

April 15, 2016

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**Subject: Topock IM-3 First Quarter 2016 Monitoring Report
PG&E Topock Compressor Station, Needles, California
Interim Measure No. 3 Groundwater Treatment System
(Document ID: PGE20160415A)**

Dear Ms. Innis and Mr. Perdue:

Enclosed is the First Quarter 2016 Monitoring Report for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station, Interim Measure No. 3 (IM-3) Groundwater Treatment System.

From July 2005 through September 2011 PG&E was operating the IM-3 groundwater treatment system as authorized by the Colorado River Basin Regional Water Quality Control Board (Regional Water Board) Order No. R7-2004-0103 (issued October 13, 2004); Order No. R7-2006-0060 (issued September 20, 2006); and the revised Monitoring and Reporting Program under Order No. R7-2006-0060 (issued August 28, 2008). Order No. R7-2006-0060 expired on September 20, 2011.

PG&E is currently operating the IM-3 groundwater treatment system as authorized by the U.S. Department of the Interior (DOI) Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) as documented in Attachment A to the Letter Agreement issued July 26, 2011 from the Regional Water Board to DOI, and the subsequent Letter of Concurrence issued August 18, 2011 from DOI to the Regional Water Board. Quarterly monitoring reports are required to be submitted by the fifteenth day of the month following the end of the quarter.

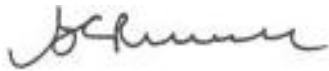
The IM-3 groundwater extraction and treatment system has extracted and treated approximately 708,186,082 gallons of water and removed approximately 6,740 pounds of total chromium from August 1, 2005 through March 31, 2016.

Pamela S. Innis
Robert Perdue
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The groundwater monitoring results for wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D will be submitted under separate cover, as part of the Compliance Monitoring Program.

If you have any questions regarding this report, please call me at (760) 326-5582.

Sincerely,

A handwritten signature in dark ink, appearing to read "Curt Russell", is positioned above the printed name.

Curt Russell
Topock Site Manager

Enclosures:

Topock IM-3 First Quarter 2016 Monitoring Report

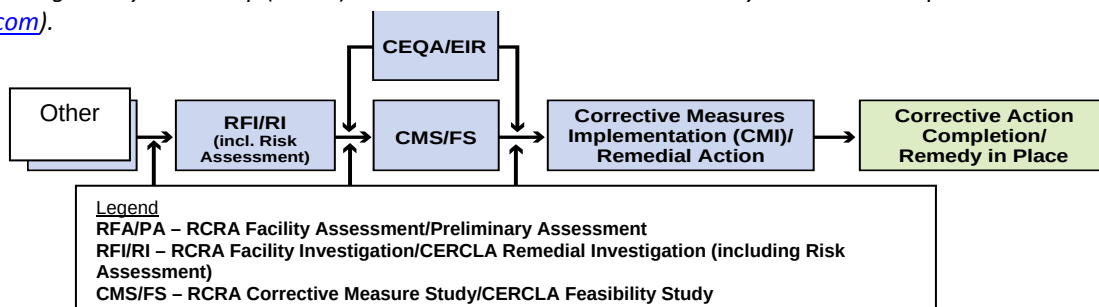
cc: José Cortez, Colorado River Basin Regional Water Board
Thomas Vandenberg, Colorado River Basin Regional Water Board
Aaron Yue, California Department of Toxic Substances Control

Topock Project Executive Abstract

Document Title: Topock IM-3 First Quarter 2016 Monitoring Report Submitting Agency/ Authored by: U.S. Department of the Interior and Regional Water Quality Control Board Final Document? ☒ Yes ☐ No	Date of Document: April 15, 2016 Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) PG&E Document ID Number: PGE20160415A
Priority Status: ☐ HIGH ☐ MED ☒ LOW Is this time critical? ☐ Yes ☒ No	Action Required: ☒ Information Only ☐ Review & Comment Return to: _____ By Date: _____ ☐ Other / Explain:
Type of Document: ☐ Draft ☒ Report ☐ Letter ☐ Memo ☐ Other / Explain:	What does this information pertain to? ☐ Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA) ☐ RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment) ☐ Corrective Measures Study (CMS)/Feasibility Study (FS) ☐ Corrective Measures Implementation (CMI)/Remedial Action ☐ California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR) ☒ Interim Measures ☐ Other / Explain:
What is the consequence of NOT doing this item? What is the consequence of DOING this item? Submittal of this report is a compliance requirement of the ARARs for waste discharge as documented in Attachment A to the Letter Agreement issued July 26, 2011.	Is this a Regulatory Requirement? ☒ Yes ☐ No If no, why is the document needed?
Other Justification/s: ☐ Permit ☐ Other / Explain:	
Brief Summary of attached document: This report covers the Interim Measures No. 3 (IM-3) groundwater treatment system monitoring activities during the First Quarter 2016 period. The groundwater monitoring results for wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D will be submitted under separate cover, as part of the Compliance Monitoring Program. Written by: PG&E	
Recommendations: This report is for your information only.	
How is this information related to the Final Remedy or Regulatory Requirements? The Topock IM-3 First Quarter 2016 Monitoring Report is related to the Interim Measure. PG&E is currently operating the IM-3 groundwater treatment system as authorized by the U.S. Department of the Interior (DOI) Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) as documented in Attachment A to the Letter Agreement issued July 26, 2011 from the Colorado River Basin Regional Water Quality Control Board (Regional Water Board) to DOI, and the subsequent Letter of Concurrence issued August 18, 2011 from DOI to the Regional Water Board.	
Other requirements of this information? None.	

Related Reports and Documents:

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



Version 9

First Quarter 2016 Monitoring Report Interim Measure No. 3 Groundwater Treatment System

Document ID: PGE20160415A

**PG&E Topock Compressor Station
Needles, California**

Prepared for
**Colorado River Basin Regional Water Quality Control Board
and
United States Department of the Interior**

on behalf of
Pacific Gas and Electric Company

April 15, 2016

CH2MHILL®
155 Grand Avenue, Suite 800
Oakland, CA 94612

**First Quarter 2016 Monitoring Report
for Interim Measure No. 3 Groundwater Treatment System**

**PG&E Topock Compressor Station
Needles, California**

Prepared for

United States Department of the Interior
and
Colorado River Basin Regional Water Quality Control Board

on behalf of

Pacific Gas and Electric Company

April 15, 2016

This report was prepared under the supervision of a
California Certified Professional Engineer



John Porcella, P.E.
Project Engineer

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Acronyms and Abbreviations

ARARs	Applicable or Relevant and Appropriate Requirements
ASSET	ASSET Laboratories
DOI	United States Department of the Interior
gpm	gallons per minute
HMI	human-machine interface
IM	Interim Measure
IW	injection well
MRP	Monitoring and Reporting Program
PG&E	Pacific Gas and Electric Company
PST	Pacific Standard Time
Regional Water Board	Colorado River Basin Regional Water Quality Control Board
RO	reverse osmosis
Truesdail	Truesdail Laboratories, Inc.
WDR	Waste Discharge Requirements

Introduction

Pacific Gas and Electric Company (PG&E) is implementing an Interim Measure (IM) to address chromium concentrations in groundwater at the Topock Compressor Station near Needles, California. The IM consists of groundwater extraction for hydraulic control of the plume boundaries in the Colorado River floodplain, treatment of extracted groundwater, and treated groundwater injection into injection wells located on San Bernardino County Assessor's Parcel No. 650-151-06. The groundwater extraction, treatment, and injection systems collectively are referred to as Interim Measure No. 3 (IM-3). Figure 1 provides a map of the project area. All figures are located at the end of this report.

From July 2005 through September 2011 PG&E was operating the IM-3 groundwater treatment system as authorized by the Colorado River Basin Regional Water Quality Control Board (Regional Water Board) Order No. R7-2004-0103 (issued October 13, 2004), Order No. R7-2006-0060 (issued September 20, 2006), and the revised Monitoring and Reporting Program (MRP) under Order No. R7-2006-0060 (issued August 28, 2008). Order No. R7-2006-0060 expired September 20, 2011.

PG&E is currently operating the IM-3 groundwater treatment system as authorized by the U.S. Department of the Interior (DOI) Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) as documented in Attachment A to the Letter Agreement issued July 26, 2011 from the Regional Water Board to DOI, and the subsequent Letter of Concurrence issued August 18, 2011 from DOI to the Regional Water Board. Quarterly monitoring reports are required to be submitted by the fifteenth day of the month following the end of the quarter.

This report covers monitoring activities related to operation of the IM-3 groundwater treatment system during the First Quarter 2016. The groundwater monitoring results for wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D will be submitted under separate cover, as part of the Compliance Monitoring Program.

SECTION 2

Sampling Station Locations

Table 1 lists the locations of sampling stations. (All tables are located at the end of this report.) Sampling station locations are shown on the process and instrumentation diagrams (Figures TP-PR-10-10-04, PR-10-03, PR-10-04 and TP-PR-10-10-06) provided at the end of this report.

SECTION 3

Description of Activities

The treatment system was initially operated between July 25 and July 28, 2005 for the Waste Discharge Requirement (WDR)-mandated startup phase. Discharge to the injection wells was initiated July 31, 2005 after successfully completing the startup phase in accordance with Order No. R7-2004-0103. Full-time operation of the treatment system commenced in August 2005.

Influent to the treatment facility, as listed in Attachment A, Waste Discharge ARARs, to the Letter Agreement issued July 26, 2011, includes:

- Groundwater from extraction wells PE-1, TW-2D, TW-2S, and TW-3D.
- Purged groundwater and water generated from rinsing field equipment during monitoring events.
- Groundwater generated during well installation, well development, and aquifer testing.

During the First Quarter 2016, extraction wells PE-1, TW-2D, and TW-3D operated at a target pumping rate of 135 gallons per minute (gpm), excluding periods of planned and unplanned downtime. The recorded operational run time for the IM-3 groundwater extraction system (combined or individual pumping), by month, was approximately:

- 99.3 percent during January 2016
- 96.1 percent during February 2016
- 93.0 percent during March 2016

Operation of the groundwater treatment system results in the following three out-flow components:

- **Treated effluent:** Treated water that is discharged to the injection well(s).
- **Reverse osmosis (RO) concentrate (brine):** Treatment byproduct that is transported and disposed of offsite at a permitted facility.
- **Sludge:** Treatment byproduct that is transported offsite for disposal at a permitted facility. Disposal occurs each time a sludge waste storage bin reaches capacity or within 90 days of the start date for accumulation in the storage container.

Activities during the First Quarter 2016 are detailed in Section 4.

SECTION 4

Groundwater Treatment System Flow Rates

The First Quarter 2016 treatment system monthly average flow rates (influent, effluent, and RO concentrate) are presented in Table 2.

