project Number:	---	Sampling Date:	10/25/2017 15:21
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	N026689-006B/ OW-05D-Q417	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Groundwater
1730690-04	COC Number:	---	Receive Date:	10/27/2017 09:22
	Project Number:	---	Sampling Date:	10/25/2017 14:22
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	N026689-007B/ OW-05M-Q417	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Groundwater



ASSET Laboratories
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Reported: 11/07/2017 16:38
Project: CH2M Hill
Project Number: N026689
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

BCL Sample ID: 1730690-01	Client Sample Name: N026689-001B/ CW-01D-Q417, 10/25/2017 10:45:00AM, Client
----------------------------------	---

Constituent	Dry Basis Result	As Recvd Result	Units	As Received PQL	Method	MB Bias	Lab Quals	Run #
Ammonia as N (Distilled)		ND	mg/L	1.0	SM-4500-NH3G	ND	A07	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	SM-4500-NH3G	11/06/17	11/06/17 18:21	JMH	SC-1	5	B[K0422

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
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Reported: 11/07/2017 16:38
Project: CH2M Hill
Project Number: N026689
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

BCL Sample ID: 1730690-02	Client Sample Name: N026689-002B/ CW-01M-Q417, 10/25/2017 11:22:00AM, Client
----------------------------------	---

Constituent	Dry Basis Result	As Recvd Result	Units	As Received PQL	Method	MB Bias	Lab Quals	Run #
Ammonia as N (Distilled)		ND	mg/L	1.0	SM-4500-NH3G	ND	A07	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	SM-4500-NH3G	11/06/17	11/06/17 18:22	JMH	SC-1	5	B[K0422



ASSET Laboratories
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Las Vegas, NV 89118

Reported: 11/07/2017 16:38
Project: CH2M Hill
Project Number: N026689
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

BCL Sample ID: 1730690-03	Client Sample Name: N026689-006B/ OW-05D-Q417, 10/25/2017 3:21:00PM, Client
----------------------------------	--

Constituent	Dry Basis Result	As Recvd Result	Units	As Received PQL	Method	MB Bias	Lab Quals	Run #
Ammonia as N (Distilled)		ND	mg/L	1.0	SM-4500-NH3G	ND	A07	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	SM-4500-NH3G	11/02/17	11/02/17 13:48	JMH	SC-1	5	B[K0153



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Reported: 11/07/2017 16:38
Project: CH2M Hill
Project Number: N026689
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

BCL Sample ID: 1730690-04	Client Sample Name: N026689-007B/ OW-05M-Q417, 10/25/2017 2:22:00PM, Client
----------------------------------	--

Constituent	Dry Basis Result	As Recvd Result	Units	As Received PQL	Method	MB Bias	Lab Quals	Run #
Ammonia as N (Distilled)		1.2	mg/L	1.0	SM-4500-NH3G	ND	A07	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	SM-4500-NH3G	11/06/17	11/06/17 18:23	JMH	SC-1	5	B[K0422

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ASSET Laboratories
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Las Vegas, NV 89118

Reported: 11/07/2017 16:38
Project: CH2M Hill
Project Number: N026689
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[K0153]						
Ammonia as N (Distilled)	B[K0153-BLK1	ND	mg/L	0.20		
QC Batch ID: B[K0422]						
Ammonia as N (Distilled)	B[K0422-BLK1	ND	mg/L	0.20		



ASSET Laboratories
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Las Vegas, NV 89118

Reported: 11/07/2017 16:38
Project: CH2M Hill
Project Number: N026689
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[K0153]										
Ammonia as N (Distilled)	B[K0153-BS1	LCS	1.0816	1.0000	mg/L	108		85 - 115		
QC Batch ID: B[K0422]										
Ammonia as N (Distilled)	B[K0422-BS1	LCS	1.0700	1.0000	mg/L	107		85 - 115		



ASSET Laboratories
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 11/07/2017 16:38
Project: CH2M Hill
Project Number: N026689
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits				
								Percent Recovery	RPD	Percent Recovery	Lab Quals	
QC Batch ID: B[K0153]		Used client sample: Y - Description: N026689-006B/ OW-05D-Q417, 10/25/2017 15:21										
Ammonia as N (Distilled)	DUP	730690-03RE	ND	ND		mg/L					20	
	MS	730690-03RE	ND	24.270	25.000	mg/L		97.1			80 - 120	
	MSD	730690-03RE	ND	25.385	25.000	mg/L	4.5	102	20		80 - 120	
QC Batch ID: B[K0422]		Used client sample: Y - Description: N026661-001B/ CW-02D-Q417, 10/24/2017 14:51										
Ammonia as N (Distilled)	DUP	730587-01RE	0.52700	ND		mg/L					20	
	MS	730587-01RE	0.52700	5.6105	5.0000	mg/L		102			80 - 120	
	MSD	730587-01RE	0.52700	5.4765	5.0000	mg/L	2.4	99.0	20		80 - 120	



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Las Vegas, NV 89118

Reported: 11/07/2017 16:38
Project: CH2M Hill
Project Number: N026689
Project Manager: Marlon Cartin

Notes And Definitions

- MDL Method Detection Limit
- ND Analyte Not Detected
- PQL Practical Quantitation Limit
- A07 Detection and quantitation limits were raised due to sample dilution caused by high analyte concentration or matrix interference.

APPENDIX B

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





Design & Consultancy
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built assets

GROUNDWATER ELEVATION DATA

PROJECT NAME: PG&E Topock CMP
PROJECT LOCATION: Needles, California
MEASUREMENT DATE: 2/6/17
PERSONNEL ON SITE: JM

PROJECT NO.: RC000753.801B
TASK: CMP quarterly snapshot
MEASURING DEVICE: Water level indicator
WEATHER CONDITIONS: —

Monitoring Well Number	Date	Time	Depth to Groundwater (ft btoc)	COMMENTS
CW-1D	2/6/17	1133	110.50	—
CW-1M	2/6/17	1133	110.52	—
CW-2D	2/6/17	1127	93.57	—
CW-2M	2/6/17	1128	94.00	—
CW-3D	2/6/17	1124	78.23	—
CW-3M	2/6/17	1124	78.85	—
CW-4D	2/6/17	1154	62.74	—
CW-4M	2/6/17	1154	62.85	—
OW-1D	2/6/17	1138	94.05	—
OW-1M	2/6/17	1136	94.48	—
OW-1S	2/6/17	1136	94.93	—
OW-2D	2/6/17	1141	92.42	—
OW-2M	2/6/17	1141	92.38	—
OW-2S	2/6/17	1143	93.62	—
OW-5D	2/6/17	1147	96.28	—
OW-5M	2/6/17	1149	95.67	—
OW-5S	2/6/17	1147	96.34	—



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GROUNDWATER ELEVATION DATA

PROJECT NAME: PG&E Topock CMP
PROJECT LOCATION: Needles, California
MEASUREMENT DATE: 4/26/17
PERSONNEL ON SITE: JM

PROJECT NO.: RC000753.801B
TASK: CMP quarterly snapshot
MEASURING DEVICE: Water level indicator
WEATHER CONDITIONS: —

Monitoring Well Number	Date	Time	Depth to Groundwater (ft btoc)	COMMENTS
CW-1D	4/26/17	0838	109.10	—
CW-1M	4/26/17	0834	108.41	—
CW-2D	4/26/17	0819	91.81	—
CW-2M	4/26/17	0817	92.30	—
CW-3D	4/26/17	0824	76.94	—
CW-3M	4/26/17	0827	77.14	—
CW-4D	4/26/17	0913	61.23	—
CW-4M	4/26/17	0915	61.32	—
OW-1D	4/26/17	0909	92.87	—
OW-1M	4/26/17	0907	93.12	—
OW-1S	4/26/17	0904	93.30	—
OW-2D	4/26/17	0857	91.50	—
OW-2M	4/26/17	0858	91.42	—
OW-2S	4/26/17	0900	91.92	—
OW-5D	4/26/17	0844	92.48	—
OW-5M	4/26/17	0845	93.48	—
OW-5S	4/26/17	0842	94.60	—



Design & Consultancy
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GROUNDWATER ELEVATION DATA

PROJECT NAME: PG&E Topock CMP
PROJECT LOCATION: Needles, California
MEASUREMENT DATE: 9/8/17
PERSONNEL ON SITE: JD

PROJECT NO.: RC000753.801B
TASK: CMP quarterly snapshot
MEASURING DEVICE: Water level indicator
WEATHER CONDITIONS: —

Monitoring Well Number	Date	Time	Depth to Groundwater (ft btoc)	COMMENTS
CW-1D	9/8/17	0848	109.27	—
CW-1M	9/8/17	0849	109.31	—
CW-2D	9/8/17	0845	92.31	—
CW-2M	9/8/17	0844	92.45	—
CW-3D	9/8/17	0840	76.93	—
CW-3M	9/8/17	0842	77.61	—
CW-4D	9/8/17	0916	61.42	—
CW-4M	9/8/17	0920	61.64	—
OW-1D	9/8/17	0854	92.78	—
OW-1M	9/8/17	0852	93.38	—
OW-1S	9/8/17	0856	93.67	—
OW-2D	9/8/17	0859	90.84	—
OW-2M	9/8/17	0903	91.41	—
OW-2S	9/8/17	0901	92.31	—
OW-5D	9/8/17	0911	94.89	—
OW-5M	9/8/17	0908	94.46	—
OW-5S	9/8/17	0907	95.16	—



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GROUNDWATER ELEVATION DATA

PROJECT NAME: PG&E Topock CMP
PROJECT LOCATION: Needles, California
MEASUREMENT DATE: 12/4/17
PERSONNEL ON SITE: JD

PROJECT NO.: RC000753.801B
TASK: CMP quarterly snapshot
MEASURING DEVICE: Water level indicator
WEATHER CONDITIONS: Sunny, windy

Monitoring Well Number	Date	Time	Depth to Groundwater (ft btoc)	COMMENTS
CW-1D	12/4/17	1133	109.92	—
CW-1M	12/4/17	1135	109.94	—
CW-2D	12/4/17	1128	93.04	—
CW-2M	12/4/17	1126	93.51	—
CW-3D	12/4/17	1120	77.72	—
CW-3M	12/4/17	1123	78.34	—
CW-4D	12/4/17	1212	62.05	—
CW-4M	12/4/17	1210	62.22	—
OW-1D	12/4/17	1140	93.87	—
OW-1M	12/4/17	1142	94.12	—
OW-1S	12/4/17	1138	94.36	—
OW-2D	12/4/17	1148	92.79	—
OW-2M	12/4/17	1152	92.28	—
OW-2S	12/4/17	1150	93.02	—
OW-5D	12/4/17	1200	95.26	—
OW-5M	12/4/17	1158	94.59	—
OW-5S	12/4/17	1156	95.82	—

CW-01D

Date	10/24/2017	Weather Conditions		Depth to Water (ft bmp)	109.52
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	31.07
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	300
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	93.21
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	190.48
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/24/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
10:17	3	16	27.6	7.52	7438	98	3.29	1	109.80	4.08	4.82
10:22	3	32	27.8	7.61	7496	98	5.65	1	109.80	4.11	4.87
10:27	3	48	27.9	7.66	7549	103	6.75	1	109.80	4.14	4.90
10:32	3	64	27.9	7.67	7553	105	6.78	1	109.80	4.15	4.90
10:38	3	80	27.9	7.67	7560	106	6.82	1	109.80	4.15	4.90
10:44	3	96	27.9	7.67	7563	107	6.75	1	109.80	4.15	4.91

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/25/2017	Double Filter Turbidity	--
Sample Time	10:45	Color	Clear
Sample ID	CW-01D-Q417	Odor	none
Duplicate Sample ID	--	MS/MSD Sample Time	--
Dup Sample Time	--	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	--
Without Filter Turbidity	--	EB Sample ID	--

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Groundwater Monitoring Field Data Form

Site: PGE Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings

CW-01M

Date	10/25/2017	Weather Conditions		Depth to Water (ft bmp)	109.45
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	13.14
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	190
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	39.42
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	80.55
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/25/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
11:03	2	7	27.7	7.59	7701	97	6.64	1	109.71	4.24	5.00
11:06	2	14	27.7	7.58	7699	99	6.60	1	109.71	4.24	5.00
11:10	2	21	27.7	7.58	7703	99	6.64	1	109.71	4.24	5.00
11:13	2	28	27.7	7.58	7703	100	6.63	1	109.71	4.24	5.00
11:17	2	35	27.7	7.58	7709	101	6.62	1	109.71	4.24	5.00
11:21	2	42	27.7	7.59	7712	104	6.62	1	109.71	4.24	5.00

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/25/2017	Double Filter Turbidity	--
Sample Time	11:22	Color	Clear
Sample ID	CW-01M-Q417	Odor	none
Duplicate Sample ID	--	MS/MSD Sample Time	--
Dup Sample Time	--	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	--
Without Filter Turbidity	--	EB Sample ID	--

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Groundwater Monitoring Field Data Form

Site: PGE Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings

CW-02D

Date	10/24/2017	Weather Conditions		Depth to Water (ft bmp)	92.84
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	42.76
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	355
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	128.28
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	262.16
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/24/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
14:13	3	22	29.1	7.90	8207	-96	5.33	1	93.13	4.52	5.33
14:20	3	44	29.1	7.88	8180	-81	5.97	1	93.13	4.53	5.33
14:27	3	66	29.0	7.86	8182	-82	6.85	1	93.13	4.51	5.31
14:34	3	88	28.9	7.81	8173	-86	6.93	1	93.13	4.51	5.31
14:41	3	110	28.9	7.81	8175	-88	6.90	1	93.13	4.51	5.31
14:50	3	132	28.9	7.80	8177	-89	6.88	1	93.13	4.51	5.31

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/24/2017	Double Filter Turbidity	--
Sample Time	14:51	Color	Clear
Sample ID	CW-02D-Q417	Odor	none
Duplicate Sample ID	MW-901-Q417	MS/MSD Sample Time	--
Dup Sample Time	15:01	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	--
Without Filter Turbidity	--	EB Sample ID	--