The system influent flow rate was measured by flow meters at groundwater extraction wells TW-2S, TW-2D, TW-3D, and PE-1 (Figure TP-PR-10-10-03). The treatment system effluent flow rate was measured by flow meters in the piping into injection wells IW-2 and IW-3 (Figure TP-PR-10-10-11). The RO concentrate flow rate was measured by a flow meter at the piping carrying water from RO concentrate tank T-701 to the truck load-out station (Figure PR-10-04).

The IM-3 facility treated approximately 17,163,909 gallons of extracted groundwater during the First Quarter 2016. The IM-3 facility also treated approximately 27,000 gallons of injection well backwashing/re-development water and 40 gallons of purge water from site sampling activities.

Nine containers of solids (sludge) were transported offsite from the IM-3 facility during First Quarter 2016.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 3.9 percent downtime during First Quarter 2016) are summarized below. The times shown are in Pacific Standard Time (PST) to be consistent with other data collected (e.g., water level data) at the site.

4.1 January 2016

During January 2016, extraction wells PE-1 and TW-3D operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during January 2016. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 99.3 percent during the January 2016 reporting period.

The IM-3 facility treated approximately 5,939,295 gallons of extracted groundwater during January 2016. Two containers of solids from the IM-3 facility were transported offsite during January 2016.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 0.7 percent downtime during January 2016) are summarized below.

- **January 6, 2016 (planned):** The extraction well system was offline from 7:00 a.m. to 7:02 a.m., from 7:58 a.m. to 11:00 a.m., from 11:02 a.m. to 12:42 p.m., and from 1:06 p.m. to 1:08 p.m. for plant maintenance including testing of critical alarms and the leak detection system, replacing the RO prefilter, changing out the microfilter modules, and replacing the PE-1 flow meter. Extraction system downtime was 4 hours, 46 minutes.
- **January 30, 2016 (unplanned):** The extraction well system was offline from 6:54 a.m. to 7:22 a.m. due to a high level alarm in Iron Oxidation Reactor 3 (T-301C) due to flow control issues from the clarifier feed pump (P-400). Extraction system downtime was 28 minutes.
- **January 31, 2016 (unplanned):** The extraction well system was offline from 5:32 p.m. to 5:44 p.m. due to loss of power from the City of Needles. Extraction system downtime was 12 minutes.

4.2 February 2016

During February 2016, extraction wells PE-1, TW-2D, and TW-3D operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction well TW-2S was not operated during February 2016. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 96.1 percent during the February 2016 reporting period.

The IM-3 facility treated approximately 5,512,871 gallons of extracted groundwater during February 2016. The IM-3 facility treated 27,000 gallons of water from injection well backwashing/re-development. Three containers of solids from the IM-3 facility were transported offsite during February 2016.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 3.9 percent downtime during February 2016) are summarized below.

- **February 1, 2016 (unplanned):** The extraction well system was offline from 1:46 a.m. to 3:40 a.m. due to a failure of the Post Treated RO Permeate Pump (P-605) following return of plant to power from the City of Needles. Extraction system downtime was 1 hour, 54 minutes.
- **February 2, 2016 (planned):** The extraction well system was offline from 10:52 a.m. to 11:04 a.m. to reconfigure the extraction well regime to pump from TW-2D and TW-3D. Extraction system downtime was 12 minutes.
- **February 2, 2016 (unplanned):** The extraction well system was offline from 1:12 p.m. to 1:48 p.m. to make adjustments to TW-3D in the Valve Vault. Extraction system downtime was 36 minutes.
- **February 2, 2016 (unplanned):** The extraction well system was offline from 2:38 p.m. to 3:28 p.m. to replace a system control (CLA) valve. Extraction system downtime was 50 minutes.
- **February 3, 2016 (planned):** The extraction well system was offline from 8:06 a.m. to 8:44 a.m. and 10:08 a.m. to 10:10 a.m. due to testing of critical alarms and the leak detection system. Extraction system downtime was 40 minutes.
- **February 4, 2016 (unplanned):** The extraction well system was offline from 3:06 p.m. to 3:26 p.m. and 5:22 p.m. to 5:28 p.m. due to a loss of connection between the extraction well flow meter and the human-machine interface (HMI) due to a programmable logic controller (PLC) issue. Extraction system downtime was 26 minutes.
- **February 5, 2016 (unplanned):** The extraction well system was offline from 7:34 a.m. to 8:42 a.m. due to a high level alarm in the Raw Water Storage Tank (T-100). Extraction system downtime was 1 hour, 8 minutes.
- **February 6, 2016 (unplanned):** The extraction well system was offline from 11:10 a.m. to 12:32 p.m. due to a high level alarm in the Raw Water Storage Tank (T-100). Extraction system downtime was 1 hour, 22 minutes.
- **February 10, 2016 (unplanned):** The extraction well system was offline from 10:24 a.m. to 11:00 a.m., from 11:22 a.m. to 11:24 a.m., and from 11:34 a.m. to 11:40 a.m. to reprogram a flow control valve in the extraction well vault. Extraction system downtime was 44 minutes.
- **February 16, 2016 (planned):** The extraction well system was offline from 8:46 a.m. to 7:06 p.m. while Helix Electric worked on site to install an inbound phase monitor and make other repairs and improvements. Extraction system downtime was 10 hours, 20 minutes.
- **February 16, 2016 (unplanned):** The extraction well system was offline from 7:48 p.m. to 8:06 p.m. and from 9:10 p.m. to 9:30 p.m. for tank level management. Extraction system downtime was 38 minutes.
- **February 17, 2016 (planned):** The extraction well system was offline from 10:16 a.m. to 1:18 p.m. while Helix Electric worked on site to install an inbound phase monitor and make other repairs and improvements. Extraction system downtime was 3 hours, 2 minutes.
- **February 18, 2016 (planned):** The extraction well system was offline from 8:22 a.m. to 11:16 a.m. while Helix Electric worked on site to install an inbound phase monitor and make other repairs and improvements. Extraction system downtime was 2 hours, 54 minutes.

- **February 24, 2016 (unplanned):** The extraction well system was offline from 8:56 a.m. to 9:48 a.m. to change the impeller in the clarifier feed pump (P-400). Extraction system downtime was 52 minutes.
- **February 26, 2016 (unplanned):** The extraction well system was offline from 4:32 p.m. to 4:46 p.m. due to low ferrous injection rates. Extraction system downtime was 14 minutes.
- **February 27, 2016 (unplanned):** The extraction well system was offline from 6:26 a.m. to 7:32 a.m. due to a high level alarm in the Raw Water Storage Tank (T-100). Extraction system downtime was 1 hour, 6 minutes.

4.3 March 2016

During March 2016, extraction wells TW-2D and TW-3D operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction well PE-1 was run for a brief time on March 2, 2016 for groundwater sampling. Extraction well TW-2S was not operated during March 2016. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 93.0 percent during the March 2016 reporting period. The total injection rate and volume of IW-03 for March 2016 is estimated due to inaccurate readings from the IW-03 flow meter, caused by corrosion of the IW-03 CLA-valve. This valve was replaced on April 9, 2016, during planned semi-annual maintenance.

The IM-3 facility treated approximately 5,711,743 gallons of extracted groundwater during March 2016. The IM-3 facility treated 40 gallons of purge water from site sampling activities operations. Four containers of solids from the IM-3 facility were transported offsite during March 2016.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 7.0 percent downtime during March 2016) are summarized below.

- **March 1, 2016 (unplanned):** The extraction well system was offline from 12:40 p.m. to 2:16 p.m. to replace the Main Plant Influent Flow Meter (FIT-200) for recalibration. Extraction system downtime was 1 hour, 36 minutes.
- **March 2, 2016 (unplanned):** The extraction well system was offline from 7:02 p.m. to 7:24 p.m. to reset the microfilter control system. Extraction system downtime was 22 minutes.
- **March 4, 2016 (planned):** The extraction well system was offline from 9:50 a.m. to 9:52 a.m., 10:22 a.m. to 10:24 a.m., 10:26 a.m. to 10:28 a.m., 11:56 a.m. to 1:20 p.m. and 2:24 p.m. to 2:44 p.m. for plant maintenance including testing of critical alarms and the leak detection system and changing out the microfilter modules. Extraction system downtime was 1 hour, 50 minutes.
- **March 16-17, 2016 (planned):** The extraction well system was offline from 5:50 p.m. on February 16, 2016 to 5:44 p.m. on February 17, 2016 and from 5:50 p.m. to 5:52 p.m. on February 17, 2016 to collect samples to assess potential biofouling in the extraction wells. Extraction system downtime was 23 hours, 56 minutes.
- **March 18, 2016 (unplanned):** The extraction well system was offline from 9:26 a.m. to 4:18 p.m. due to the shutdown of the Primary RO system because of a variable frequency drive failure. Extraction system downtime was 6 hours, 52 minutes.
- **March 18, 2016 (unplanned):** The extraction well system was offline from 5:30 p.m. to 9:20 p.m. while the plant was in recirculation. Extraction system downtime was 3 hours, 50 minutes.
- **March 21, 2016 (unplanned):** The extraction well system was offline from 10:08 a.m. to 1:48 p.m. to replace the fill valve on the microfilter system. Extraction system downtime was 3 hours, 40 minutes.

- **March 21, 2016 (unplanned):** The extraction well system was offline from 3:18 p.m. to 4:08 p.m. to make adjustments to the ferrous injection system. Extraction system downtime was 50 minutes.
- **March 22, 2016 (unplanned):** The extraction well system was offline from 11:26 p.m. to 11:32 p.m. due to an air compressor malfunction. Extraction system downtime was 6 minutes.
- **March 27, 2016 (unplanned):** The extraction well system was offline from 6:46 p.m. to 8:26 p.m. due to a malfunction in the Microfilter air control valve. Extraction system downtime was 1 hour, 40 minutes.
- **March 27, 2016 (unplanned):** The extraction well system was offline from 8:48 p.m. to 9:30 p.m. for tank level management. Extraction system downtime was 42 minutes.
- **March 27 to 28, 2016 (unplanned):** The extraction well system was offline from 10:54 p.m. on March 27, 2016 to 1:50 a.m. on March 28, 2016 due to a malfunction in the Microfilter air control valve. Extraction system downtime was 2 hours, 56 minutes.
- **March 28, 2016 (unplanned):** The extraction well system was offline from 5:14 a.m. to 6:04 a.m. due to a malfunction of the microfilter control valve. Extraction system downtime was 50 minutes.
- **March 31, 2016 (unplanned):** The extraction well system was offline from 3:20 a.m. to 6:14 a.m. due to low permeate flow in the Primary RO system. Extraction system downtime was 2 hour, 54 minutes.

SECTION 5

Sampling and Analytical Procedures

With the exception of pH, all samples were collected at the designated sampling locations and placed directly into containers provided by ASSET Laboratories (ASSET) and Truesdail Laboratories, Inc. (Truesdail). Sample containers were labeled and packaged according to standard sampling procedures.

The samples were stored in a sealed container chilled with ice and transported to ASSET or Truesdail via courier under chain-of-custody documentation. The laboratories confirmed the samples were received in chilled condition upon arrival.

ASSET is certified by the California Department of Health Services (Certification No. 2676) under the State of California's Environmental Laboratory Accreditation Program. Truesdail is certified by the California Department of Health Services (Certification No. 1237) under the State of California's Environmental Laboratory Accreditation Program. California-certified laboratory analyses were performed in accordance with the latest edition of the *Guidelines Establishing Test Procedures for Analysis of Pollutants* (40 Code of Federal Regulations Part 136), promulgated by the U.S. Environmental Protection Agency.

During the First Quarter 2016, analysis of pH was conducted by field method pursuant to the Regional Water Board letter dated October 16, 2007 (subject: Clarification of Monitoring and Reporting Program Requirements), authorizing pH measurements to be conducted in the field. The field method pH samples were collected at the designated sampling locations and field tested within 15 minutes of sampling.

As required by the MRP, the analytical method selected for total chromium has a method detection limit of 1 part per billion, and the analytical method selected for hexavalent chromium has a method detection limit of 0.2 part per billion.

Influent, effluent, RO concentrate, and sludge sampling frequency were in accordance with the MRP.

Groundwater quality is being monitored in observation and compliance wells according to Attachment A, Waste Discharge ARARs, to the Letter Agreement issued July 26, 2011, and the procedures and schedules approved in the *Groundwater Compliance Monitoring Plan for Interim Measures No. 3 Injection Area* submitted to the Regional Water Board on June 17, 2005. Quarterly groundwater monitoring analytical results for the injection area (wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D) are reported in a separate document, in conjunction with groundwater level maps of the same monitoring wells.

Analytical Results

Laboratory reports for samples collected in the First Quarter 2016 were prepared by certified analytical laboratories, and are presented in Appendix A.

Samples were collected in accordance with the ARARs sampling frequency requirements. See Table 3 for sample collection dates.

The influent sampling analytical results are presented in Table 4. The effluent sampling analytical results are presented in Table 5. The RO concentrate sampling analytical results are presented in Table 6. The sludge sampling analytical results are presented in Table 7.

Table 8 identifies the laboratory that performed each analysis and lists the following required information:

- Sample location
- Sample identification number
- Sampler name
- Sample date
- Sample time
- Laboratory performing analysis
- Analysis method
- Analysis date
- Laboratory technician

SECTION 7

Conclusions

There were no exceedances of effluent limitations during the reporting period.

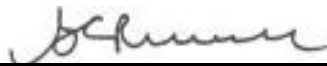
In addition, no incidents of non-compliance were identified during the reporting period. No events that caused an immediate or potential threat to human health or the environment, or new releases of hazardous waste or hazardous waste constituents, or new solid waste management units were identified during the reporting period.

SECTION 8

Certification

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 Site Manager _____

Date: _____ April 15, 2016 _____

Tables

TABLE 1

Sampling Station Descriptions*First Quarter 2016 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System*

Sample Station	Sample ID ^a	Location
Sampling Station A: Groundwater Treatment System Influent	SC-100B-WDR-###	Sample collected from tap on pipe into T-100 (see Figure TP-RP-10-10-04).
Sampling Station B: Groundwater Treatment System Effluent	SC-700B-WDR-###	Sample collected from tap on pipe downstream from T-700 (see Figure TP-RP-10-10-04).
Sampling Station D: Groundwater Treatment System Reverse Osmosis Concentrate	SC-701-WDR-###	Sample collected from tap on pipe into T-701 (see Figure PR-10-03 and PR-10-04).
Sampling Station E: Groundwater Treatment System Sludge	SC-SLUDGE-WDR-###	Sample collected from sludge accumulated in the phase separator used this quarter (see Figure TP-RP-10-10-06).

Note:

= Sequential sample identification number at each sample station.

^a The sample event number is included at the end of the sample ID (e.g., SC-100B-WDR-015).

TABLE 2

Flow Monitoring Results*First Quarter 2016 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System*

Parameter	System Influent ^{a,b} (gpm)	System Effluent ^b (gpm)	Reverse Osmosis Concentrate ^b (gpm)
January 2016 Average Monthly Flowrate	133.05	134.71	0
February 2016 Average Monthly Flowrate	132.01	131.29	2.86
March 2016 Average Monthly Flowrate	127.95	126.31	2.05

Notes:

gpm: gallons per minute

^a Extraction wells PE-1, TW-2D, and TW-3D were operated during the First Quarter 2016. Extraction well TW-2S was not operated during the First Quarter 2016.^b The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during the First Quarter 2016 is approximately 1.06 percent.

TABLE 3

Sample Collection Dates*First Quarter 2016 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System*

Parameter	Sample Collection Dates	Results
Influent	January 5	See Table 4
	February 3	
	March 1	
Effluent	January 5	See Table 5
	February 3	
	March 1	
Reverse Osmosis Concentrate	March 1	See Table 6
Sludge ^a	January 5	See Table 7

Notes:

^a Sludge samples analysis is required quarterly by composite; sludge samples were collected from each container prior to shipment off-site, and combined for the composite sample of the preceding quarter.

TABLE 4
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Influent Monitoring Results ^a
First Quarter 2016 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Monthly						Quarterly																
Sample ID	Date	Analytes Units ^b MDL	TDS	Turbidity	Specific Conductance	Field ^c pH	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate/Nitrite (as N)	Sulfate	Iron	Zinc
			mg/L	NTU	µmhos/cm	pH units	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L
			50.0	0.100	0.100	---	0.430	0.750	12.0	0.0318	0.0260	0.0160	0.0720	0.0110	0.260	0.120	0.0530	0.0230	0.0290	0.0380	0.110	1.60	17.0	0.0390
SC-100B-WDR-535	1/5/2016		4200	0.360	7400	7.3	590	550	ND (50.0)	ND (0.0500)	ND (0.500)	3.00	27.0	1.10	ND (1.00)	2.70	ND (1.00)	12.0	22.0	ND (1.00)	2.90	490	ND (20.0)	ND (10.0)
RL			50.0	0.100	0.100	---	5.00	10.0	50.0	0.0500	0.500	0.100	1.00	0.100	1.00	1.00	1.00	0.500	0.500	1.00	0.250	25.0	20.0	10.0
SC-100B-WDR-536	2/3/2016		4400	0.310	7300	7.2	590	610	---	---	---	---	---	---	---	---	---	20.0	---	---	---	---	---	---
RL			50.0	0.100	0.100	---	5.00	10.0	---	---	---	---	---	---	---	---	---	0.500	---	---	---	---	---	---
SC-100B-WDR-537	3/1/2016		4600	0.290	8100	7.3	690	670	---	---	---	---	---	---	---	---	---	16.0	---	---	---	---	---	---
RL			50.0	0.100	0.100	---	5.00	10.0	---	---	---	---	---	---	---	---	---	0.500	---	---	---	---	---	---

NOTES:
(---) = not required by the ARARs Monitoring and Reporting Program
J = concentration or reporting limits estimated by laboratory or validation
MDL = method detection limit
mg/L = milligrams per liter
N = nitrogen
ND = parameter not detected at the listed value
NTU = nephelometric turbidity units
RL = project reporting limit
µg/L = micrograms per liter
µmhos/cm = micromhos per centimeter

^a Sampling Location for all influent samples is tap on pipe from extraction wells into tank T-100 (see attached P&ID TP-PR-10-10-04).
^b Units reported in this table are those units required in the ARARs.
^c Starting 11/20/2007, analysis of pH was switched from California certified laboratory analysis to field method pursuant to the Water Board letter dated October 16, 2007 – Clarification of Monitoring and Reporting Program Requirements, stating that pH measurements may be conducted in the field.

TABLE 5
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Effluent Monitoring Results^a
First Quarter 2016 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Effluent Limits ^b	Ave. Monthly	NA	NA	NA	6.5-8.4	25	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Max Daily	NA	NA	NA	6.5-8.4	50	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sampling Frequency		Monthly																					
	Analytes Units ^c MDL ^d	TDS	Turbidity	Specific Conductance	Field pH ^e	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate/Nitrite (as N)	Sulfate	Iron	Zinc
		mg/L	NTU	µmhos/cm	pH units	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L
		50.0	0.100	0.100	---	0.0860	0.0150	12.0	0.0318	0.0260	0.0160	0.0720	0.0110	0.260	0.0120	0.270	0.0230	0.0290	0.0380	0.110	1.60	17.0	0.0390
Sample ID	Date																						
SC-700B-WDR-535	1/5/2016	4100	0.350	7500	6.92	ND (1.00)	0.210	ND (50.0)	ND (0.0500)	ND (0.500)	ND (0.100)	14.0	1.00	ND (1.00)J	2.30	ND (5.00)	1.90	25.0	1.30	2.90	490	ND (20.0)	ND (10.0)
	RL	50.0	0.100	0.100	---	1.00	0.200	50.0	0.0500	0.500	0.100	1.00	0.100	1.00	1.00	5.00	0.500	0.500	1.00	0.250	25.0	20.0	10.0
SC-700B-WDR-536	2/3/2016	4300	0.380	7500	6.98	ND (1.00)	ND (0.200)	ND (50.0)	ND (0.0500)	ND (0.500)	ND (0.100)	16.0	0.990	ND (1.00)	2.30	ND (5.00)	9.50	24.0	2.50	3.10	470	ND (20.0)	ND (10.0)
	RL	50.0	0.100	0.100	---	1.00	0.200	50.0	0.0500	0.500	0.100	1.00	0.100	1.00	1.00	5.00	0.500	0.500	1.00	0.250	25.0	20.0	10.0
SC-700B-WDR-537	3/1/2016	4200	0.320	7400	7.00	ND (5.00)	0.210	ND (50.0)	ND (0.0500)	ND (0.500)	ND (0.100)	19.0	1.10	ND (1.00)	2.10	ND (5.00)	4.10	21.0	ND (5.00)	3.20	440	ND (20.0)	ND (50.0)
	RL	50.0	0.100	0.100	---	5.00	0.200	50.0	0.0500	0.500	0.100	1.00	0.100	1.00	0.100	5.00	2.50	2.50	5.00	0.250	25.0	20.0	50.0

NOTES:

(---) = not required by the ARARs Monitoring and Reporting Program

J = concentration or reporting limits estimated by laboratory or validation

MDL = method detection limit

mg/L = milligrams per liter

N = nitrogen

NA = not applicable

ND = parameter not detected at the listed value

NTU = nephelometric turbidity units

RL = project reporting limit

µg/L = micrograms per liter

µmhos/cm = micromhos per centimeter

^a Sampling location for all effluent samples is tap on pipe downstream from tank T-700 to injection wells (see attached P&ID TP-PR-10-10-04).