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings



CW-02M

Date	10/24/2017	Weather Conditions		Depth to Water (ft bmp)	92.93
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	17.79
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	202
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	53.37
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	109.07
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/24/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
15:09	2	9	29.0	7.79	8256	-95	6.75	2	93.20	4.55	5.36
15:13	2	18	29.0	7.79	8255	-98	6.75	1	93.20	4.55	5.36
15:18	2	27	29.0	7.79	8260	-102	6.75	1	93.20	4.55	5.36
15:22	2	36	29.1	7.79	8251	-103	6.65	1	93.20	4.55	5.36
15:27	2	45	29.1	7.79	8244	-105	6.68	1	93.20	4.55	5.36
15:31	2	54	29.1	7.79	8236	-107	6.70	1	93.20	4.55	5.36

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/24/2017	Double Filter Turbidity	--
Sample Time	15:32	Color	Clear
Sample ID	CW-02M-Q417	Odor	none
Duplicate Sample ID	--	MS/MSD Sample Time	--
Dup Sample Time	--	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	16:00
Without Filter Turbidity	--	EB Sample ID	MW-708-Q417

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Groundwater Monitoring Field Data Form

Site: PGE Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings



CW-03D

Date	10/24/2017	Weather Conditions		Depth to Water (ft bmp)	77.66
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	42.79
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	340
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	128.37
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	262.34
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/24/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
13:03	3	24	29.2	7.98	8239	-73	5.85	1	78.06	4.54	5.35
13:11	3	48	29.4	7.98	8252	-75	6.73	1	78.06	4.55	5.35
13:19	3	72	29.5	7.95	8248	-78	6.76	1	78.06	4.55	5.36
13:27	3	96	29.5	7.93	8240	-80	6.80	1	78.06	4.55	5.36
13:35	3	120	29.5	7.92	8247	-82	6.76	1	78.06	4.55	5.36
13:39	3	132	29.5	7.92	8244	-83	6.71	1	78.06	4.55	5.36

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/24/2017	Double Filter Turbidity	--
Sample Time	13:40	Color	Clear
Sample ID	CW-03D-Q417	Odor	none
Duplicate Sample ID	--	MS/MSD Sample Time	--
Dup Sample Time	--	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	--
Without Filter Turbidity	--	EB Sample ID	--

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Groundwater Monitoring Field Data Form

Site: PGE Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings

CW-03M

Date	10/24/2017	Weather Conditions		Depth to Water (ft bmp)	77.95
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	23.5
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	222
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	70.5
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	144.05
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/24/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
12:07	2	12	29.1	7.60	9211	-95	4.31	1	78.09	5.12	5.98
12:13	2	24	29.2	7.63	9053	-89	4.81	1	78.09	5.03	5.88
12:19	2	36	29.3	7.64	8979	-89	4.98	1	78.09	4.98	5.83
12:25	2	48	29.3	7.65	8993	-92	4.99	1	78.09	4.99	5.84
12:31	2	60	29.4	7.66	8982	-93	5.00	1	78.09	4.98	5.83
12:37	2	72	29.4	7.66	8976	-95	5.03	1	78.09	4.98	5.83

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/24/2017	Double Filter Turbidity	--
Sample Time	12:38	Color	--
Sample ID	CW-03M-Q417	Odor	none
Duplicate Sample ID	--	MS/MSD Sample Time	--
Dup Sample Time	--	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	--
Without Filter Turbidity	--	EB Sample ID	--

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Groundwater Monitoring Field Data Form

Site: PGE Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings

CW-04D

Date	10/24/2017	Weather Conditions		Depth to Water (ft bmp)	61.82
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	39.34
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	303
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	118.02
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	241.18
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/24/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
10:19	3	20	28.0	7.58	8237	-167	5.02	7	62.36	4.55	5.36
10:26	3	40	28.9	7.61	8083	-129	4.90	6	62.36	4.46	5.22
10:32	3	60	29.3	7.63	8097	-123	5.04	5	62.36	4.45	5.27
10:39	3	80	29.4	7.64	8126	-120	4.96	5	62.36	4.48	5.28
10:45	3	100	29.2	7.67	8163	-121	4.84	5	62.36	4.50	5.30
10:52	3	120	29.2	7.68	8180	-120	4.79	5	62.36	4.51	5.31

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/24/2017	Double Filter Turbidity	--
Sample Time	10:53	Color	Clear
Sample ID	CW-04D-Q417	Odor	none
Duplicate Sample ID	--	MS/MSD Sample Time	--
Dup Sample Time	--	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	--
Without Filter Turbidity	--	EB Sample ID	--

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Groundwater Monitoring Field Data Form

Site: PGE Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings

CW-04M

Date	10/24/2017	Weather Conditions		Depth to Water (ft bmp)	62.00
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	17.85
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	171.41
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	53.55
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	109.41
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/24/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
09:36	2	9	27.3	7.24	7694	-130	5.00	31	62.50	4.23	4.99
09:41	2	18	28.2	7.33	7937	-120	5.47	5	62.50	4.37	5.16
09:46	2	27	28.6	7.39	7927	-112	5.63	2	62.50	4.39	5.22
09:51	2	36	28.5	7.43	7998	-110	5.65	2	62.50	4.41	5.20
09:55	2	45	28.5	7.44	8001	-105	5.72	2	62.50	4.42	5.22
10:00	2	54	28.6	7.46	8010	-103	5.80	2	62.50	4.43	5.23

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/24/2017	Double Filter Turbidity	--
Sample Time	10:01	Color	Clear
Sample ID	CW-04M-Q417	Odor	none
Duplicate Sample ID	--	MS/MSD Sample Time	--
Dup Sample Time	--	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	--
Without Filter Turbidity	--	EB Sample ID	--

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Groundwater Monitoring Field Data Form

Site: PGE Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings



OW-01D

Date	10/25/2017	Weather Conditions		Depth to Water (ft bmp)	92.96
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	30.02
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	277
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	90.06
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	184.04
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/25/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
12:44	3	16	26.8	7.64	7445	-100	4.99	4	93.33	4.09	4.84
12:50	3	32	26.6	7.69	6946	-98	10.13	1	93.33	3.77	4.46
12:54	3	48	26.6	7.68	6737	-99	10.40	1	93.33	3.71	4.41
13:00	3	64	26.6	7.68	7266	-91	10.38	1	93.33	3.90	4.51
13:05	3	80	26.6	7.68	7310	-88	10.36	1	93.33	3.92	4.50
13:11	3	96	26.6	7.68	7355	-87	10.33	1	93.33	3.93	4.52

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/25/2017	Double Filter Turbidity	--
Sample Time	13:12	Color	Clear
Sample ID	OW-01D-Q417	Odor	none
Duplicate Sample ID	--	MS/MSD Sample Time	--
Dup Sample Time	--	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	--
Without Filter Turbidity	--	EB Sample ID	--

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Groundwater Monitoring Field Data Form

Site: PGE Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings



OW-01M

Date	10/23/2017	Weather Conditions		Depth to Water (ft bmp)	93.49
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	15.57
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	188.93
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	46.71
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	95.44
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/23/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
14:50	2	8	26.7	7.35	7765	97	9.62	4	94.05	4.29	5.05
14:54	2	16	26.7	7.37	7750	103	10.04	1	94.05	4.24	4.98
14:58	2	24	26.7	7.38	7800	104	10.50	1	94.05	4.30	5.07
15:02	2	32	26.7	7.40	7823	110	10.94	1	94.05	4.31	5.08
15:06	2	40	26.7	7.40	7842	111	10.70	1	94.05	4.33	5.08
15:10	2	48	26.7	7.41	7887	113	10.5	1	94.05	4.33	5.10

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/23/2017	Double Filter Turbidity	--
Sample Time	15:11	Color	Clear
Sample ID	OW-01M-Q417	Odor	none
Duplicate Sample ID	--	MS/MSD Sample Time	--
Dup Sample Time	--	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	15:50
Without Filter Turbidity	--	EB Sample ID	MW-705-Q417

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings



OW-01S

Date	10/23/2017	Weather Conditions		Depth to Water (ft bmp)	93.78
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	3.21
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	113.48
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	9.63
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	19.7
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/23/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
13:58	1	2	28.0	6.44	6571	148	6.80	10	93.95	3.59	4.28
14:00	1	4	28.2	6.50	6570	146	6.64	5	93.95	3.55	4.27
14:02	1	6	28.2	6.52	6566	145	6.60	2	93.95	3.56	4.25
14:04	1	8	28.2	6.58	6510	142	6.72	1	93.95	3.53	4.23
14:06	1	10	28.3	6.63	6448	140	6.62	1	93.95	3.49	4.19
14:08	1	12	28.3	6.67	6430	137	6.55	1	93.95	3.46	4.16

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/23/2017	Double Filter Turbidity	--
Sample Time	14:10	Color	--
Sample ID	OW-01S-Q417	Odor	none
Duplicate Sample ID	--	MS/MSD Sample Time	--
Dup Sample Time	--	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	--
Without Filter Turbidity	--	EB Sample ID	--

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings



OW-02D

Date	10/24/2017	Weather Conditions	_____	Depth to Water (ft bmp)	91.13
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	40.59
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	340
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	121.77
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	248.87
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)	_____	Purge Date	10/24/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
08:22	3	21	28.1	7.36	7281	135	6.60	2	91.40	3.99	4.73
08:29	3	42	28.0	7.45	7627	123	7.96	1	91.40	4.19	4.95
08:36	3	63	27.9	7.49	7677	127	8.46	1	91.40	4.22	4.99
08:43	3	84	27.9	7.52	7680	126	8.55	1	91.40	4.23	5.00
08:50	3	105	27.9	7.55	7709	125	8.63	1	91.40	4.24	5.01
08:57	3	126	27.9	7.57	7713	126	8.61	1	91.40	4.24	5.01

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/25/2017	Double Filter Turbidity	--
Sample Time	08:58	Color	Clear
Sample ID	OW-02D-Q417	Odor	none
Duplicate Sample ID	--	MS/MSD Sample Time	--
Dup Sample Time	--	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	--
Without Filter Turbidity	--	EB Sample ID	--

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Groundwater Monitoring Field Data Form

Site: PGE Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings

Groundwater Monitoring Field Data Form

Site: PGE Topock

OW-02M

Date	<u>10/25/2017</u>	Weather Conditions	<u></u>	Depth to Water (ft bmp)	<u>91.34</u>
Project Number	<u>RC000753.0801</u>	Water Quality Meter	<u>YSI</u>	Gallons in Well	<u>19.35</u>
Location	<u>Topock, CA</u>	Sampler	<u>Jordan Teramae</u>	Measured Well Depth (ft bmp)	<u>210</u>
Purge Method	<u>Volume Purge - Grundfos RF2</u>	Casing Material	<u>PVC</u>	Total Volume to Remove	<u>58.05</u>
Purge Volume Units	<u>gal</u>	Casing Diameter (in)	<u>2</u>	Water Column in Well	<u>118.66</u>
Sampling Type	<u>Volume Purge - Grundfos RF2</u>	Pump Intake Depth (ft bmp)	<u></u>	Purge Date	<u>10/25/2017</u>
		Casing Volume to Remove	<u>3</u>		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
09:20	2	10	27.1	7.50	7528	107	8.22	1	91.70	4.13	4.88
09:25	2	20	27.6	7.50	7557	118	10.15	1	91.70	4.15	4.91
09:30	2	30	27.8	7.51	7564	122	10.39	1	91.70	4.15	4.92
09:35	2	40	27.8	7.51	7567	123	10.43	1	91.70	4.15	4.91
09:40	2	50	27.8	7.52	7566	123	10.41	1	91.70	4.16	4.92
09:45	2	60	27.8	7.52	7569	123	10.40	1	91.70	4.16	4.92

Sampling Summary

Did Well Dewater?	<u>No</u>	Post Sampling Turbidity	<u>--</u>
Sample Date	<u>10/25/2017</u>	Double Filter Turbidity	<u>--</u>
Sample Time	<u>09:46</u>	Color	<u>Clear</u>
Sample ID	<u>OW-02M-Q417</u>	Odor	<u>none</u>
Duplicate Sample ID	<u>--</u>	MS/MSD Sample Time	<u>--</u>
Dup Sample Time	<u>--</u>	MS/MSD Sample ID	<u>--</u>
Single Filter Turbidity	<u>1</u>	EB Time	<u>--</u>
Without Filter Turbidity	<u>--</u>	EB Sample ID	<u>--</u>

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings



OW-02S

Date	10/23/2017	Weather Conditions	Clear	Depth to Water (ft bmp)	92.44
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	1.59
Location	Topock, CA	Sampler	Jacob Mathwig	Measured Well Depth (ft bmp)	102.20
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	4.77
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	9.76
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/23/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
15:31	.5	1	29.2	7.57	3363	72.4	5.57	8	92.99	1.75	2.18
15:33	.5	2	29.6	7.61	3347	75.7	5.60	8	92.99	1.74	2.17
15:35	.5	3	30.4	7.64	3419	79.7	5.65	6	92.99	1.78	2.22
15:37	.5	4	30.5	7.65	3428	81.2	5.68	6	92.99	1.78	2.22
15:39	.5	5	30.7	7.65	3447	86.5	5.76	6	92.99	1.79	2.24
15:41	.5	6	30.8	7.65	3455	88.7	5.75	6	92.99	1.79	2.24

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/23/2017	Double Filter Turbidity	--
Sample Time	15:42	Color	Clear
Sample ID	OW-02S-Q417	Odor	none
Duplicate Sample ID	--	MS/MSD Sample Time	--
Dup Sample Time	--	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	16:00
Without Filter Turbidity	6	EB Sample ID	MW-706-Q417

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?			X	
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			

Photos and Drawings



Groundwater Monitoring Field Data Form

Site: PGE Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings

OW-05M

Date	10/25/2017	Weather Conditions		Depth to Water (ft bmp)	92.34
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	25.72
Location	Topock, CA	Sampler	Jordan Teramae	Measured Well Depth (ft bmp)	250
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	77.16
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	157.66
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)		Purge Date	10/25/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
13:46	2	14	28.6	7.26	7480	-93	3.74	1	92.93	4.10	4.86
13:53	2	28	28.9	7.64	7505	-80	6.41	1	92.93	4.11	4.87
14:00	2	42	28.8	7.65	7508	-88	6.48	1	92.93	4.11	4.87
14:07	2	56	28.8	7.66	7508	-92	6.47	1	92.93	4.11	4.87
14:14	2	70	28.9	7.66	7503	-94	6.45	1	92.93	4.11	4.87
14:21	2	84	28.9	7.67	7513	-97	6.48	1	92.93	4.11	4.88