^b In addition to the listed effluent limits, the ARARs state that the effluent shall not contain heavy metals, chemicals, pesticides or other constituents in concentrations toxic to human health.

^c Units reported in this table are those units required in the ARARs.

^d MDL listed is the target MDL by analysis method; however, the MDL may change for each sample analysis due to the dilution required by the matrix to meet the method QC requirements. The target MDL for each method/analyte combination is calculated annually.

^e Starting 11/20/2007, analysis of pH was switched from California certified laboratory analysis to field method pursuant to the Water Board letter dated October 16, 2007 – Clarification of Monitoring and Reporting Program Requirements, stating that pH measurements may be conducted in the field.

TABLE 6
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Reverse Osmosis Concentrate Monitoring Results ^a
First Quarter 2016 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Quarterly																						
Sample ID	Date	Analytes	TDS	Specific Conductance	Field ^c	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		Units ^b	mg/L	µmhos/cm	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		MDL	500	0.100	---	0.0021	0.000075	0.00066	0.00040	0.0018	0.00066	0.00024	0.00033	0.0013	0.120	0.0013	0.00073	0.000025	0.00095	0.0017	0.00058	0.00084	0.00062	0.00098
SC-701-WDR-537	3/1/2016		31000	44000	7.8	ND (0.0250)	0.00220	ND (0.0120)	ND (0.0025)	0.150	ND (0.0120)	ND (0.0120)	ND (0.0120)	ND (0.0050)J	17.0	ND (0.0250)	0.160	ND (0.00020)	ND (0.0250)	0.0310	ND (0.0120)	ND (0.0120)	ND (0.0250)	ND (0.250)
RL			500	0.100	---	0.0250	0.0010	0.0120	0.0025	0.0250	0.0120	0.0120	0.0120	0.0050	1.00	0.0250	0.0120	0.00020	0.0250	0.0120	0.0120	0.0120	0.0250	0.250

NOTES:
(---) = not required by the ARARs Monitoring and Reporting Program
MDL = method detection limit
mg/L = milligrams per liter
ND = parameter not detected at the listed value
RL = project reporting limit
µg/L = micrograms per liter
µmhos/cm = micromhos per centimeter

^a Sampling location for all reverse osmosis samples is tap on pipe T-701 (see attached P&ID PR-10-04).
^b Units reported in this table are those units required in the ARARs.
^c Starting 11/20/2007, analysis of pH was switched from California certified laboratory analysis to field method pursuant to the Water Board letter dated October 16, 2007 – Clarification of Monitoring and Reporting Program Requirements, stating that pH measurements may be conducted in the field.

TABLE 7
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Sludge Monitoring Results^a
First Quarter 2016 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Quarterly																				
Sample ID	Date	Analytes		Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		Units ^b		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		MDL		0.220	0.170	0.230	0.170	0.0260	0.0540	0.170	0.0840	0.130	0.800	0.120	0.0600	0.0100	0.0430	0.230	0.0500	0.160	0.250	0.270
Phase Separator-Sludge-535	1/5/2016			4300	120	11.0	30.0	76.0	ND (3.30)	3.90	6.80	270	43.0	ND (3.30)	6.80	ND (0.330)	54.0	ND (3.30)	ND (3.30)	ND (6.60)	59.0	37.0
RL				3.30	3.30	6.60	3.30	3.30	3.30	3.30	3.30	6.60	3.30	3.30	3.30	0.330	3.30	3.30	3.30	6.60	3.30	3.30

NOTES:
(---) = not required by the ARARs Monitoring and Reporting Program
J = concentration or reporting limits estimated by laboratory or validation
mg/kg = milligrams per killogram
mg/L = milligrams per liter
MDL = method detection limit
ND = parameter not detected at the listed reporting limit
RL = project reporting limit

^a Sampling location for all sludge samples is the sludge collection bin (see attached P&ID TP-PR-10-10-06).
^b Units reported in this table are those units required in the ARARs.

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)

Monitoring Information

First Quarter 2016 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-100B	SC-100B-WDR-535	Chris Lentz	1/5/2016	9:55:00 AM	ASSET	EPA 120.1	SC	1/6/2016	Lilia Ramit
					ASSET	EPA 200.7	AL	1/17/2016	Claire Ignacio
					ASSET	EPA 200.7	B	1/17/2016	Claire Ignacio
					ASSET	EPA 200.7	FE	1/17/2016	Claire Ignacio
					ASSET	EPA 200.8	AS	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	BA	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	CR	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	CU	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	MN	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	MO	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	NI	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	PB	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	SB	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	ZN	1/8/2016	Claire Ignacio
					ASSET	EPA 218.6	CR6	1/6/2016	Ryan Balilu
					ASSET	EPA 300.0	FL	1/6/2016	Quennie Manimtim
					ASSET	EPA 300.0	SO4	1/6/2016	Quennie Manimtim
					FIELD	HACH	PH	1/5/2016	Chris Lentz
					ASSET	SM 2540C	TDS	1/6/2016	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	1/12/2016	Ryan Balilu
					ASSET	SM2130B	TRB	1/6/2016	Lilia Ramit
					TLI	SM4500NH3D	NH3N	1/13/2016	Alex Luna
SC-100B	SC-100B-WDR-536	Josh R.	2/3/2016	7:10:00 AM	ASSET	EPA 120.1	SC	2/3/2016	Lilia Ramit
					ASSET	EPA 200.8	CR	2/5/2016	Claire Ignacio
					ASSET	EPA 200.8	MN	2/5/2016	Claire Ignacio
					ASSET	EPA 218.6	CR6	2/8/2016	Ryan Balilu
					FIELD	HACH	PH	2/3/2016	Chris Lentz
					ASSET	SM 2540C	TDS	2/3/2016	Lilia Ramit
					ASSET	SM2130B	TRB	2/3/2016	Lilia Ramit
SC-100B	SC-100B-WDR-537	Josh R.	3/1/2016	11:35:00 AM	ASSET	EPA 120.1	SC	3/2/2016	Lilia Ramit
					ASSET	EPA 200.8	CR	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	MN	3/8/2016	Claire Ignacio
					ASSET	EPA 218.6	CR6	3/4/2016	Ryan Balilu
					FIELD	HACH	PH	3/1/2016	Josh R.
					ASSET	SM 2540C	TDS	3/2/2016	Lilia Ramit

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)

Monitoring Information

First Quarter 2016 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-100B	SC-100B-WDR-537	Josh R.	3/1/2016	11:35:00 AM	ASSET	SM2130B	TRB	3/2/2016	Lilia Ramit
SC-700B	SC-700B-WDR-535	Chris Lentz	1/5/2016	9:55:00 AM	ASSET	EPA 120.1	SC	1/6/2016	Lilia Ramit
					ASSET	EPA 200.7	AL	1/17/2016	Claire Ignacio
					ASSET	EPA 200.7	B	1/17/2016	Claire Ignacio
					ASSET	EPA 200.7	FE	1/17/2016	Claire Ignacio
					ASSET	EPA 200.8	AS	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	BA	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	CR	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	CU	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	MN	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	MO	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	NI	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	PB	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	SB	1/8/2016	Claire Ignacio
					ASSET	EPA 200.8	ZN	1/8/2016	Claire Ignacio
					ASSET	EPA 218.6	CR6	1/6/2016	Ryan Balilu
					ASSET	EPA 300.0	FL	1/6/2016	Quennie Manimtim
					ASSET	EPA 300.0	SO4	1/6/2016	Quennie Manimtim
					FIELD	HACH	PH	1/5/2016	Chris Lentz
					ASSET	SM 2540C	TDS	1/6/2016	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	1/12/2016	Ryan Balilu
					ASSET	SM2130B	TRB	1/6/2016	Lilia Ramit
					TLI	SM4500NH3D	NH3N	1/13/2016	Alex Luna
SC-700B	SC-700B-WDR-536	Josh R.	2/3/2016	7:10:00 AM	ASSET	EPA 120.1	SC	2/3/2016	Lilia Ramit
					ASSET	EPA 200.7	AL	2/7/2016	Claire Ignacio
					ASSET	EPA 200.7	B	2/7/2016	Claire Ignacio
					ASSET	EPA 200.7	FE	2/7/2016	Claire Ignacio
					ASSET	EPA 200.8	AS	2/5/2016	Claire Ignacio
					ASSET	EPA 200.8	BA	2/5/2016	Claire Ignacio
					ASSET	EPA 200.8	CR	2/5/2016	Claire Ignacio
					ASSET	EPA 200.8	CU	2/5/2016	Claire Ignacio
					ASSET	EPA 200.8	MN	2/5/2016	Claire Ignacio
					ASSET	EPA 200.8	MO	2/5/2016	Claire Ignacio
					ASSET	EPA 200.8	NI	2/5/2016	Claire Ignacio
					ASSET	EPA 200.8	PB	2/5/2016	Claire Ignacio

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)

Monitoring Information

First Quarter 2016 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-536	Josh R.	2/3/2016	7:10:00 AM	ASSET	EPA 200.8	SB	2/5/2016	Claire Ignacio
					ASSET	EPA 200.8	ZN	2/5/2016	Claire Ignacio
					ASSET	EPA 218.6	CR6	2/8/2016	Ryan Balilu
					ASSET	EPA 300.0	FL	2/11/2016	Quennie Manimtim
					ASSET	EPA 300.0	SO4	2/11/2016	Quennie Manimtim
					FIELD	HACH	PH	2/3/2016	Chris Lentz
					ASSET	SM 2540C	TDS	2/3/2016	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	2/5/2016	Ryan Balilu
					ASSET	SM2130B	TRB	2/3/2016	Lilia Ramit
					TLI	SM4500NH3D	NH3N	2/9/2016	Alex Luna
SC-700B	SC-700B-WDR-537	Josh R.	3/1/2016	11:33:00 AM	ASSET	EPA 120.1	SC	3/2/2016	Lilia Ramit
					ASSET	EPA 200.7	AL	3/3/2016	Claire Ignacio
					ASSET	EPA 200.7	B	3/3/2016	Claire Ignacio
					ASSET	EPA 200.7	FE	3/3/2016	Claire Ignacio
					ASSET	EPA 200.8	AS	3/15/2016	Claire Ignacio
					ASSET	EPA 200.8	BA	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	CR	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	CU	3/15/2016	Claire Ignacio
					ASSET	EPA 200.8	MN	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	MO	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	NI	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	PB	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	SB	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	ZN	3/8/2016	Claire Ignacio
					ASSET	EPA 218.6	CR6	3/4/2016	Ryan Balilu
					ASSET	EPA 300.0	FL	3/2/2016	Quennie Manimtim
					ASSET	EPA 300.0	SO4	3/2/2016	Quennie Manimtim
					FIELD	HACH	PH	3/1/2016	Josh R.
					ASSET	SM 2540C	TDS	3/2/2016	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	3/8/2016	Ryan Balilu
					ASSET	SM2130B	TRB	3/2/2016	Lilia Ramit
					TLI	SM4500NH3D	NH3N	3/10/2016	Alex Luna
SC-701	SC-701-WDR-537	Josh R.	3/1/2016	11:42:00 AM	ASSET	EPA 120.1	SC	3/2/2016	Lilia Ramit
					ASSET	EPA 200.8	AG	3/15/2016	Claire Ignacio
					ASSET	EPA 200.8	AS	3/8/2016	Claire Ignacio