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/25/2017	Double Filter Turbidity	--
Sample Time	14:22	Color	Clear
Sample ID	OW-05M-Q417	Odor	none
Duplicate Sample ID	--	MS/MSD Sample Time	--
Dup Sample Time	--	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	--
Without Filter Turbidity	--	EB Sample ID	--

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		

Groundwater Monitoring Field Data Form

Site: PGE Topock

Item	Yes	No	NA	Notes
Well Casing Intact?	X			
Photo Taken?	X			
Action Completed?		X		

Photos and Drawings

OW-05S

Date	10/23/2017	Weather Conditions	Sunny, High Winds	Depth to Water (ft bmp)	95.26
Project Number	RC000753.0801	Water Quality Meter	YSI	Gallons in Well	2.89
Location	Topock, CA	Sampler	Nara Tep	Measured Well Depth (ft bmp)	112.98
Purge Method	Volume Purge - Grundfos RF2	Casing Material	PVC	Total Volume to Remove	8.67
Purge Volume Units	gal	Casing Diameter (in)	2	Water Column in Well	17.72
Sampling Type	Volume Purge - Grundfos RF2	Pump Intake Depth (ft bmp)	102	Purge Date	10/23/2017
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min or gal/min)	Cumulative Vol Purged	Temp (C)	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
15:23	0.5	2	29.7	7.16	5686	148.6	5.12	3	95.34	3.05	3.68
15:27	0.5	4	29.7	7.22	5559	140.8	5.15	2	95.34	2.98	3.62
15:31	0.5	6	29.8	7.27	5452	127.8	5.19	2	95.34	2.93	3.54
15:35	0.5	8	29.8	7.28	5444	123.4	5.20	2	95.34	2.91	3.51
15:39	0.5	10	29.8	7.28	5443	123.0	5.20	2	95.34	2.91	3.51

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	--
Sample Date	10/23/2017	Double Filter Turbidity	--
Sample Time	15:40	Color	Clear
Sample ID	OW-05S-Q417	Odor	none
Duplicate Sample ID	--	MS/MSD Sample Time	--
Dup Sample Time	--	MS/MSD Sample ID	--
Single Filter Turbidity	1	EB Time	16:00
Without Filter Turbidity	2	EB Sample ID	MW-707-Q417

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Pondered Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			

Item	Yes	No	NA	Notes
Photo Taken?	X			

Photos and Drawings



APPENDIX C

2016 Ammonia Sampling Results (provided on CD-ROM only)



Appendix C-1

Ammonia Results for Groundwater Samples, 2016

PG&E Topock Compliance Monitoring Program

		Method:	SM4500-NH3C
Location ID	Sample Date	Ammonia as Nitrogen (mg/L)	
CW-01M	10/19/2016	ND (0.05)	
CW-01D	10/19/2016	ND (0.05)	
CW-02M	10/18/2016	ND (0.05)	
CW-02D	10/19/2016	ND (0.05)	
CW-02D	10/19/2016 (FD)	ND (0.05)	
CW-03M	10/18/2016	ND (0.05)	
CW-03D	10/18/2016	ND (0.05)	
CW-04M	10/18/2016	ND (0.05)	
CW-04D	10/18/2016	ND (0.05)	
OW-01S	10/18/2016	--	
OW-01M	10/18/2016	--	
OW-01D	10/18/2016	--	
OW-01D	10/18/2016 (FD)	--	
OW-02S	10/19/2016	--	
OW-02M	10/20/2016	ND (0.05)	
OW-02M	10/20/2016 (FD)	ND (0.05)	
OW-02D	10/20/2016	ND (0.05)	
OW-05S	10/19/2016	--	
OW-05M	10/19/2016	--	
OW-05D	10/19/2016	--	

Notes:

-- = data not collected or available

FD = field duplicate

mg/L = milligrams per liter

SM = Standard Method

Appendix C-2

ARAR Monitoring Information for 2016 Groundwater Samples - Ammonia

PG&E Topack Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Analysis								
					Lab	Analysis Method	Parameter	Date	Lab Technician	Units	Result	RL	MDL
CW-01M	CW-01M-Q416	Jordan Teramae	10/19/2016	09:52	TLI	SM 4500-NH3 G	NH3N	10/25/2016	Michelle Reed	mg/L	ND (0.05)	0.05	0.0111
CW-01D	CW-01D-Q416	Jordan Teramae	10/19/2016	09:13	TLI	SM 4500-NH3 G	NH3N	10/25/2016	Michelle Reed	mg/L	ND (0.05)	0.05	0.0111
CW-02M	CW-02M-Q416	Jordan Teramae	10/18/2016	15:37	TLI	SM 4500-NH3 G	NH3N	10/25/2016	Michelle Reed	mg/L	ND (0.05)	0.05	0.0111
CW-02D	CW-02D-Q416	Jordan Teramae	10/19/2016	08:17	TLI	SM 4500-NH3 G	NH3N	10/25/2016	Michelle Reed	mg/L	ND (0.05)	0.05	0.0111
CW-02D	MW-901-Q416	Jordan Teramae	10/19/2016	08:27	TLI	SM 4500-NH3 G	NH3N	10/25/2016	Michelle Reed	mg/L	ND (0.05)	0.05	0.0111
CW-03M	CW-03M-Q416	Jordan Teramae	10/18/2016	14:27	TLI	SM 4500-NH3 G	NH3N	10/25/2016	Michelle Reed	mg/L	ND (0.05)	0.05	0.0111
CW-03D	CW-03D-Q416	Jordan Teramae	10/18/2016	13:33	TLI	SM 4500-NH3 G	NH3N	10/25/2016	Michelle Reed	mg/L	ND (0.05)	0.05	0.0111
CW-04M	CW-04M-Q416	Jordan Teramae	10/18/2016	09:48	TLI	SM 4500-NH3 G	NH3N	10/25/2016	Michelle Reed	mg/L	ND (0.05)	0.05	0.0111
CW-04D	CW-04D-Q416	Jordan Teramae	10/18/2016	09:03	TLI	SM 4500-NH3 G	NH3N	10/25/2016	Michelle Reed	mg/L	ND (0.05)	0.05	0.0111
OW-02M	OW-02M-Q416	Jordan Teramae	10/20/2016	07:55	TLI	SM 4500-NH3 G	NH3N	10/25/2016	Michelle Reed	mg/L	ND (0.05)	0.05	0.0111
OW-02M	MW-903-Q416	Jordan Teramae	10/20/2016	08:05	TLI	SM 4500-NH3 G	NH3N	10/25/2016	Michelle Reed	mg/L	ND (0.05)	0.05	0.0111
OW-02D	OW-02D-Q416	Jordan Teramae	10/20/2016	08:44	TLI	SM 4500-NH3 G	NH3N	10/25/2016	Michelle Reed	mg/L	ND (0.05)	0.05	0.0111

Notes:

ARAR = applicable or relevant and appropriate requirement

MDL = method detection limit corrected for sample dilution

mg/L = milligrams per liter

ND = parameter not detected at the listed reporting limit

NH3N = ammonia (as nitrogen)

RL = reporting limit corrected for sample dilution

TLI = Truesdail Laboratories, Inc.



REPORT

3337 MICHELSON DRIVE, SUITE CN 750
IRVINE, CA 92612
(714) 730-6239 • FAX (714) 730-6462
www.truesdail.com

Advanced Technology Laboratories-NV

3151 W Post Rd
Las Vegas, NV 89118

Project Name: **ATL-NV**

Table of Contents
Truesdail Laboratories, Inc. Data Package
For Laboratory Number 16J0363

<u>ITEM</u>	<u>Section</u>
Case Narrative	1.0
Summary of Final Results and Analyst Page	2.0
Final Reports	3.0
Chain of Custody and Sample Receipt Records	4.0
Sample Preparation and Analytical Raw Data	5.0

Section 1.0

Case Narrative



REPORT

3337 MICHELSON DRIVE, SUITE CN 750
IRVINE, CA 92612
(714) 730-6239 • FAX (714) 730-6462
www.truesdail.com

Client: Advanced Technology Laboratories-NV

3151 W Post Rd
Las Vegas, NV 89118

Attention: Marlon Cartin

Project Name: ATL-NV

Work Order No.: 16J0363

Printed: 11/02/2016

CASE NARRATIVE

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Ammonia analyses. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on October 20, 2016, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter will be kept in warm storage for additional 2 months before disposal.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 203

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
N021309-001F / CW-02M-Q416	16J0363-01	Water		10/18/2016 15:37	10/20/2016 10:00
N021309-002F / CW-03D-Q416	16J0363-02	Water		10/18/2016 13:33	10/20/2016 10:00
N021309-003F / CW-03M-Q416	16J0363-03	Water		10/18/2016 14:27	10/20/2016 10:00
N021309-004F / CW-04D-Q416	16J0363-04	Water		10/18/2016 09:03	10/20/2016 10:00
N021309-005F / CW-04M-Q416	16J0363-05	Water		10/18/2016 09:48	10/20/2016 10:00

DEFINITIONS

Symbol	Definition
DF	Dilution Factor
MDL	Method Detection Limit
ND	Not Detected
RL	Reporting Limit

Respectfully yours,

Shelly Brady
Customer Service Manager

Section 2.0

Summary of Final Results

Client: Advanced Technology Laboratories-N
Project Name: ATL-NV
Printed: 11/02/2016

**N021309-001F / CW-02M-Q416
16J0363-01 (Water)**

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
---------	--------	----	-------	----	-------	----------	---------	--------	-------

Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	ND	0.0500	mg/L	1	1610532	10/25/2016 14:24	Alexander Luna	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----------------	-----------------	--

**N021309-002F / CW-03D-Q416
16J0363-02 (Water)**

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
---------	--------	----	-------	----	-------	----------	---------	--------	-------

Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	ND	0.0500	mg/L	1	1610532	10/25/2016 14:26	Alexander Luna	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----------------	-----------------	--

**N021309-003F / CW-03M-Q416
16J0363-03 (Water)**

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
---------	--------	----	-------	----	-------	----------	---------	--------	-------

Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	ND	0.0500	mg/L	1	1610532	10/25/2016 14:27	Alexander Luna	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----------------	-----------------	--

**N021309-004F / CW-04D-Q416
16J0363-04 (Water)**

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
---------	--------	----	-------	----	-------	----------	---------	--------	-------

Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	ND	0.0500	mg/L	1	1610532	10/25/2016 14:29	Alexander Luna	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----------------	-----------------	--

**N021309-005F / CW-04M-Q416
16J0363-05 (Water)**

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
---------	--------	----	-------	----	-------	----------	---------	--------	-------

Truesdail Laboratories, Inc

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: Advanced Technology Laboratories-N

Project Name: ATL-NV

Printed: 11/02/2016

N021309-005F / CW-04M-Q416 (Continued)
16J0363-05 (Water) (Continued)

Table with 9 columns: Analyte, Result, RL, Units, DF, Batch, Analyzed, Analyst, Method, Notes

Truesdail Laboratories, Inc

Wet Chemistry

Table row for Ammonia: ND, 0.0500 mg/L, 1, 1610532, 10/25/2016 14:31, Alexander Luna, SM 4500-NH3 D M

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products.



QUALITY CONTROL
Wet Chemistry
Truesdail Laboratories, Inc

Table with 11 columns: Analyte, Result, RL, Units, Spike Level, Source Result, %REC, % Rec Limits, RPD, RPD Limit, Note

Batch: 1610532 - SM 4500-NH3 D M

Blank (1610532-BLK1)

Prepared & Analyzed: 10/25/2016

Ammonia ND 0.0500 mg/L

LCS (1610532-BS1)

Prepared & Analyzed: 10/25/2016

Ammonia 0.381 0.0500 mg/L 0.400 95 90-110

Duplicate (1610532-DUP1)

Source: 16J0386-04

Prepared & Analyzed: 10/25/2016

Ammonia 0.0330 0.0500 mg/L 0.0370 11 20

Matrix Spike (1610532-MS1)

Source: 16J0305-03

Prepared & Analyzed: 10/25/2016

Ammonia 0.796 0.0500 mg/L 0.400 0.399 99 75-125

Matrix Spike Dup (1610532-MSD1)

Source: 16J0305-03

Prepared & Analyzed: 10/25/2016

Ammonia 0.809 0.0500 mg/L 0.400 0.399 103 75-125 2 20

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

Section 3.0

Final Reports

Method: SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: Asset Laboratories
Client Sample ID: N021309-001F / CW-02M-Q416
Lab Sample ID: 16J0363-01
Project: Groud Water - Ammonia as N

Date Sampled: 10/18/16 15:37

Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0111	0.0500	1		AL	10/25/16 14:24	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: Asset Laboratories
Client Sample ID: N021309-002F / CW-03D-Q416
Lab Sample ID: 16J0363-02
Project: Groud Water - Ammonia as N

Date Sampled: 10/18/16 13:33

Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0111	0.0500	1		AL	10/25/16 14:26	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: Asset Laboratories
Client Sample ID: N021309-003F / CW-03M-Q416
Lab Sample ID: 16J0363-03
Project: Groud Water - Ammonia as N

Date Sampled: 10/18/16 14:27

Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0111	0.0500	1		AL	10/25/16 14:27	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: Asset Laboratories
Client Sample ID: N021309-004F / CW-04D-Q416
Lab Sample ID: 16J0363-04
Project: Groud Water - Ammonia as N

Date Sampled: 10/18/16 09:03

Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0111	0.0500	1		AL	10/25/16 14:29	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: Asset Laboratories
Client Sample ID: N021309-005F / CW-04M-Q416
Lab Sample ID: 16J0363-05
Project: Groud Water - Ammonia as N

Date Sampled: 10/18/16 09:48

Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0111	0.0500	1		AL	10/25/16 14:31	SM 4500-NH3 D M

METHOD BLANK DATA SHEET

SM 4500-NH3 D M

Client: Asset Laboratories

Project: Ground Water - Ammonia as N

Laboratory ID: 1610532-BLK1

Prepared: 10/25/16 12:00

Preparation: SM 4500-NH3 D M

Matrix: Water

Analyzed: 10/25/16 14:17

Instrument: TL01

File ID: 6J25003-022

Batch: 1610532

Sequence: 6J25003

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	RL	Q
7664-41-7	Ammonia	ND	0.0111	0.0500	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: Asset Laboratories
 Project: Ground Water - Ammonia as N
 Work Order: 16J0363