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
First Quarter 2016 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-701	SC-701-WDR-537	Josh R.	3/1/2016	11:42:00 AM	ASSET	EPA 200.8	BA	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	BE	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	CD	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	CO	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	CR	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	CU	3/15/2016	Claire Ignacio
					ASSET	EPA 200.8	MN	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	MO	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	NI	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	PB	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	SB	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	SE	3/15/2016	Claire Ignacio
					ASSET	EPA 200.8	TL	3/15/2016	Claire Ignacio
					ASSET	EPA 200.8	V	3/8/2016	Claire Ignacio
					ASSET	EPA 200.8	ZN	3/8/2016	Claire Ignacio
					ASSET	EPA 218.6	CR6	3/4/2016	Ryan Balilu
					ASSET	EPA 245.1	HG	3/3/2016	Claire Ignacio
					ASSET	EPA 300.0	FL	3/2/2016	Quennie Manimtim
					FIELD	HACH	PH	3/1/2016	Josh R.
					ASSET	SM 2540C	TDS	3/2/2016	Lilia Ramit
Phase Separator	Phase Separator-Sludge-535	Chris Lentz	1/5/2016	2:40:00 PM	ASSET	EPA 300.0	FL	1/11/2016	Quennie Manimtim
					ASSET	EPA 6010B	AG	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	AS	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	BA	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	BE	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	CD	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	CO	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	CR	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	CU	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	MN	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	MO	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	NI	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	PB	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	SB	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	SE	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	TL	1/10/2016	Hanah Glodoviza

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)

Monitoring Information

First Quarter 2016 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
Phase Separator	Phase Separator-Sludge-535	Chris Lentz	1/5/2016	2:40:00 PM	ASSET	EPA 6010B	V	1/10/2016	Hanah Glodoviza
					ASSET	EPA 6010B	ZN	1/10/2016	Hanah Glodoviza
					ASSET	EPA 7471A	HG	1/6/2016	Claire Ignacio
					ASSET	SW 7199	CR6	1/11/2016	Ryan Balilu

NOTES:

SC-700B = Sampling location for all effluent samples is tap on pipe downstream from tank T-700 to injection well IW-2 (see attached P&ID TP-PR-10-10-04).

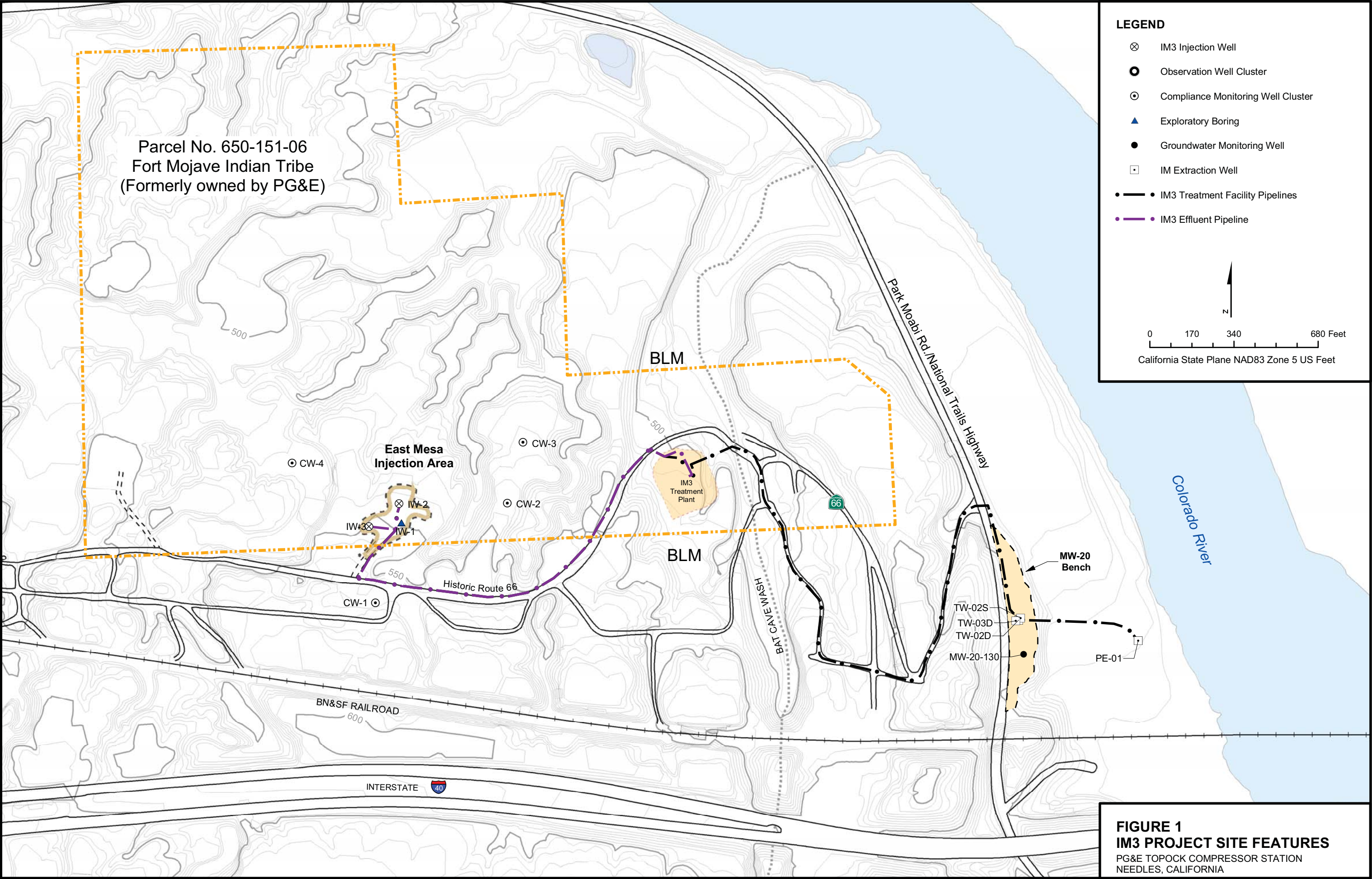
SC-100B = Sampling location for all influent samples is tap on pipe from extraction wells into tank T-100 (see attached P&ID TP-PR-10-10-04).

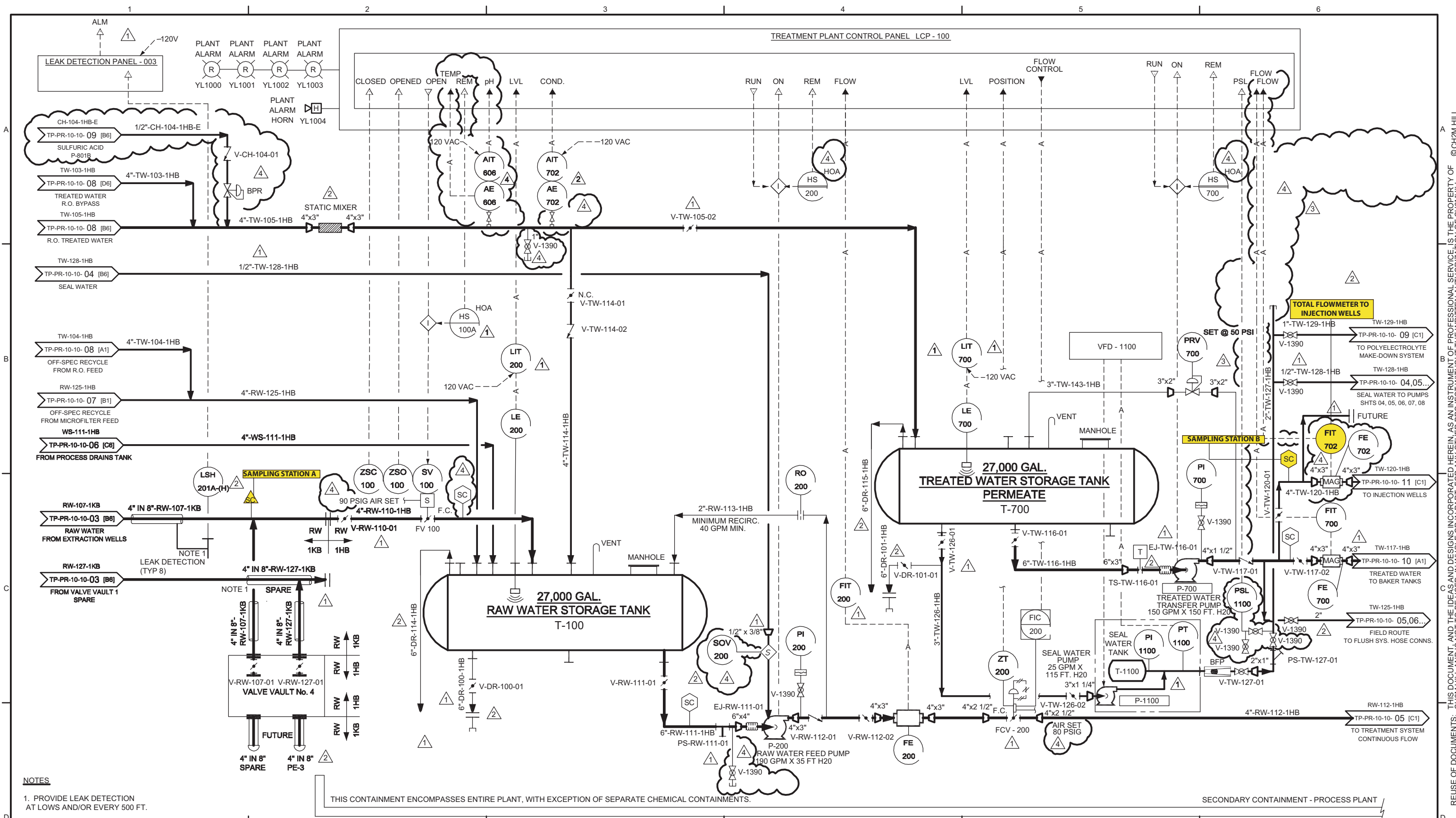
SC-701 = Sampling location for all reverse osmosis samples is tap on pipe T-701 (see attached P&ID PR-10-04).

Prior to April 11, 2007 the analytical methods listed in the 40 CFR Part 136 for pH and TDS were E150.1 and E160.1, respectively. Per EPA and Department of Health Services guidelines, the analytical methods listed in the current 40 CFR Part 136 have changed to SM4500-H B and SM2540C as shown on the table.