Matrix: Water
 Prep Batch: 1610532
 Analysis Method: SM 4500-NH3 D M
 Prep Method: SM 4500-NH3 D M
 Laboratory ID: 1610532-MS1
 Source Sample ID: 16J0305-03

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Ammonia	0.400	0.399	0.796	99	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	RPD	QC LIMITS REC.
Ammonia	0.400	0.809	103	2	20	75 - 125

* Values outside of QC limits

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Asset Laboratories

Project: Ground Water - Ammonia as N

Instrument ID: TL01

Lab File ID: 6J25003-012

Sequence: 6J25003

Injection Date: 10/25/16

Lab Sample ID: 6J25003-CCV1

Injection Time: 14:39

COMPOUND	CONC. (mg/L)		RESPONSE FACTOR		% Rec	CCV Lower Limit	Upper Limit
	STD	CCV	CCV				
Ammonia	0.500	0.472	76.14256		94	90	110

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Asset Laboratories

Project: Ground Water - Ammonia as N

Instrument ID: TL01

Lab File ID: 6J25003-002

Sequence: 6J25003

Injection Date: 10/25/16

Lab Sample ID: 6J25003-CCV2

Injection Time: 15:21

COMPOUND	CONC. (mg/L)		RESPONSE FACTOR		% Rec	CCV Lower Limit	Upper Limit
	STD	CCV	CCV				
Ammonia	0.500	0.451	72.4695		90	90	110

Section 4.0

Chain of Custody and Sample Receipt Records

Log-in check list For level III data package

Client: ATL-NV Lab Number: 1690363

Received Date: 10/20/16

Sample receiving review

	Yes	No	N/A	Comment
Was special login form received by login personnel?	x			
Was COC received and signed by client and login personnel?	x			
Were all sampls temperature measured and recorded on COC?	x			
Did you measure and record the pH on all metals samples on COC?			x	
Has sample integrity and analysis discrepancy form been filled out completely?	x			
Were all intercompany yellow forms generated and stamped with " alert level III QC" note?	x			
Have check -in and check out lists been filled out and attached to appropriate form?	x			
Were sample containers labeled with TLI numbers, date, and time sampled?	x			
Did you notify analyst or group leader about short holding time?			x	
Was a copy of COC attached to all yellow intracompany form?	x			
For special clients, have all their samples been logged into the Internal COC book?	x			
Were samples locked in fridge or special storage area?	x			
Was temperature recorded in the log book?	x			

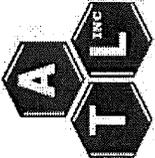
Sample receiving Signature: *Josephine Brown*

1630363

CHAIN-OF-CUSTODY RECORD

ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118
www.all-labs.com
TEL: 7023072659 FAX: 7023072691



QC Level: Level IV

Subcontractor:

Truesdail
3337 Michelson Drive, Suite CN750
Irvine, CA 92612

TEL: (714) 730-6239
FAX: (714) 730-6462
Acct #:

Field Sampler: SIGNED

19-Oct-16

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests	
				SM4500-NH3D	
N021309-001F / CW-02M-Q416	Groundwater	10/18/2016 3:37:00 PM	32OZP	1	
N021309-002F / CW-03D-Q416	Groundwater	10/18/2016 1:33:00 PM	32OZP	1	
N021309-003F / CW-03M-Q416	Groundwater	10/18/2016 2:27:00 PM	32OZP	1	
N021309-004F / CW-04D-Q416	Groundwater	10/18/2016 9:03:00 AM	32OZP	1	
N021309-005F / CW-04M-Q416	Groundwater	10/18/2016 9:48:00 AM	32OZP	1	

ALERT!!
Level IV QC

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N21309A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marion at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia as Nitrogen by SM4500-NH3D.

GSO #: 533701160

Date/Time	Date/Time
Relinquished by: <u>RA</u>	10/19/2016 17:00
Relinquished by: <u>Jacqueline Brown</u>	10/29/16 10:00

WORK ORDER

Printed: 10/20/2016 4:37:25PM

16J0363

Truesdail Laboratories, Inc

Client: Asset Laboratories	Project Manager: Shelly Brady
Project: Groud Water - Ammonia as N	Project Number: N21309A

Report To: Asset Laboratories Ed Rom 11060 Artesia Blvd., Suite C Cerritos, CA 90703 Phone: (562) 219-7435 Fax: (562) 219-7436	Invoice To: Asset Laboratories Ed Rom 11060 Artesia Blvd., Suite C Cerritos, CA 90703 Phone : (562) 219-7435 Fax: (562) 219-7436
---	---

Date Due: 10/31/2016 16:30 (7 day TAT)	Date Received: 10/20/2016 10:00
Received By: Jacqueline Brown	Date Logged In: 10/20/2016 16:31
Logged In By: Jeff Lee	

Samples Received at: 7.2°C	
Chain of Custody rece Yes	Samples intact? Yes
Letter (if sent) matche No	Custody seals (if any) No
Requested analyses ac Yes	Analyses within hold t Yes
Samples received in a No	

Analysis	Due	TAT	Expires	Comments
16J0363-01 N021309-001F / CW-02M-Q416 [Water] Sampled 10/18/2016 15:37 (GMT-08:00) Pacific Time (US & Ammonia E	10/31/2016 08:00	7	11/15/2016 15:37	
16J0363-02 N021309-002F / CW-03D-Q416 [Water] Sampled 10/18/2016 13:33 (GMT-08:00) Pacific Time (US & Ammonia E	10/31/2016 08:00	7	11/15/2016 13:33	
16J0363-03 N021309-003F / CW-03M-Q416 [Water] Sampled 10/18/2016 14:27 (GMT-08:00) Pacific Time (US & Ammonia E	10/31/2016 08:00	7	11/15/2016 14:27	
16J0363-04 N021309-004F / CW-04D-Q416 [Water] Sampled 10/18/2016 09:03 (GMT-08:00) Pacific Time (US & Ammonia E	10/31/2016 08:00	7	11/15/2016 09:03	
16J0363-05 N021309-005F / CW-04M-Q416 [Water] Sampled 10/18/2016 09:48 (GMT-08:00) Pacific Time (US & Ammonia E	10/31/2016 08:00	7	11/15/2016 09:48	

Reviewed By AM

Date 10/20/16



Internal Chain of Custody Logbook

Lab Number: 1690363
 Client Name: ATL

Storage Temperature: 4°C

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
-01				10/20/16	1025		Jackie Brown	<i>[Signature]</i>
	NH3	10/25/16	12:00				Alex Luna	<i>[Signature]</i>
				10/25/16	15:30	10mL	Alex Luna	<i>[Signature]</i>

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
-02				10/20/16	1025		Jackie Brown	<i>[Signature]</i>
	NH3	10/25/16	12:00				Alex Luna	<i>[Signature]</i>
				10/25/16	15:30	10mL	Alex Luna	<i>[Signature]</i>

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
-03				10/20/16	1025		Jackie Brown	<i>[Signature]</i>
	NH3	10/25/16	12:00				Alex Luna	<i>[Signature]</i>
				10/25/16	15:30	10mL	Alex Luna	<i>[Signature]</i>

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
-04				10/20/16	1025		Jackie Brown	<i>[Signature]</i>
	NH3	10/25/16	12:00				Alex L	<i>[Signature]</i>
				10/25/16	15:30	10mL	Alex L	<i>[Signature]</i>

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials



Internal Chain of Custody Logbook

Lab Number: 1690363
 Client Name: ATK

Storage Temperature: 4°C

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
-05				10/20/16	10:25		Jackie Brown	<i>[Signature]</i>
	NH3	10/25/16	12:00				Alex Lun	<i>[Signature]</i>
				10/25/16	15:30	10ul	Alex Lun	<i>[Signature]</i>

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Section 5.0

Sample Preparation, and Analytical Raw Data

PREPARATION BATCH SUMMARY

SM 4500-NH3 D M

Laboratory: Truesdail Laboratories, Inc

Client: Asset Laboratories

Project: Groud Water - Ammonia as N

Batch: 1610532 Batch Matrix: Water

Preparation: SM 4500-NH3 D M

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
Blank	1610532-BLK1	10/25/16 12:00	50.00	50.00
LCS	1610532-BS1	10/25/16 12:00	50.00	50.00
Duplicate	1610532-DUP1	10/25/16 12:00	50.00	50.00
Matrix Spike	1610532-MS1	10/25/16 12:00	50.00	50.00
Matrix Spike Dup	1610532-MSD1	10/25/16 12:00	50.00	50.00
N021309-001F / CW-02M-Q416	16J0363-01	10/25/16 12:00	50.00	50.00
N021309-002F / CW-03D-Q416	16J0363-02	10/25/16 12:00	50.00	50.00
N021309-003F / CW-03M-Q416	16J0363-03	10/25/16 12:00	50.00	50.00
N021309-004F / CW-04D-Q416	16J0363-04	10/25/16 12:00	50.00	50.00
N021309-005F / CW-04M-Q416	16J0363-05	10/25/16 12:00	50.00	50.00

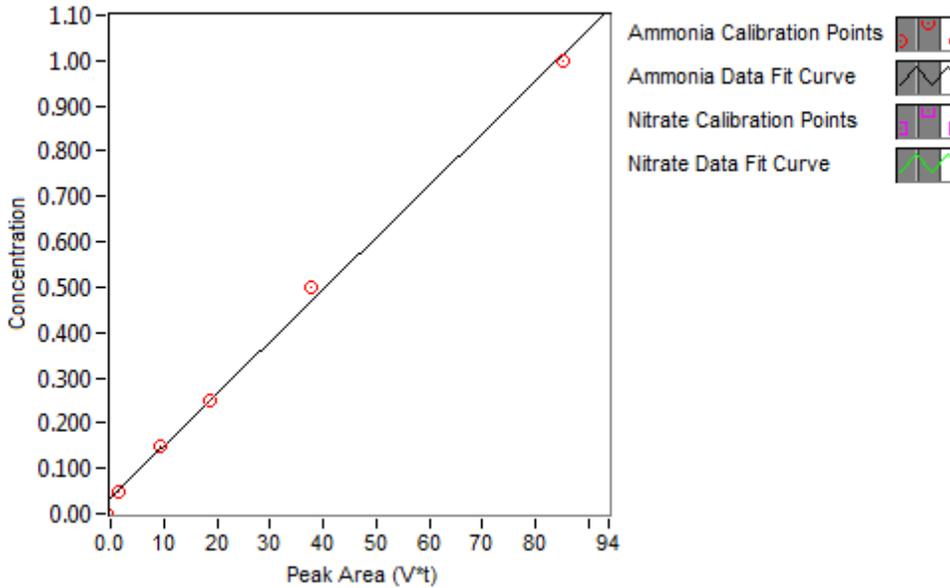
Injection Time
00:20

Wash Time
01:30

Integration Start Time
00:40

Integration End Time
01:45

Ammonia Calibration Data Fit

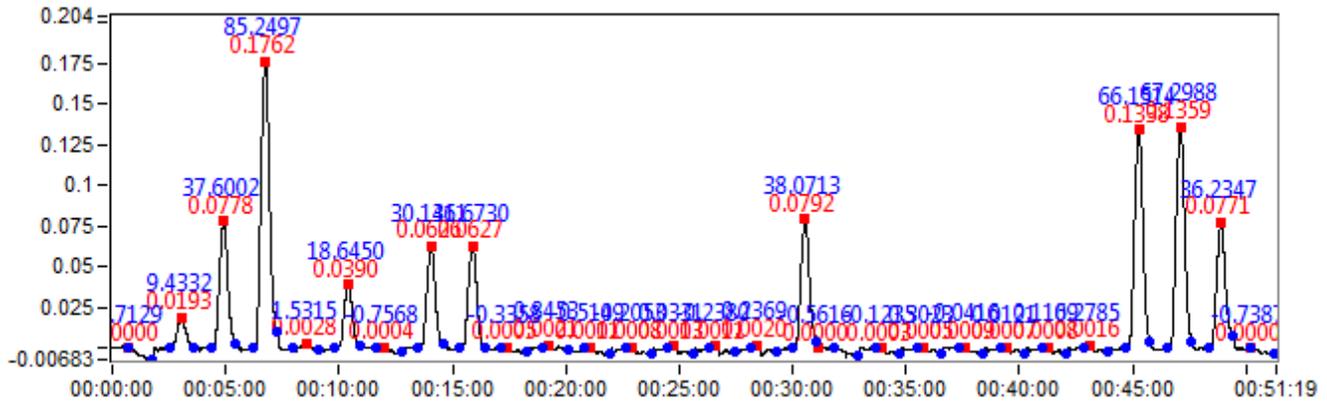


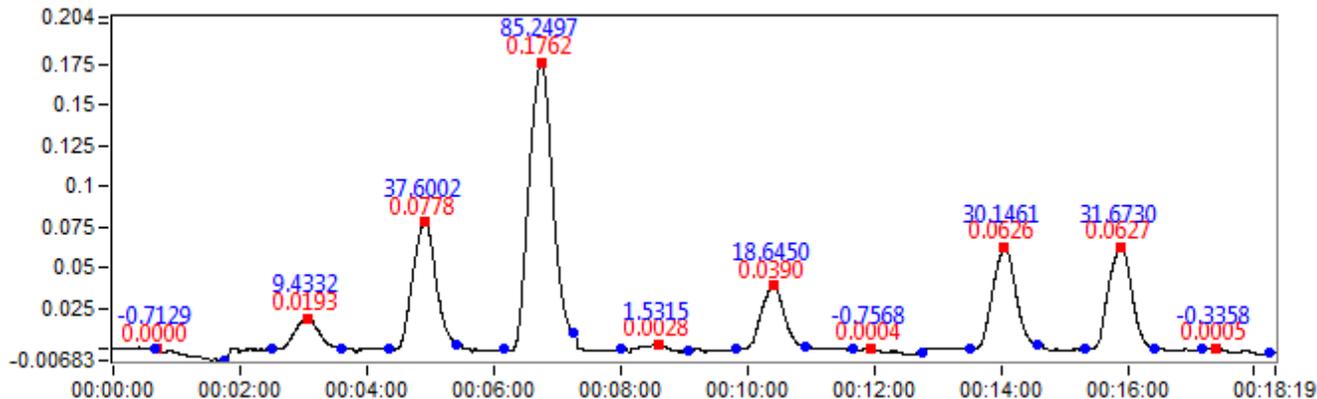
Ammonia Calibration Equation
 $y = +3.352E-2 + 1.152E-2 * X$