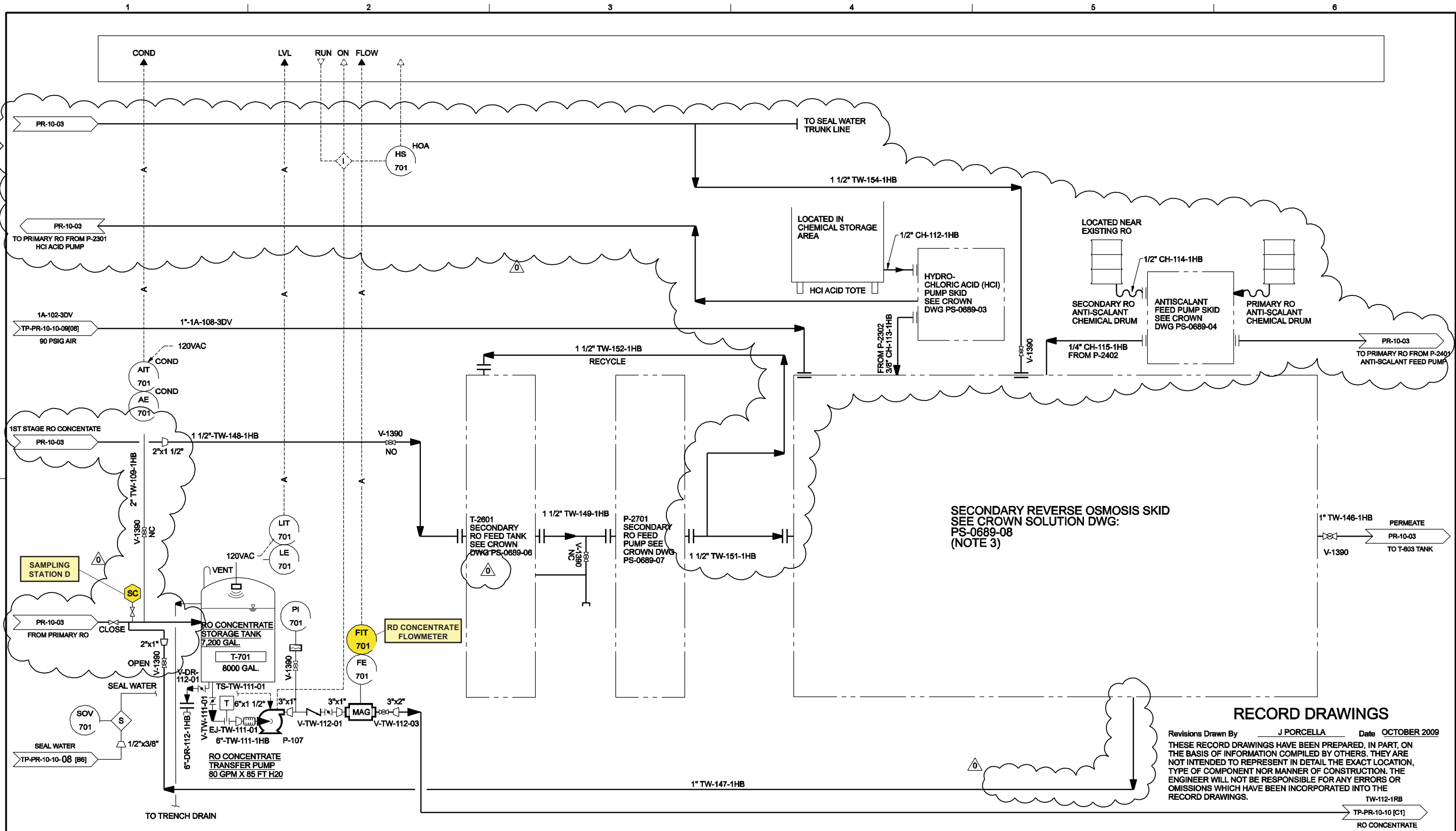
ALKB = alkalinity, bicarb as CaCO ₃	MO = molybdenum
ALKC = alkalinity, carb as CaCO ₃	MOIST = moisture
AL = aluminum	NH ₃ N = ammonia (as N)
Ag = silver	NI = nickel
AS = arsenic	NO ₃ NO ₂ N = nitrate/nitrite (as N)
B = boron	PB = lead
BA = barium	PH = pH
BE = beryllium	SB = antimony
CD = cadmium	SC = specific conductance
CO = cobalt	SE = selenium
CR = chromium	SO ₄ = sulfate
CR6 = hexavalent chromium	TDS = total dissolved solids
CU = copper	TL = thallium
FE = iron	TLI = Truesdail Laboratories, Inc.
FETD = iron, dissolved	TRB = turbidity
FL = fluoride	V = vanadium
HG = mercury	ZN = zinc
MN = manganese	
MND = manganese, dissolved	

Figures





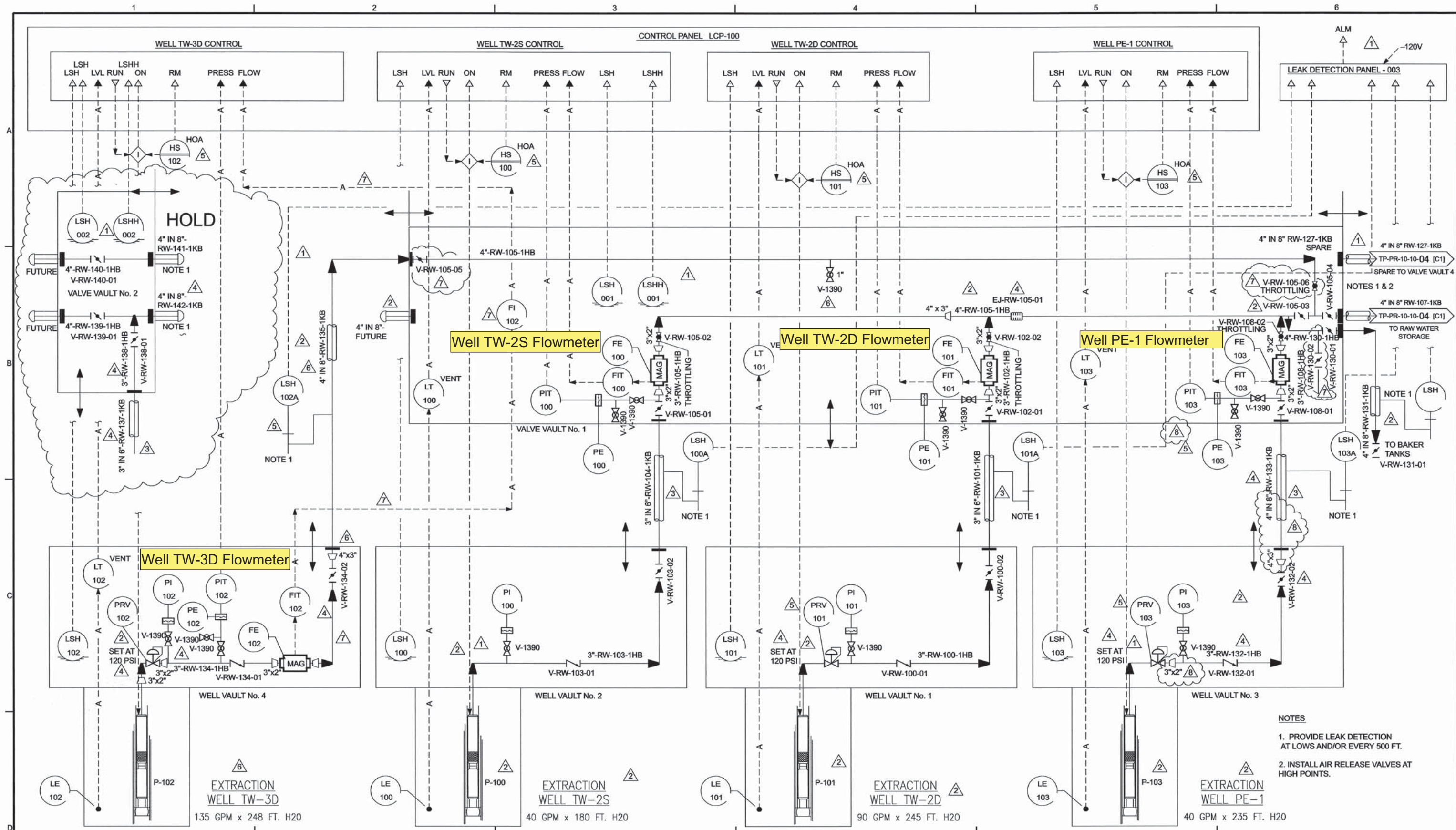
NO.		DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 4	DATE 09/21/05	PRINT DISTRIBUTION	STATUS				PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 EXPANDED GROUNDWATER EXTRACTION AND TREATMENT SYSTEM PROJ NO. 315994		PROCESS AND INSTRUMENTATION DIAGRAM SHEET 04 STORAGE AREA	
D	07/28/04		FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE	ISSUED	REV	DATE	SDE	PEM	DWG. NO. TP-PR-10-10-04 REV. 4	
0	09/03/04		APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL		ELECTRICAL		STATUS	PRELIMINARY						
1	10/13/04		REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL		INST & CONTROL		REV.	FOR REVIEW AND APPROVAL	D	07/28/04				
2	01/23/05		REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL		ARCHITECTURAL		CLIENT	APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP		
3	02/14/05		ADDED RECIRC. LINE AND PRV VALVE TO T-700 - APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS		ENVIRONMENTAL		FIELD	REVISED & APPROVED FOR CONSTRUCTION	4	/ /				
4	09/21/05		REVISED PER AS-BUILT CONDITIONS	EFC	AJ	PIPING		GEN. ARRANG.		INTRA CO.						CH2MHILL	
										SCALE NONE							



RECORD DRAWINGS

Revisions Drawn By J PORCELLA Date OCTOBER 2009
THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.