R^2 Value
0.997074

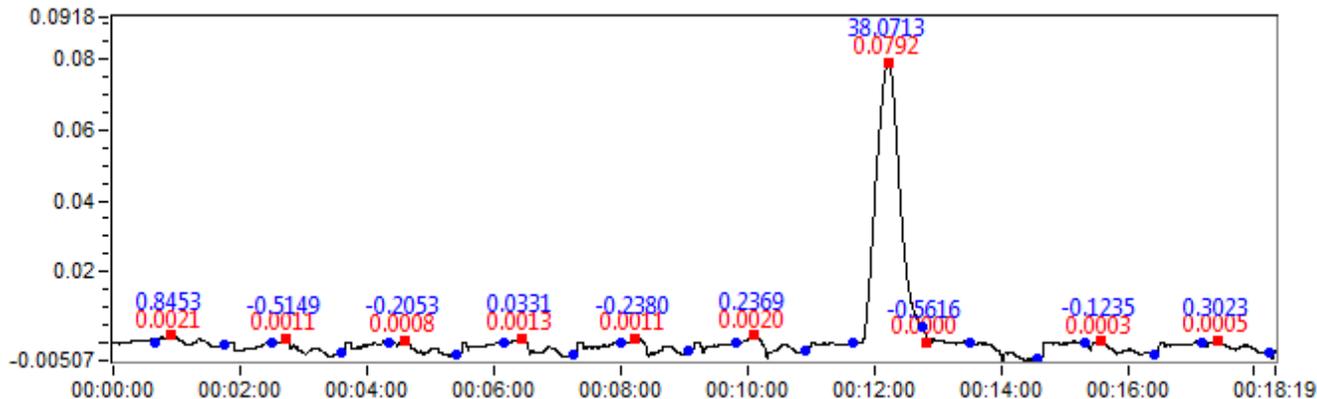
Nitrate Calibration Equation
y =

Nitrate R^2 Value
NaN

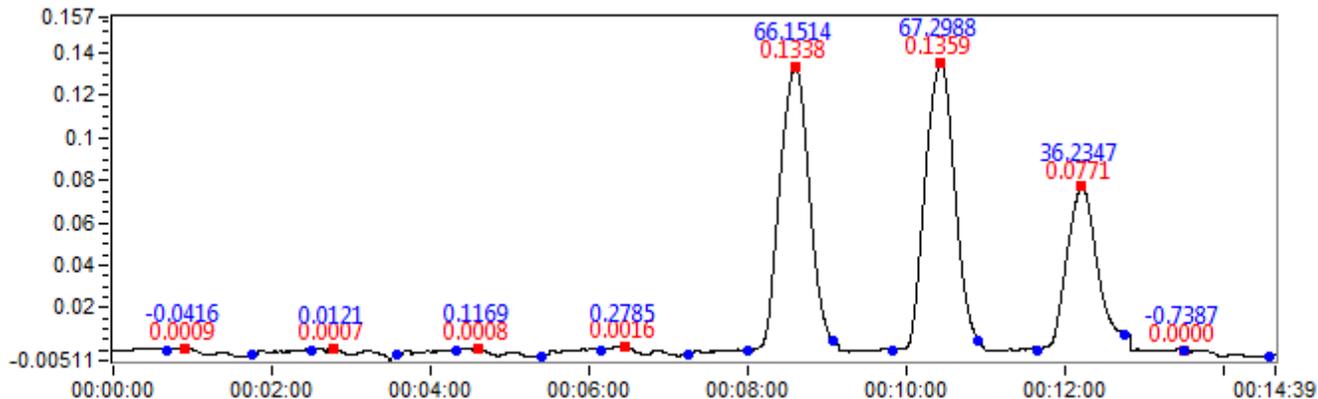




Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
4	10-25-16 14:24:04	NH3 Sample	16J0363-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.335787	0.029653			
3	10-25-16 14:22:06	NH3 Sample	16J0305-03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	31.673031	0.398551			
2	10-25-16 14:19:31	NH3 Sample	1610532-BS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 723925 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	30.146134	0.380953			
1	10-25-16 14:17:24	NH3 Sample	1610532-BLK1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 723861 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.756755	0.024802			
4	10-25-16 12:35:03	NH3 Sample	6J25003-CAL3	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 723326 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	18.644963	.25			
2	10-25-16 12:27:58	NH3 Sample	6J25003-CAL1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 723114 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	1.531470	.05			
6	10-25-16 12:22:29	NH3 Sample	6J25003-CAL5	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 722713 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	85.249667	1			
5	10-25-16 12:20:31	NH3 Sample	6J25003-CAL4	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 722713 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	37.600237	.5			
3	10-25-16 12:16:35	NH3 Sample	6J25003-CAL2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 722713 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	9.433227	.15			
1	10-25-16 12:06:13	NH3 Sample	6J25003-ICB1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 722461 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.712865	0.000000			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
4	10-25-16 14:58:13	NH3 Sample	16J0386-04	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.302307	0.037007			
3	10-25-16 14:56:15	NH3 Sample	16J0386-03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.123460	0.032100			
2	10-25-16 14:41:47	NH3 Sample	6J25003-CCB1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724534 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.561618	0.027051			
1	10-25-16 14:39:49	NH3 Sample	6J25003-CCV1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724534 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	38.071276	0.472290			
10	10-25-16 14:35:51	NH3 Sample	16J0386-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.236880	0.036253			
9	10-25-16 14:33:53	NH3 Sample	16J0386-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.237965	0.030781			
8	10-25-16 14:31:55	NH3 Sample	16J0363-05	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.033081	0.033904			
7	10-25-16 14:29:57	NH3 Sample	16J0363-04	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.205274	0.031157			
6	10-25-16 14:27:59	NH3 Sample	16J0363-03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.514950	0.027588			
5	10-25-16 14:26:01	NH3 Sample	16J0363-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.845302	0.043265			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
2	10-25-16 15:23:14	NH3 Sample	6J25003-CCB2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725836 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.738703	0.025010			
1	10-25-16 15:21:06	NH3 Sample	6J25003-CCV2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725772 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	36.234747	0.451124			
10	10-25-16 15:10:00	NH3 Sample	1610532-MSD1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	67.298820	0.809133			
9	10-25-16 15:08:02	NH3 Sample	1610532-MS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	66.151406	0.795910			
8	10-25-16 15:06:04	NH3 Sample	16J0414-03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.278496	0.036733			
7	10-25-16 15:04:06	NH3 Sample	16J0414-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.116881	0.034870			
6	10-25-16 15:02:08	NH3 Sample	16J0414-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.012057	0.033662			
5	10-25-16 15:00:11	NH3 Sample	1610532-DUP1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.041604	0.033044			



REPORT

3337 MICHELSON DRIVE, SUITE CN 750
IRVINE, CA 92612
(714) 730-6239 • FAX (714) 730-6462
www.truesdail.com

Advanced Technology Laboratories-NV

3151 W Post Rd
Las Vegas, NV 89118

Project Name: **ATL-NV**

Table of Contents
Truesdail Laboratories, Inc. Data Package
For Laboratory Number 16J0386

<u>ITEM</u>	<u>Section</u>
Case Narrative	1.0
Summary of Final Results and Analyst Page	2.0
Final Reports	3.0
Chain of Custody and Sample Receipt Records	4.0
Sample Preparation and Analytical Raw Data	5.0

Section 1.0

Case Narrative



REPORT

3337 MICHELSON DRIVE, SUITE CN 750
IRVINE, CA 92612
(714) 730-6239 • FAX (714) 730-6462
www.truesdail.com

Client: Advanced Technology Laboratories-NV

3151 W Post Rd
Las Vegas, NV 89118

Attention: Marlon Cartin

Project Name: ATL-NV

Work Order No.: 16J0386

Printed: 11/01/2016

CASE NARRATIVE

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Ammonia analyses. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on October 21, 2016, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter will be kept in warm storage for additional 2 months before disposal.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 203

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
N021324-001F / CW-01D-Q416	16J0386-01	Water	Grab	10/19/2016 09:13	10/21/2016 13:45
N021324-002F / CW-01M-Q416	16J0386-02	Water	Grab	10/19/2016 09:52	10/21/2016 13:45
N021324-003F / CW-02D-Q416	16J0386-03	Water	Grab	10/19/2016 08:17	10/21/2016 13:45
N021324-004F / MW-901-Q416	16J0386-04	Water	Grab	10/19/2016 08:27	10/21/2016 13:45

DEFINITIONS

Symbol	Definition
DF	Dilution Factor
MDL	Method Detection Limit
ND	Not Detected
RL	Reporting Limit

Respectfully yours,

Shelly Brady
Customer Service Manager

Section 2.0

Summary of Final Results

**N021324-001F / CW-01D-Q416
16J0386-01 (Water)**

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
---------	--------	----	-------	----	-------	----------	---------	--------	-------

Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	ND	0.0500	mg/L	1	1610532	10/25/2016 14:33	Alexander Luna	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----------------	-----------------	--

**N021324-002F / CW-01M-Q416
16J0386-02 (Water)**

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
---------	--------	----	-------	----	-------	----------	---------	--------	-------

Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	ND	0.0500	mg/L	1	1610532	10/25/2016 14:35	Alexander Luna	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----------------	-----------------	--

**N021324-003F / CW-02D-Q416
16J0386-03 (Water)**

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
---------	--------	----	-------	----	-------	----------	---------	--------	-------

Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	ND	0.0500	mg/L	1	1610532	10/25/2016 14:56	Alexander Luna	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----------------	-----------------	--

**N021324-004F / MW-901-Q416
16J0386-04 (Water)**

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
---------	--------	----	-------	----	-------	----------	---------	--------	-------

Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	ND	0.0500	mg/L	1	1610532	10/25/2016 14:58	Alexander Luna	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----------------	-----------------	--



QUALITY CONTROL
Wet Chemistry
Truesdail Laboratories, Inc

Table with 11 columns: Analyte, Result, RL, Units, Spike Level, Source Result, %REC, % Rec Limits, RPD, RPD Limit, Note

Batch: 1610532 - SM 4500-NH3 D M

Blank (1610532-BLK1)

Prepared & Analyzed: 10/25/2016

Ammonia ND 0.0500 mg/L

LCS (1610532-BS1)

Prepared & Analyzed: 10/25/2016

Ammonia 0.381 0.0500 mg/L 0.400 95 90-110

Duplicate (1610532-DUP1)

Source: 16J0386-04

Prepared & Analyzed: 10/25/2016

Ammonia 0.0330 0.0500 mg/L 0.0370 11 20

Matrix Spike (1610532-MS1)

Source: 16J0305-03

Prepared & Analyzed: 10/25/2016

Ammonia 0.796 0.0500 mg/L 0.400 0.399 99 75-125

Matrix Spike Dup (1610532-MSD1)

Source: 16J0305-03

Prepared & Analyzed: 10/25/2016

Ammonia 0.809 0.0500 mg/L 0.400 0.399 103 75-125 2 20

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

Section 3.0

Final Reports

Method: SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: N021324-001F / CW-01D-Q416
Lab Sample ID: 16J0386-01
Project: ATL-NV

Date Sampled: 10/19/16 09:13

Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0111	0.0500	1		AL	10/25/16 14:33	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: N021324-002F / CW-01M-Q416
Lab Sample ID: 16J0386-02
Project: ATL-NV

Date Sampled: 10/19/16 09:52

Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0111	0.0500	1		AL	10/25/16 14:35	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: N021324-003F / CW-02D-Q416
Lab Sample ID: 16J0386-03
Project: ATL-NV

Date Sampled: 10/19/16 08:17

Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0111	0.0500	1		AL	10/25/16 14:56	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: N021324-004F / MW-901-Q416
Lab Sample ID: 16J0386-04
Project: ATL-NV

Date Sampled: 10/19/16 08:27

Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0111	0.0500	1		AL	10/25/16 14:58	SM 4500-NH3 D M

METHOD BLANK DATA SHEET

SM 4500-NH3 D M

Client: Advanced Technology Laboratories-NV

Project: ATL-NV

Laboratory ID: 1610532-BLK1

Prepared: 10/25/16 12:00

Preparation: SM 4500-NH3 D M

Matrix: Water

Analyzed: 10/25/16 14:17

Instrument: TL01

File ID: 6J25003-022

Batch: 1610532

Sequence: 6J25003

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	RL	Q
7664-41-7	Ammonia	ND	0.0111	0.0500	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: Advanced Technology Laboratories-NV
 Project: ATL-NV
 Work Order: 16J0386

Matrix: Water
 Prep Batch: 1610532
 Analysis Method: SM 4500-NH3 D M
 Prep Method: SM 4500-NH3 D M
 Laboratory ID: 1610532-MS1
 Source Sample ID: 16J0305-03

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Ammonia	0.400	0.399	0.796	99	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	RPD	QC LIMITS REC.
Ammonia	0.400	0.809	103	2	20	75 - 125

* Values outside of QC limits

DUPLICATES

N021324-004F / MW-901-Q416

Client: Advanced Technology Laboratories-NV
Project: ATL-NV

Matrix: Water
Prep Batch: 1610532
Prep Method: SM 4500-NH3 D M

Laboratory ID: 1610532-DUP1
Initial/Final: 50 mL / 50 mL
Analysis: SM 4500-NH3 D M

ANALYTE	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	CONTROL LIMIT
Ammonia	0.0370	0.0330			20

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Advanced Technology Laborato

Project: ATL-NV

Instrument ID: TL01

Lab File ID: 6J25003-012

Sequence: 6J25003

Injection Date: 10/25/16

Lab Sample ID: 6J25003-CCV1

Injection Time: 14:39

COMPOUND	CONC. (mg/L)		RESPONSE FACTOR		% Rec	CCV Lower Limit	Upper Limit
	STD	CCV	CCV				
Ammonia	0.500	0.472	76.14256		94	90	110

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Advanced Technology Laborato

Project: ATL-NV

Instrument ID: TL01

Lab File ID: 6J25003-002

Sequence: 6J25003

Injection Date: 10/25/16

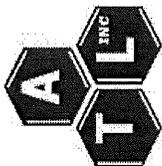
Lab Sample ID: 6J25003-CCV2

Injection Time: 15:21

COMPOUND	CONC. (mg/L)		RESPONSE FACTOR		% Rec	CCV Lower Limit	Upper Limit
	STD	CCV	CCV				
Ammonia	0.500	0.451	72.4695		90	90	110

Section 4.0

Chain of Custody and Sample Receipt Records



ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118
www.afl-labs.com
TEL: 7023072659 FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

16J0356

QC Level: Level IV

Subcontractor:

Truesdail
3337 Michelson Drive, Suite CN750
Irvine, CA 92612

TEL: (714) 730-6239
FAX: (714) 730-6462
Acct #:

Field Sampler: SIGNED

20-Oct-16

Sample ID	Matrix	Date Collected	Bottle Type	SM4500-NH3D	Requested Tests
N021324-001F / CW-01D-Q416	Groundwater	10/19/2016 9:13:00 AM	32OZP	1	
N021324-002F / CW-01M-Q416	Groundwater	10/19/2016 9:52:00 AM	32OZP	1	
N021324-003F / CW-02D-Q416	Groundwater	10/19/2016 8:17:00 AM	32OZP	1	
N021324-004F / MW-901-Q416	Groundwater	10/19/2016 8:27:00 AM	32OZP	1	

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N21324A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500-NH3D.

GSO #: 533716119

Relinquished by: <i>BA</i>	Date/Time: 10/20/2016 17:00
Received by: <i>Michelle Reed</i>	Date/Time: 10/20/16 13:45
Relinquished by: _____	Received by: _____
_____	_____

Log-in check list For level III data package

Client: *ATL*

Lab Number: *16J0386*

Received Date: *10/21/16*

Sample receiving review

	Yes	No	N/A	Comment
Was special login form received by login personnel?	Y			
Was COC received and signed by client and login personnel?	X			
Were all sample temperature measured and recorded on COC?	X			
Did you measure and record the pH on all metals samples on COC?	X			
Has sample integrity and analysis discrepancy form been filled out completely?	X			
Were all intercompany yellow forms generated and stamped with " alert level III QC" note?	X			
Have check-in and check out lists been filled out and attached to appropriate form?	X			
Were sample containers labeled with TLI numbers, date, and time sampled?	X			
Did you notify analyst or group leader about short holding time?	X			
Was a copy of COC attached to all yellow intracompany form?	X			
For special clients, have all their samples been logged into the Internal COC book?				
Were samples locked in fridge or special storage area?			X	
Was temperature recorded in the log book?			X	

Sample receiving Signature: *Michelle Reed*

16J0386

Truesdail Laboratories, Inc

Client: Advanced Technology Laboratories-NV Project: ATL-NV	Project Manager: Shelly Brady Project Number: [none]
--	---

Report To:

Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone: (702) 307-2659
Fax: (702) 307-2691

Invoice To:

Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone : (702) 307-2659
Fax: (702) 307-2691

Date Due: 11/01/2016 16:30 (7 day TAT)

Received By: Michelle Reed

Date Received: 10/21/2016 13:45 ✓

Logged In By: Michelle Reed

Date Logged In: 10/21/2016 13:48

Samples Received at:	1.1°C
Chain of Custody re	Yes Samples intact? Yes
Letter (if sent) matc	No Custody seals (if an No
Requested analyses	Yes Analyses within hol Yes
Samples received in	Yes

Analysis	Due	TAT	Expires	Comments
16J0386-01 N021324-001F / CW-01D-Q416 [Water] Sampled 10/19/2016 09:13 ✓ (GMT-08:00) Pacific Time (US &				
Ammonia E ✓	11/01/2016 08:00	7	11/16/2016 09:13	
16J0386-02 N021324-002F / CW-01M-Q416 [Water] Sampled 10/19/2016 09:52 ✓ (GMT-08:00) Pacific Time (US &				
Ammonia E ✓	11/01/2016 08:00	7	11/16/2016 09:52	
16J0386-03 N021324-003F / CW-02D-Q416 [Water] Sampled 10/19/2016 08:17 ✓ (GMT-08:00) Pacific Time (US &				
Ammonia E ✓	11/01/2016 08:00	7	11/16/2016 08:17	
16J0386-04 N021324-004F / MW-901-Q416 [Water] Sampled 10/19/2016 08:27 ✓ (GMT-08:00) Pacific Time (US &				
Ammonia E	11/01/2016 08:00	7	11/16/2016 08:27	

Shelly Brady 10/21/16
 Reviewed By _____ Date _____



Internal Chain of Custody Logbook

Lab Number: 16J0386
 Client Name: ATL

Storage Temperature: 2.5°C

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
-01				10/21/16	13:45		Michelle Reid	<i>Michelle Reid</i>
	NH ₃	10/25/16	12:00				Alex Lane	<i>AL</i>
				10/25/16	15:30	10mL	Alex Lane	<i>AL</i>
Storage Date		Shelf No. For Storage		Printed Name		Initials		
Discharge Date			Printed Name			Initials		

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
-02				10/21/16	13:45		Michelle Reid	<i>Michelle Reid</i>
	NH ₃	10/25/16	12:00				Alex Lane	<i>AL</i>
				10/25/16	15:30	10mL	Alex Lane	<i>AL</i>
Storage Date		Shelf No. For Storage		Printed Name		Initials		
Discharge Date			Printed Name			Initials		

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
-03				10/21/16	13:45		Michelle Reid	<i>Michelle Reid</i>
	NH ₃	10/25/16	12:00				Alex Lane	<i>AL</i>
				10/25/16	15:30	10mL	Alex Lane	<i>AL</i>
Storage Date		Shelf No. For Storage		Printed Name		Initials		
Discharge Date			Printed Name			Initials		

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
-04				10/21/16	13:45		Michelle Reid	<i>Michelle Reid</i>
	NH ₃	10/25/16	12:00				Alex Lane	<i>AL</i>
				10/25/16	15:30	20mL	Alex Lane	<i>AL</i>
Storage Date		Shelf No. For Storage		Printed Name		Initials		
Discharge Date			Printed Name			Initials		

Section 5.0

Sample Preparation, and Analytical Raw Data

PREPARATION BATCH SUMMARY

SM 4500-NH3 D M

Laboratory: Truesdail Laboratories, Inc

Client: Advanced Technology Laboratories-NV

Project: ATL-NV

Batch: 1610532 Batch Matrix: Water

Preparation: SM 4500-NH3 D M

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
Blank	1610532-BLK1	10/25/16 12:00	50.00	50.00
LCS	1610532-BS1	10/25/16 12:00	50.00	50.00
N021324-004F / MW-901-Q416	1610532-DUP1	10/25/16 12:00	50.00	50.00
Matrix Spike	1610532-MS1	10/25/16 12:00	50.00	50.00
Matrix Spike Dup	1610532-MSD1	10/25/16 12:00	50.00	50.00
N021324-001F / CW-01D-Q416	16J0386-01	10/25/16 12:00	50.00	50.00
N021324-002F / CW-01M-Q416	16J0386-02	10/25/16 12:00	50.00	50.00
N021324-003F / CW-02D-Q416	16J0386-03	10/25/16 12:00	50.00	50.00
N021324-004F / MW-901-Q416	16J0386-04	10/25/16 12:00	50.00	50.00

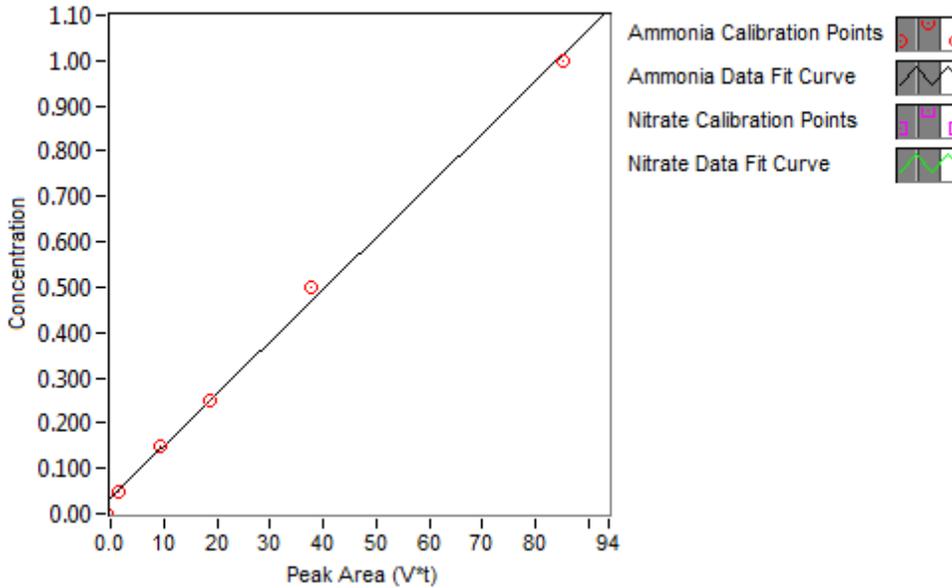
Injection Time
00:20

Wash Time
01:30

Integration Start Time
00:40

Integration End Time
01:45

Ammonia Calibration Data Fit

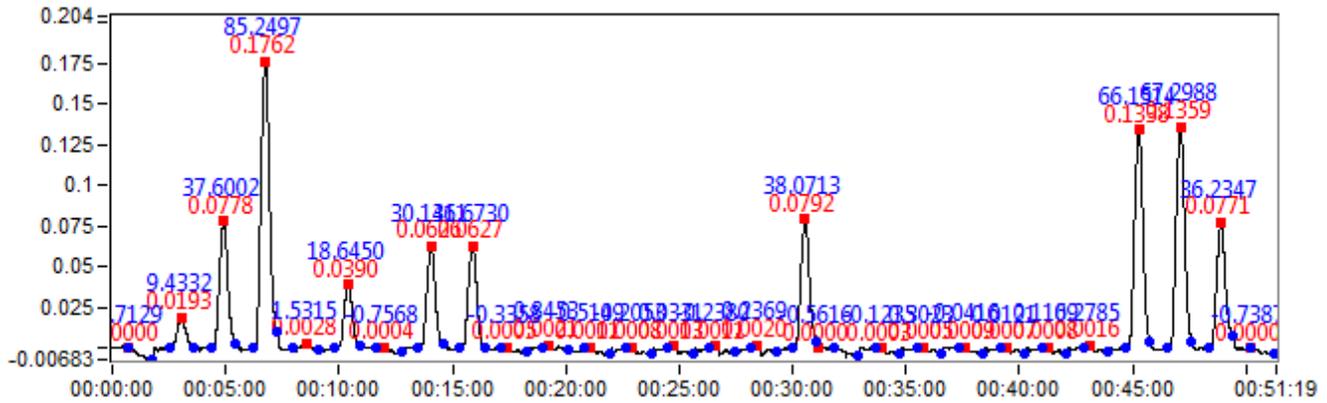


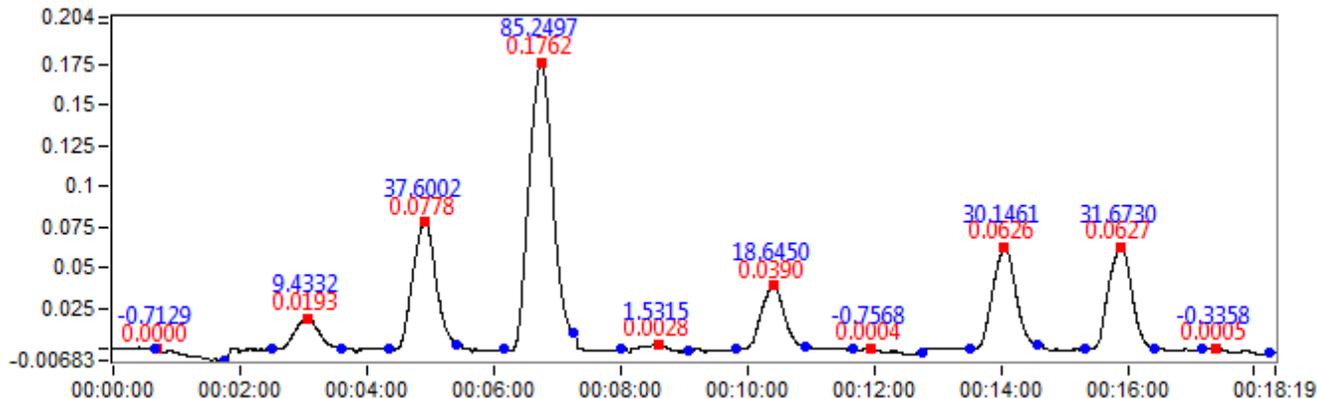
Ammonia Calibration Equation
 $y = +3.352E-2 + 1.152E-2 * X$