** ORIGINALLY STAMPED AND SIGNED BY: JOHN PORCELLA CALIFORNIA PE NO. C70145 ON 04-01-2009 **		REVISION	NO.	DATE	BY	CHK	REVISION APPROVAL		REV 0	DATE 10/02/09	PRINT DISTRIBUTION	STATUS				PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 PLANT PERFORMANCE IMPROVEMENTS PROJ NO. 362032	PROCESS AND INSTRUMENTATION DIAGRAM REVERSE OSMOSIS SYSTEM SHEET TWO OF TWO	
			A	2/12/09			DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE	ISSUED	REV	DATE	SDE	PEM		
			B	2/12/09			CIVIL	SJ	ELECTRICAL	FH	STATUS	PRELIMINARY	A	2/12/09	JP	JP		
			C	4/01/09		JR	STRUCTURAL	JP	INST & CONTROL	JG	REV.	FOR REVIEW AND APPROVAL	C	4/01/09	JP	JP		
			D	11/17/09		JR	MECHANICAL	SJ	ARCHITECTURAL		CLIENT	APPROVED FOR CONSTRUCTION						
							PROCESS	DF	ENVIRONMENTAL		FIELD	REVISED & APPROVED FOR CONSTRUCTION	0	10/02/09	JP	JP	DWG. NO. PR-10-04	
							PIPING	SJ	GEN. ARRANG.	SJ	INTRA CO.						REV. 0	
												SCALE	NONE			CH2MHILL		



RESPONSIBLE ENGINEER:
Kenneth L. Martins
PE # CH4876 Exp. 6-30-05

NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 8	DATE 12/06/05	PRINT DISTRIBUTION	STATUS
8	12/07/05	REMOVED PE-1 HOLDS	JBW	SDH	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL	—	ELECTRICAL	—	STATUS
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL	—	INST. & CONTROL	—	REV.
3	03/16/05	DELETED NOTES, APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL	—	ARCHITECTURAL	—	CLIENT
4	07/20/05	RELIEF VALVE SETTINGS, WELL PE-1 LINE TAGS, HOLDS REMOVED, APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS	—	ENVIRONMENTAL	—	FIELD
5	09/27/05	FINAL RECORD ISSUE	EFC	AJ	PIPING	—	GEN. ARRANG.	—	INTRA CO.
6	10/06/05	REVISED FINAL RECORD - ADDED TW-3D	EFC	AJ	—	—	—	—	—
7	10/19/05	REVISED AS NOTED	EFC	AJ	—	—	—	—	—

ISSUED	REV	DATE	SDE	PEM
PRELIMINARY				
FOR REVIEW AND APPROVAL	D	07/28/04		
APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP
REVISED & APPROVED FOR CONSTRUCTION	7	12/19/05	for KLM	TP

SCALE NONE

PACIFIC GAS & ELECTRIC CO.
TOPOCK COMPRESSOR STATION
INTERIM MEASURE 3
EXPANDED GROUNDWATER EXTRACTION
AND TREATMENT SYSTEM
PROJ. NO. 315994

CH2MHILL

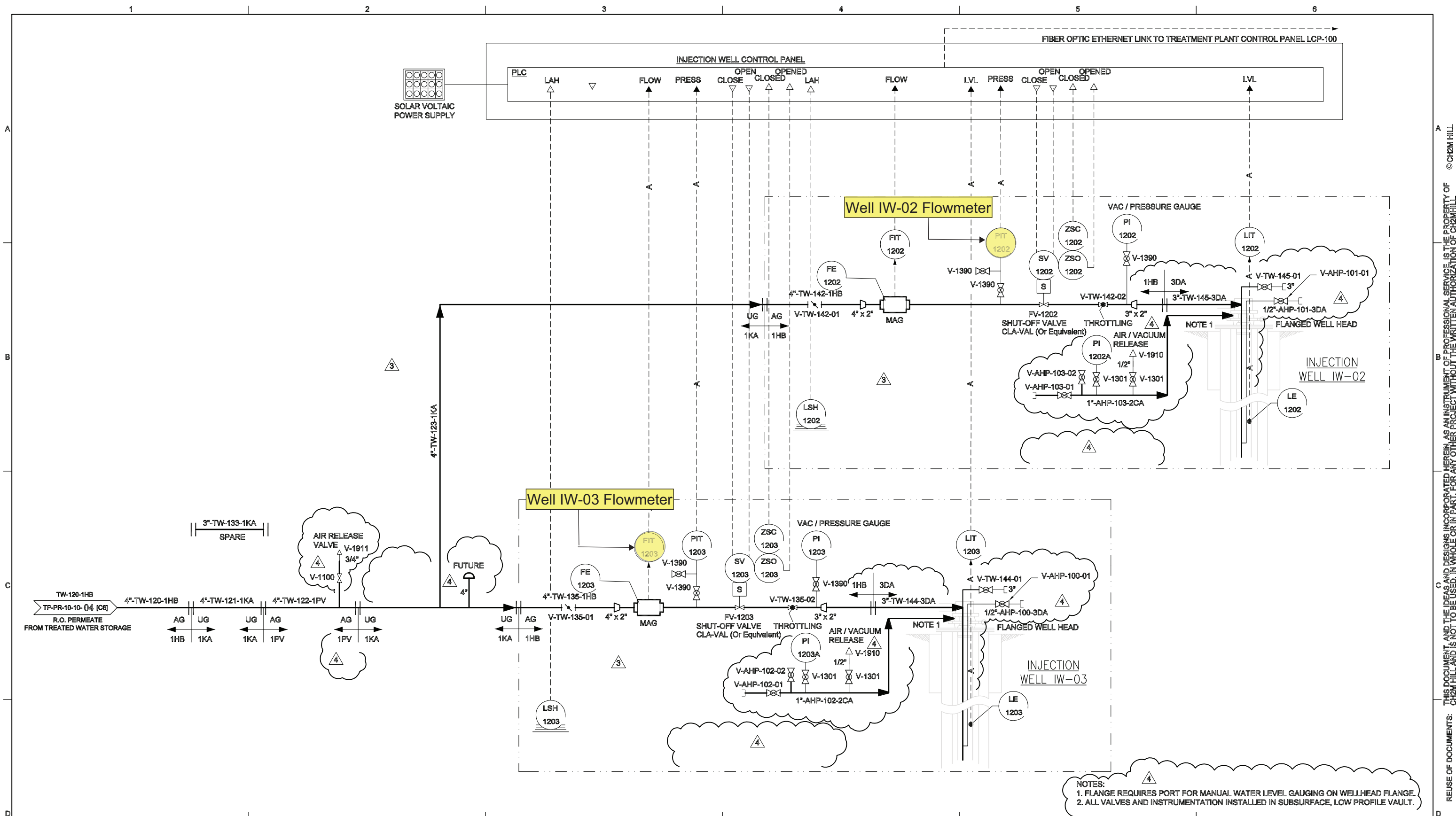
PROCESS AND INSTRUMENTATION DIAGRAM
SHEET 03
EXTRACTION WELLS
PE-1, TW-2D, TW-2S AND TW-3D

DWG. NO. TP-PR-10-10-03 REV. 8

FILENAME: tpr101003.dwg

PLOT DATE: 19-OCT-2005

PLOT TIME:



Appendix A
First Quarter 2016 Laboratory Analytical Reports

January 19, 2016

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

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

Workorder No.: N018230

RE: PG&E Topock, 658274.01.IM.OP.00

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on January 05, 2016 by ASSET Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,



Glen Gesmundo
QA Manager

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



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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N018230

CASE NARRATIVE**SAMPLE RECEIVING/GENERAL COMMENTS**

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

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

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

Samples were analyzed within method holding time.

Subcontracted Analyses:

Ammonia was subcontracted to Truesdail-Tustin, CA.

Analytical Comments for EPA 200.8:

Dilution was necessary on Lead for sample N018230-002 due to associated internal standard not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and internal standard met method criteria. Affected analyte for this failed internal standard was reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N018230-002D-MS and N018230-002D-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.



ASSET Laboratories

Date: 19-Jan-16

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N018230
Contract No: IM3PLANT-AR

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N018230-001A	SC-100B-WDR-535	Water	1/5/2016 9:55:00 AM	1/5/2016	1/19/2016
N018230-001B	SC-100B-WDR-535	Water	1/5/2016 9:55:00 AM	1/5/2016	1/19/2016
N018230-001C	SC-100B-WDR-535	Water	1/5/2016 9:55:00 AM	1/5/2016	1/19/2016
N018230-001D	SC-100B-WDR-535	Water	1/5/2016 9:55:00 AM	1/5/2016	1/19/2016
N018230-001E	SC-100B-WDR-535	Water	1/5/2016 9:55:00 AM	1/5/2016	1/19/2016
N018230-002A	SC-700B-WDR-535	Water	1/5/2016 9:55:00 AM	1/5/2016	1/19/2016
N018230-002B	SC-700B-WDR-535	Water	1/5/2016 9:55:00 AM	1/5/2016	1/19/2016
N018230-002C	SC-700B-WDR-535	Water	1/5/2016 9:55:00 AM	1/5/2016	1/19/2016
N018230-002D	SC-700B-WDR-535	Water	1/5/2016 9:55:00 AM	1/5/2016	1/19/2016
N018230-002E	SC-700B-WDR-535	Water	1/5/2016 9:55:00 AM	1/5/2016	1/19/2016



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ASSET Laboratories**ANALYTICAL RESULTS**

Print Date: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-001

Client Sample ID: SC-100B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE**EPA 120.1**

RunID: WETCHEM_160106C	QC Batch: R105083			PrepDate		Analyst: LR
Specific Conductance	7400	0.10	0.10	umhos/cm	1	1/6/2016 10:10 AM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Jan-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-535
Lab Order:	N018230	Collection Date:	1/5/2016 9:55:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018230-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE
EPA 120.1

RunID: WETCHEM_160106C	QC Batch: R105083	PrepDate	Analyst: LR
Specific Conductance	7500	0.10	0.10
		umhos/cm	1
			1/6/2016 10:10 AM

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


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ASSET Laboratories

Date: 19-Jan-16

CLIENT: CH2M HILL
Work Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
ANALYTICAL QC SUMMARY REPORT
TestCode: 120.1_WPGE

Sample ID	N018230-001BDUP	SampType: DUP	TestCode: 120.1_WPGE	Units: umhos/cm	Prep Date:	RunNo: 105083					
Client ID: ZZZZZZ	Batch ID: R105083	TestNo: EPA 120.1	Analysis Date: 1/6/2016				SeqNo: 2191436				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7360.000	0.10						7380	0.271		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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-001

Client Sample ID: SC-100B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

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

TOTAL FILTERABLE RESIDUE
SM2540C

RunID: WETCHEM_160106H	QC Batch: 55685				PrepDate	1/6/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4200	50	50		mg/L	1	1/6/2016 03:13 PM

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



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ASSET Laboratories**ANALYTICAL RESULTS**

Print Date: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-002

Client Sample ID: SC-700B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

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

TOTAL FILTERABLE RESIDUE**SM2540C**

RunID: WETCHEM_160106H	QC Batch: 55685			PrepDate	1/6/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4100	50	50	mg/L	1	1/6/2016 03:13 PM

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



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ASSET Laboratories

Date: 19-Jan-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N018230

Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 160.1_2540C_W

Sample ID	MB-55685	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	1/6/2016	RunNo:	105088
Client ID:	PBW	Batch ID:	55685	TestNo:	SM2540C			Analysis Date:	1/6/2016	SeqNo:	2191462
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 10