R^2 Value
0.997074

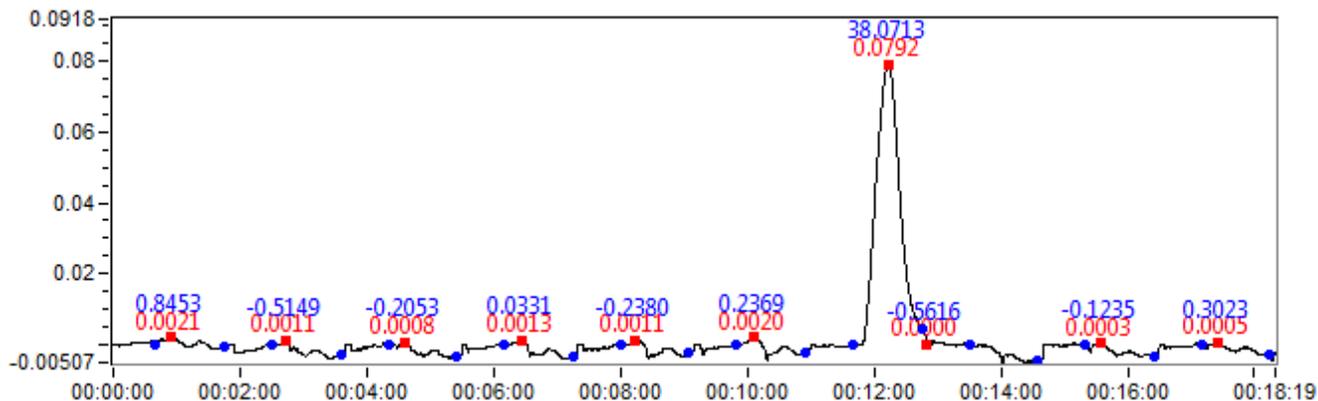
Nitrate Calibration Equation
y =

Nitrate R^2 Value
NaN

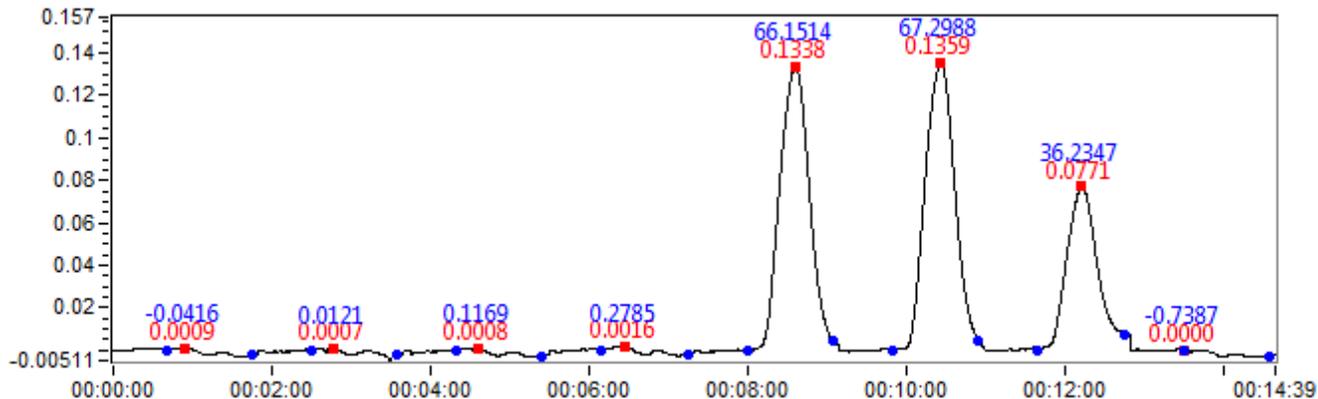




Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
4	10-25-16 14:24:04	NH3 Sample	16J0363-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.335787	0.029653			
3	10-25-16 14:22:06	NH3 Sample	16J0305-03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	31.673031	0.398551			
2	10-25-16 14:19:31	NH3 Sample	1610532-BS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 723925 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	30.146134	0.380953			
1	10-25-16 14:17:24	NH3 Sample	1610532-BLK1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 723861 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.756755	0.024802			
4	10-25-16 12:35:03	NH3 Sample	6J25003-CAL3	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 723326 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	18.644963	.25			
2	10-25-16 12:27:58	NH3 Sample	6J25003-CAL1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 723114 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	1.531470	.05			
6	10-25-16 12:22:29	NH3 Sample	6J25003-CAL5	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 722713 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	85.249667	1			
5	10-25-16 12:20:31	NH3 Sample	6J25003-CAL4	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 722713 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	37.600237	.5			
3	10-25-16 12:16:35	NH3 Sample	6J25003-CAL2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 722713 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	9.433227	.15			
1	10-25-16 12:06:13	NH3 Sample	6J25003-ICB1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 722461 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.712865	0.000000			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
4	10-25-16 14:58:13	NH3 Sample	16J0386-04	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.302307	0.037007			
3	10-25-16 14:56:15	NH3 Sample	16J0386-03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.123460	0.032100			
2	10-25-16 14:41:47	NH3 Sample	6J25003-CCB1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724534 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.561618	0.027051			
1	10-25-16 14:39:49	NH3 Sample	6J25003-CCV1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724534 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	38.071276	0.472290			
10	10-25-16 14:35:51	NH3 Sample	16J0386-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.236880	0.036253			
9	10-25-16 14:33:53	NH3 Sample	16J0386-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.237965	0.030781			
8	10-25-16 14:31:55	NH3 Sample	16J0363-05	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.033081	0.033904			
7	10-25-16 14:29:57	NH3 Sample	16J0363-04	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.205274	0.031157			
6	10-25-16 14:27:59	NH3 Sample	16J0363-03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.514950	0.027588			
5	10-25-16 14:26:01	NH3 Sample	16J0363-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.845302	0.043265			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
2	10-25-16 15:23:14	NH3 Sample	6J25003-CCB2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725836 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.738703	0.025010			
1	10-25-16 15:21:06	NH3 Sample	6J25003-CCV2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725772 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	36.234747	0.451124			
10	10-25-16 15:10:00	NH3 Sample	1610532-MSD1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	67.298820	0.809133			
9	10-25-16 15:08:02	NH3 Sample	1610532-MS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	66.151406	0.795910			
8	10-25-16 15:06:04	NH3 Sample	16J0414-03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.278496	0.036733			
7	10-25-16 15:04:06	NH3 Sample	16J0414-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.116881	0.034870			
6	10-25-16 15:02:08	NH3 Sample	16J0414-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.012057	0.033662			
5	10-25-16 15:00:11	NH3 Sample	1610532-DUP1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.041604	0.033044			



REPORT

3337 MICHELSON DRIVE, SUITE CN 750
IRVINE, CA 92612
(714) 730-6239 • FAX (714) 730-6462
www.truesdail.com

Advanced Technology Laboratories-NV

3151 W Post Rd
Las Vegas, NV 89118

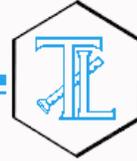
Project Name: **ATL-NV**

Table of Contents
Truesdail Laboratories, Inc. Data Package
For Laboratory Number 16J0414

<u>ITEM</u>	<u>Section</u>
Case Narrative	1.0
Summary of Final Results and Analyst Page	2.0
Final Reports	3.0
Chain of Custody and Sample Receipt Records	4.0
Sample Preparation and Analytical Raw Data	5.0

Section 1.0

Case Narrative



REPORT

3337 MICHELSON DRIVE, SUITE CN 750
IRVINE, CA 92612
(714) 730-6239 • FAX (714) 730-6462
www.truesdail.com

Client: Advanced Technology Laboratories-NV

3151 W Post Rd
Las Vegas, NV 89118

Attention: Marlon Cartin

Project Name: ATL-NV

Work Order No.: 16J0414

Printed: 11/01/2016

CASE NARRATIVE

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Ammonia analyses. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on October 25, 2016, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter will be kept in warm storage for additional 2 months before disposal.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 203

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
N021332-001F / MW-903-Q416	16J0414-01	Water		10/20/2016 08:05	10/25/2016 10:05
N021332-002F / OW-02D-Q416	16J0414-02	Water		10/20/2016 08:44	10/25/2016 10:05
N021332-003F / OW-02M-Q416	16J0414-03	Water		10/20/2016 07:55	10/25/2016 10:05

DEFINITIONS

Symbol	Definition
DF	Dilution Factor
MDL	Method Detection Limit
ND	Not Detected
RL	Reporting Limit

Respectfully yours,

Shelly Brady
Customer Service Manager

Section 2.0

Summary of Final Results

**N021332-001F / MW-903-Q416
16J0414-01 (Water)**

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
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Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	ND	0.0500	mg/L	1	1610532	10/25/2016 15:02	Alexander Luna	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----------------	-----------------	--

**N021332-002F / OW-02D-Q416
16J0414-02 (Water)**

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
---------	--------	----	-------	----	-------	----------	---------	--------	-------

Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	ND	0.0500	mg/L	1	1610532	10/25/2016 15:04	Alexander Luna	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----------------	-----------------	--

**N021332-003F / OW-02M-Q416
16J0414-03 (Water)**

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
---------	--------	----	-------	----	-------	----------	---------	--------	-------

Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	ND	0.0500	mg/L	1	1610532	10/25/2016 15:06	Alexander Luna	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----------------	-----------------	--



QUALITY CONTROL
Wet Chemistry
Truesdail Laboratories, Inc

Table with 11 columns: Analyte, Result, RL, Units, Spike Level, Source Result, %REC, % Rec Limits, RPD, RPD Limit, Note

Batch: 1610532 - SM 4500-NH3 D M

Blank (1610532-BLK1)

Prepared & Analyzed: 10/25/2016

Ammonia ND 0.0500 mg/L

LCS (1610532-BS1)

Prepared & Analyzed: 10/25/2016

Ammonia 0.381 0.0500 mg/L 0.400 95 90-110

Duplicate (1610532-DUP1)

Source: 16J0386-04

Prepared & Analyzed: 10/25/2016

Ammonia 0.0330 0.0500 mg/L 0.0370 11 20

Matrix Spike (1610532-MS1)

Source: 16J0305-03

Prepared & Analyzed: 10/25/2016

Ammonia 0.796 0.0500 mg/L 0.400 0.399 99 75-125

Matrix Spike Dup (1610532-MSD1)

Source: 16J0305-03

Prepared & Analyzed: 10/25/2016

Ammonia 0.809 0.0500 mg/L 0.400 0.399 103 75-125 2 20

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

Section 3.0

Final Reports

Method: SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: N021332-001F / MW-903-Q416
Lab Sample ID: 16J0414-01
Project: ATL-NV

Date Sampled: 10/20/16 08:05

Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0111	0.0500	1		AL	10/25/16 15:02	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: N021332-002F / OW-02D-Q416
Lab Sample ID: 16J0414-02
Project: ATL-NV

Date Sampled: 10/20/16 08:44

Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0111	0.0500	1		AL	10/25/16 15:04	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: N021332-003F / OW-02M-Q416
Lab Sample ID: 16J0414-03
Project: ATL-NV

Date Sampled: 10/20/16 07:55

Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0111	0.0500	1		AL	10/25/16 15:06	SM 4500-NH3 D M

METHOD BLANK DATA SHEET

SM 4500-NH3 D M

Client: Advanced Technology Laboratories-NV

Project: ATL-NV

Laboratory ID: 1610532-BLK1

Prepared: 10/25/16 12:00

Preparation: SM 4500-NH3 D M

Matrix: Water

Analyzed: 10/25/16 14:17

Instrument: TL01

File ID: 6J25003-022

Batch: 1610532

Sequence: 6J25003

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	RL	Q
7664-41-7	Ammonia	ND	0.0111	0.0500	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: Advanced Technology Laboratories-NV
 Project: ATL-NV
 Work Order: 16J0414

Matrix: Water
 Prep Batch: 1610532

Analysis Method: SM 4500-NH3 D M
 Prep Method: SM 4500-NH3 D M
 Laboratory ID: 1610532-MS1
 Source Sample ID: 16J0305-03

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Ammonia	0.400	0.399	0.796	99	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	RPD	QC LIMITS REC.
Ammonia	0.400	0.809	103	2	20	75 - 125

* Values outside of QC limits

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Advanced Technology Laborato

Project: ATL-NV

Instrument ID: TL01

Lab File ID: 6J25003-012

Sequence: 6J25003

Injection Date: 10/25/16

Lab Sample ID: 6J25003-CCV1

Injection Time: 14:39

COMPOUND	CONC. (mg/L)		RESPONSE FACTOR		% Rec	CCV Lower Limit	Upper Limit
	STD	CCV	CCV				
Ammonia	0.500	0.472	76.14256		94	90	110

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Advanced Technology Laborato

Project: ATL-NV

Instrument ID: TL01

Lab File ID: 6J25003-002

Sequence: 6J25003

Injection Date: 10/25/16

Lab Sample ID: 6J25003-CCV2

Injection Time: 15:21

COMPOUND	CONC. (mg/L)		RESPONSE FACTOR		% Rec	CCV Lower Limit	Upper Limit
	STD	CCV	CCV				
Ammonia	0.500	0.451	72.4695		90	90	110

Section 4.0

Chain of Custody and Sample Receipt Records

CHAIN-OF-CUSTODY RECORD

1650414

QC Level: Level IV



Subcontractor:

Truesdall
 3337 Michelson Drive, Suite CN750
 Irvine, CA 92612

TEL: (714) 730-6239
 FAX: (714) 730-6462
 Acct #:

Field Sampler: SIGNED

21-Oct-16

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests	
				SM4500-NH3D	
N021332-001F / MW-903-Q416	Groundwater	10/20/2016 8:05:00 AM	32OZP	1	
N021332-002F / OW-02D-Q416	Groundwater	10/20/2016 8:44:00 AM	32OZP	1	
N021332-003F / OW-02M-Q416	Groundwater	10/20/2016 7:55:00 AM	32OZP	1	

Level IV QC
 ALERT!!
 Level IV QC

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N21332A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia as Nitrogen by SM4500-NH3-D.

Date/Time	Date/Time
Relinquished by: <u>Hannah Glodoviza Rsu</u>	Received by: <u>SSO # 533740343</u>
Relinquished by: _____	Received by: <u>Mitchelle Papp</u>
	10/25/16 10:05

1.2°C

Log-in check list For level III data package

Client: ATL

Lab Number:

Received Date:

Sample receiving review

	Yes	No	N/A	Comment
Was special login form received by login personnel?	X			
Was COC received and signed by client and login personnel?	X			
Were all samples temperature measured and recorded on COC?	X			
Did you measure and record the pH on all metals samples on COC?	X			
Has sample integrity and analysis discrepancy form been filled out completely?	X			
Were all intercompany yellow forms generated and stamped with " alert level III QC" note?	X			
Have check -in and check out lists been filled out and attached to appropriate form?	X			
Were sample containers labeled with TLI numbers, date, and time sampled?	X			
Did you notify analyst or group leader about short holding time?	X			
Was a copy of COC attached to all yellow intracompany form?	X			
For special clients, have all their samples been logged into the Internal COC book?				
Were samples locked in fridge or special storage area?				
Was temperature recorded in the log book?			X	

Sample receiving Signature: *Michelle Reef*

16J0414

Truesdail Laboratories, Inc

Client: Advanced Technology Laboratories-NV
Project: ATL-NV

Project Manager: Shelly Brady
Project Number: [none]

Report To:

Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone: (702) 307-2659
Fax: (702) 307-2691

Invoice To:

Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone : (702) 307-2659
Fax: (702) 307-2691

Date Due: 11/03/2016 16:30 (7 day TAT)

Received By: Michelle Reed

Date Received: 10/25/2016 10:05

Logged In By: Michelle Reed

Date Logged In: 10/25/2016 10:06

Samples Received at: 1.2°C
Chain of Custody re Yes Samples intact? Yes
Letter (if sent) matc No Custody seals (if an No
Requested analyses Yes Analyses within hol Yes
Samples received in Yes

Table with 5 columns: Analysis, Due, TAT, Expires, Comments. Contains three rows of analysis data for Ammonia E with due dates and TAT values.

Reviewed By

Date



Internal Chain of Custody Logbook

Lab Number: 1690414
 Client Name: ATZ

Storage Temperature: 4°C

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
-01				10/25/16	10:35		Michelle Reed	<i>Michelle Reed</i>
	NH3	10/25/16	12:00				Alex Luna	<i>AL</i>
				10/25/16	15:30	10 mL	Alex Luna	<i>AL</i>

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
-02				10/25/16	10:35		Michelle Reed	<i>Michelle Reed</i>
	NH3	10/25/16	12:00				Alex Luna	<i>AL</i>
				10/25/16	15:30	10 mL	Alex Luna	<i>AL</i>

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
-03				10/25/16	10:35		Michelle Reed	<i>Michelle Reed</i>
	NH3	10/25/16	12:00				Alex Luna	<i>AL</i>
				10/25/16	15:30	10 mL	Alex Luna	<i>AL</i>

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Section 5.0

Sample Preparation, and Analytical Raw Data

PREPARATION BATCH SUMMARY

SM 4500-NH3 D M

Laboratory: Truesdail Laboratories, Inc

Client: Advanced Technology Laboratories-NV

Project: ATL-NV

Batch: 1610532 Batch Matrix: Water

Preparation: SM 4500-NH3 D M

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
Blank	1610532-BLK1	10/25/16 12:00	50.00	50.00
LCS	1610532-BS1	10/25/16 12:00	50.00	50.00
Duplicate	1610532-DUP1	10/25/16 12:00	50.00	50.00
Matrix Spike	1610532-MS1	10/25/16 12:00	50.00	50.00
Matrix Spike Dup	1610532-MSD1	10/25/16 12:00	50.00	50.00
N021332-001F / MW-903-Q416	16J0414-01	10/25/16 12:00	50.00	50.00
N021332-002F / OW-02D-Q416	16J0414-02	10/25/16 12:00	50.00	50.00
N021332-003F / OW-02M-Q416	16J0414-03	10/25/16 12:00	50.00	50.00

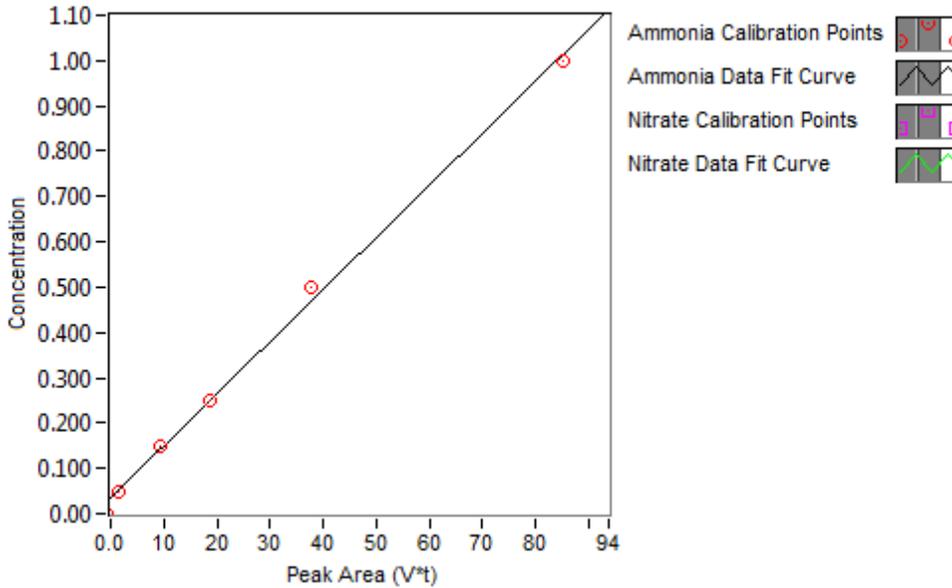
Injection Time
00:20

Wash Time
01:30

Integration Start Time
00:40

Integration End Time
01:45

Ammonia Calibration Data Fit

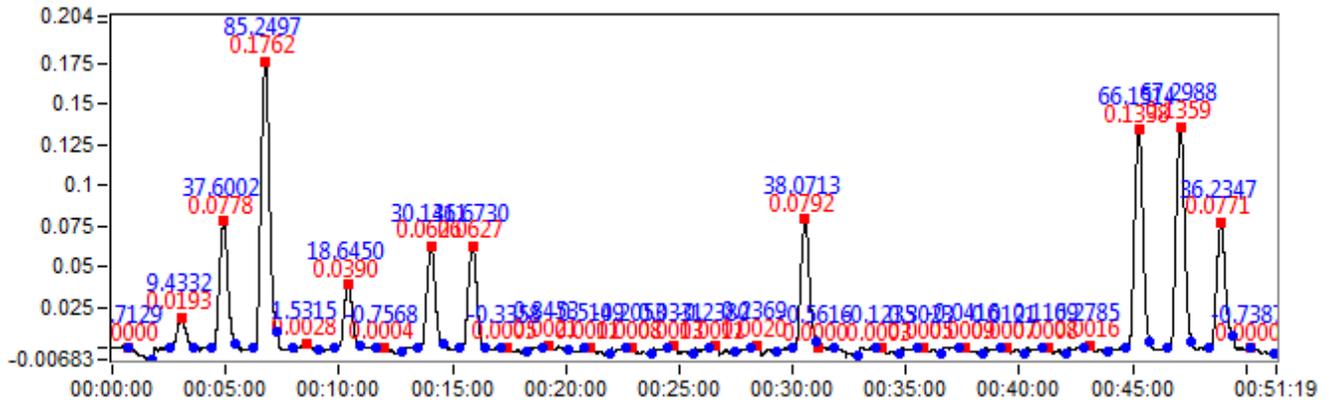


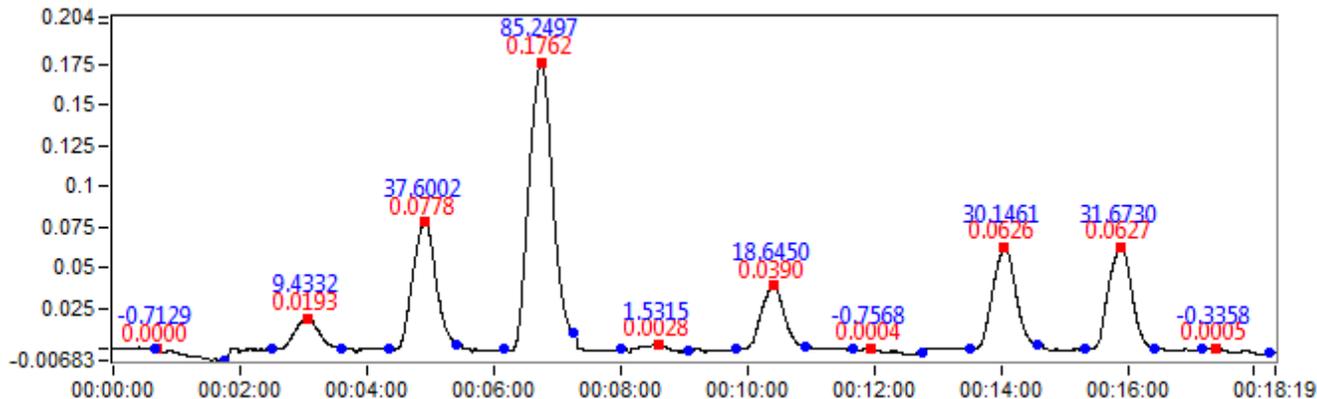
Ammonia Calibration Equation
 $y = +3.352E-2 + 1.152E-2 * X$

R^2 Value
0.997074

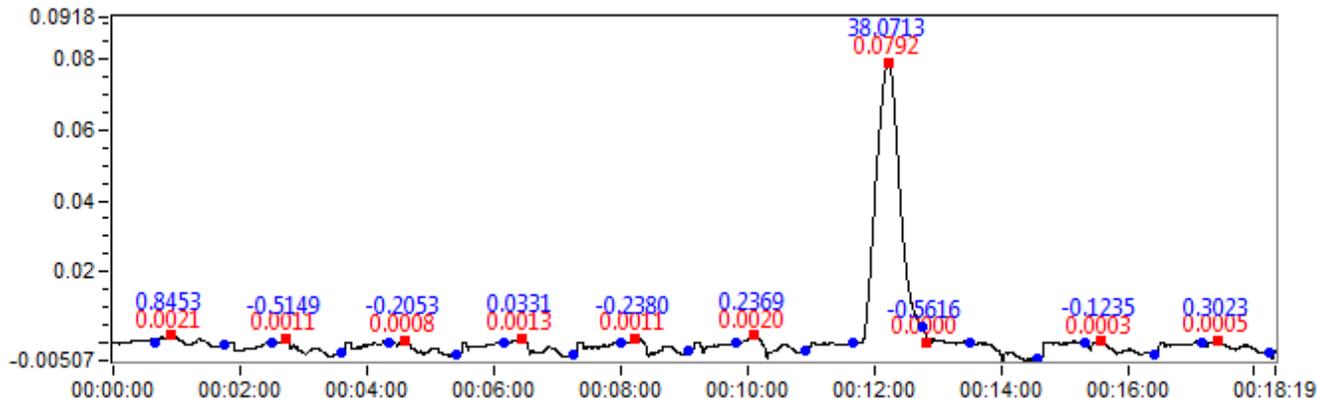
Nitrate Calibration Equation
y =

Nitrate R^2 Value
NaN

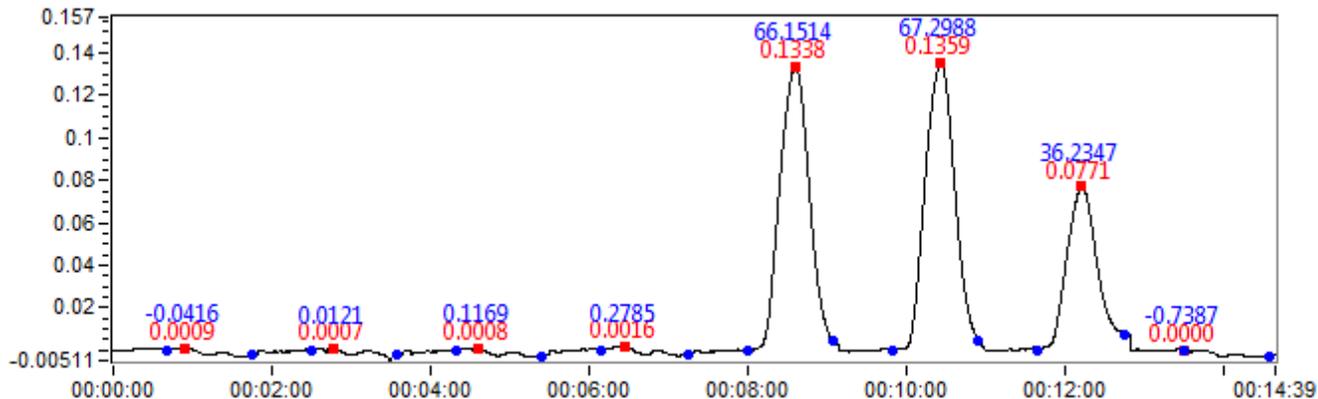




Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
4	10-25-16 14:24:04	NH3 Sample	16J0363-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.335787	0.029653			
3	10-25-16 14:22:06	NH3 Sample	16J0305-03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	31.673031	0.398551			
2	10-25-16 14:19:31	NH3 Sample	1610532-BS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 723925 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	30.146134	0.380953			
1	10-25-16 14:17:24	NH3 Sample	1610532-BLK1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 723861 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.756755	0.024802			
4	10-25-16 12:35:03	NH3 Sample	6J25003-CAL3	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 723326 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	18.644963	.25			
2	10-25-16 12:27:58	NH3 Sample	6J25003-CAL1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 723114 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	1.531470	.05			
6	10-25-16 12:22:29	NH3 Sample	6J25003-CAL5	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 722713 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	85.249667	1			
5	10-25-16 12:20:31	NH3 Sample	6J25003-CAL4	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 722713 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	37.600237	.5			
3	10-25-16 12:16:35	NH3 Sample	6J25003-CAL2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 722713 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	9.433227	.15			
1	10-25-16 12:06:13	NH3 Sample	6J25003-ICB1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 722461 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.712865	0.000000			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
4	10-25-16 14:58:13	NH3 Sample	16J0386-04	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.302307	0.037007			
3	10-25-16 14:56:15	NH3 Sample	16J0386-03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.123460	0.032100			
2	10-25-16 14:41:47	NH3 Sample	6J25003-CCB1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724534 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.561618	0.027051			
1	10-25-16 14:39:49	NH3 Sample	6J25003-CCV1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724534 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	38.071276	0.472290			
10	10-25-16 14:35:51	NH3 Sample	16J0386-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.236880	0.036253			
9	10-25-16 14:33:53	NH3 Sample	16J0386-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.237965	0.030781			
8	10-25-16 14:31:55	NH3 Sample	16J0363-05	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.033081	0.033904			
7	10-25-16 14:29:57	NH3 Sample	16J0363-04	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.205274	0.031157			
6	10-25-16 14:27:59	NH3 Sample	16J0363-03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.514950	0.027588			
5	10-25-16 14:26:01	NH3 Sample	16J0363-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 724002 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.845302	0.043265			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
2	10-25-16 15:23:14	NH3 Sample	6J25003- CCB2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725836 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.738703	0.025010			
1	10-25-16 15:21:06	NH3 Sample	6J25003- CCV2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725772 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	36.234747	0.451124			
10	10-25-16 15:10:00	NH3 Sample	1610532- MSD1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	67.298820	0.809133			
9	10-25-16 15:08:02	NH3 Sample	1610532- MS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	66.151406	0.795910			
8	10-25-16 15:06:04	NH3 Sample	16J0414- 03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.278496	0.036733			
7	10-25-16 15:04:06	NH3 Sample	16J0414- 02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.116881	0.034870			
6	10-25-16 15:02:08	NH3 Sample	16J0414- 01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.012057	0.033662			
5	10-25-16 15:00:11	NH3 Sample	1610532- DUP1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 725027 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.041604	0.033044			

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A decorative graphic consisting of three thin orange lines. One line is horizontal, extending across the bottom of the page. Two other lines are diagonal, starting from the bottom left and extending towards the top right, crossing the horizontal line.