Sample ID	LCS-55685	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	1/6/2016	RunNo:	105088
Client ID:	LCSW	Batch ID:	55685	TestNo:	SM2540C			Analysis Date:	1/6/2016	SeqNo:	2191463
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 962.000 10 1000 0 96.2 80 120

Sample ID	N018231-002A-DUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	1/6/2016	RunNo:	105088
Client ID:	ZZZZZZ	Batch ID:	55685	TestNo:	SM2540C			Analysis Date:	1/6/2016	SeqNo:	2191472
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 4575.000 50 4690 2.48 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
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-001

Client Sample ID: SC-100B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

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

TOTAL METALS BY ICP
EPA 200.7

RunID: ICP2_160117A	QC Batch: 55796	PrepDate	1/14/2016	Analyst: CEI
Aluminum	ND 12	50	µg/L	1 1/17/2016 06:31 PM
Boron	1100 11	100	µg/L	1 1/17/2016 06:31 PM
Iron	ND 17	20	µg/L	1 1/17/2016 06:31 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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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-002

Client Sample ID: SC-700B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP
EPA 200.7

RunID: ICP2_160117A	QC Batch: 55796			PrepDate	1/14/2016	Analyst: CEI
Aluminum	ND	12	50	µg/L	1	1/17/2016 08:31 PM
Boron	1000	11	100	µg/L	1	1/17/2016 08:31 PM
Iron	ND	17	20	µg/L	1	1/17/2016 08:31 PM

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



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Date: 19-Jan-16

CLIENT: CH2M HILL

Work Order: N018230

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WPGPPB

Sample ID	MB-55796	SampType:	MBLK	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	1/14/2016	RunNo:	105278
Client ID:	PBW	Batch ID:	55796	TestNo:	EPA 200.7			Analysis Date:	1/17/2016	SeqNo:	2201931
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Aluminum		ND		50							
Boron		57.951		100							
Iron		ND		20							

Sample ID	LCS1-55796	SampType:	LCS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	1/14/2016	RunNo:	105278
Client ID:	LCSW	Batch ID:	55796	TestNo:	EPA 200.7			Analysis Date:	1/17/2016	SeqNo:	2201934
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Aluminum		9859.621		50	10000	0	98.6	85	115		
Boron		4796.937		100	5000	0	95.9	85	115		
Iron		107.395		20	100.0	0	107	85	115		

Sample ID	N018380-002B-MS	SampType:	MS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	1/14/2016	RunNo:	105278
Client ID:	ZZZZZZ	Batch ID:	55796	TestNo:	EPA 200.7			Analysis Date:	1/17/2016	SeqNo:	2201940
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Aluminum		9747.625		50	10000	0	97.5	75	125		
Boron		5392.707		100	5000	367.3	101	75	125		
Iron		167.206		20	100.0	78.65	88.6	75	125		

Sample ID	N018380-002B-MSD	SampType:	MSD	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	1/14/2016	RunNo:	105278
Client ID:	ZZZZZZ	Batch ID:	55796	TestNo:	EPA 200.7			Analysis Date:	1/17/2016	SeqNo:	2201941
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Aluminum		8984.595		50	10000	0	89.8	75	125	9748	8.15 20
Boron		4986.256		100	5000	367.3	92.4	75	125	5393	7.83 20
Iron		163.880		20	100.0	78.65	85.2	75	125	167.2	2.01 20

Qualifiers:

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-001

Client Sample ID: SC-100B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_160108C	QC Batch: 55705	PrepDate	1/7/2016	Analyst: CEI		
Antimony	ND	0.026	0.50	µg/L	1	1/8/2016 01:18 PM
Arsenic	3.0	0.016	0.10	µg/L	1	1/8/2016 01:18 PM
Barium	27	0.072	1.0	µg/L	1	1/8/2016 01:18 PM
Copper	ND	0.26	1.0	µg/L	1	1/8/2016 01:18 PM
Lead	ND	0.053	1.0	µg/L	1	1/8/2016 01:18 PM
Manganese	12	0.023	0.50	µg/L	1	1/8/2016 01:18 PM
Molybdenum	22	0.029	0.50	µg/L	1	1/8/2016 01:18 PM
Nickel	ND	0.038	1.0	µg/L	1	1/8/2016 01:18 PM
Zinc	ND	0.039	10	µg/L	1	1/8/2016 01:18 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-002

Client Sample ID: SC-700B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_160108C	QC Batch: 55705	PrepDate	1/7/2016	Analyst: CEI		
Antimony	ND	0.026	0.50	µg/L	1	1/8/2016 01:23 PM
Arsenic	ND	0.016	0.10	µg/L	1	1/8/2016 03:55 PM
Barium	14	0.072	1.0	µg/L	1	1/8/2016 01:23 PM
Copper	ND	0.26	1.0	µg/L	1	1/8/2016 01:23 PM
Lead	ND	0.27	5.0	µg/L	5	1/8/2016 01:29 PM
Manganese	1.9	0.023	0.50	µg/L	1	1/8/2016 01:23 PM
Molybdenum	25	0.029	0.50	µg/L	1	1/8/2016 01:23 PM
Nickel	1.3	0.038	1.0	µg/L	1	1/8/2016 01:23 PM
Zinc	ND	0.039	10	µg/L	1	1/8/2016 01:23 PM

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



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Date: 19-Jan-16

CLIENT: CH2M HILL

Work Order: N018230

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	LCS-55705	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	1/7/2016	RunNo:	105132
Client ID:	LCSW	Batch ID:	55705	TestNo:	EPA 200.8			Analysis Date:	1/8/2016	SeqNo:	2193922
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	9.387	0.50	10.00	0	93.9	85	115				
Arsenic	9.420	0.10	10.00	0	94.2	85	115				
Barium	95.580	1.0	100.0	0	95.6	85	115				
Copper	9.439	1.0	10.00	0	94.4	85	115				
Lead	9.158	1.0	10.00	0	91.6	85	115				
Manganese	93.298	0.50	100.0	0	93.3	85	115				
Molybdenum	9.325	0.50	10.00	0	93.2	85	115				
Nickel	9.799	1.0	10.00	0	98.0	85	115				
Zinc	97.110	10	100.0	0	97.1	85	115				

Sample ID	MB-55705	SampType:	MBLK	TestCode:	200.8_W	Units:	µg/L	Prep Date:	1/7/2016	RunNo:	105132
Client ID:	PBW	Batch ID:	55705	TestNo:	EPA 200.8			Analysis Date:	1/8/2016	SeqNo:	2193933
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									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	ND	1.0									
Zinc	ND	10									

Sample ID	N018230-002D-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	1/7/2016	RunNo:	105132
Client ID:	ZZZZZZ	Batch ID:	55705	TestNo:	EPA 200.8			Analysis Date:	1/8/2016	SeqNo:	2193935
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

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



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CLIENT: CH2M HILL
Work Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	N018230-002D-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 1/7/2016	RunNo: 105132						
Client ID:	ZZZZZZ	Batch ID: 55705	TestNo: EPA 200.8		Analysis Date: 1/8/2016	SeqNo: 2193935						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	10.192		0.50	10.00	0.06267	101	75	125				
Barium	119.785		1.0	100.0	13.64	106	75	125				
Copper	5.610		1.0	10.00	0	56.1	75	125				
Manganese	95.722		0.50	100.0	1.895	93.8	75	125				S
Molybdenum	36.585		0.50	10.00	24.51	121	75	125				
Nickel	11.397		1.0	10.00	1.317	101	75	125				
Zinc	82.318		10	100.0	0	82.3	75	125				

Sample ID	N018230-002D-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 1/7/2016	RunNo: 105132						
Client ID:	ZZZZZZ	Batch ID: 55705	TestNo: EPA 200.8		Analysis Date: 1/8/2016	SeqNo: 2193936						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	10.202		0.50	10.00	0.06267	101	75	125	10.19	0.0982	20	
Barium	120.460		1.0	100.0	13.64	107	75	125	119.8	0.562	20	
Copper	5.590		1.0	10.00	0	55.9	75	125	5.610	0.347	20	S
Manganese	95.238		0.50	100.0	1.895	93.3	75	125	95.72	0.507	20	
Molybdenum	37.041		0.50	10.00	24.51	125	75	125	36.58	1.24	20	S
Nickel	11.193		1.0	10.00	1.317	98.8	75	125	11.40	1.80	20	
Zinc	81.758		10	100.0	0	81.8	75	125	82.32	0.683	20	

Sample ID	N018230-002D-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 1/7/2016	RunNo: 105132					
Client ID: ZZZZZZ		Batch ID: 55705	TestNo: EPA 200.8		Analysis Date: 1/8/2016	SeqNo: 2193940					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	11.043		5.0	10.00	0	110	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
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



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CLIENT: CH2M HILL

Work Order: N018230

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	N018230-002D-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 1/7/2016	RunNo: 105132						
Client ID:	ZZZZZZ	Batch ID: 55705	TestNo: EPA 200.8		Analysis Date: 1/8/2016	SeqNo: 2193941						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018230-002D-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 1/7/2016	RunNo: 105132						
Client ID:	ZZZZZZ	Batch ID: 55705	TestNo: EPA 200.8		Analysis Date: 1/8/2016	SeqNo: 2203236						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018230-002D-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 1/7/2016	RunNo: 105132						
Client ID: ZZZZZZ		Batch ID: 55705	TestNo: EPA 200.8		Analysis Date: 1/8/2016	SeqNo: 2203237						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

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Qualifiers:

B

Analyte detected in the associated Method Blank

E

Value above quantitation range

ND

Not Detected at the Reporting Limit

R

RPD outside accepted recovery limits

DO

Surrogate Diluted Out

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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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-001

Client Sample ID: SC-100B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC
EPA 218.6

RunID: IC6_160106A	QC Batch: R105092				PrepDate		Analyst: RB
Hexavalent Chromium	550	0.75	10		µg/L	50	1/6/2016 12:53 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_160108C	QC Batch: 55705				PrepDate	1/7/2016	Analyst: CEI
Chromium	590	0.43	5.0		µg/L	5	1/8/2016 02:42 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-002

Client Sample ID: SC-700B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC
EPA 218.6

RunID: IC6_160106A	QC Batch: R105092				PrepDate		Analyst: RB
Hexavalent Chromium	0.21	0.015	0.20		µg/L	1	1/6/2016 05:30 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_160108C	QC Batch: 55705				PrepDate	1/7/2016	Analyst: CEI
Chromium	ND	0.086	1.0		µg/L	1	1/8/2016 01:23 PM

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



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Date: 19-Jan-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

N018230

Work Order:

Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 200.8_W_CRPGE

Sample ID	LCS-55705	SampType:	LCS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	1/7/2016	RunNo:	105132
Client ID:	LCSW	Batch ID:	55705	TestNo:	EPA 200.8			Analysis Date:	1/8/2016	SeqNo:	2194569
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		9.427		1.0	10.00	0	94.3	85	115		

Sample ID	MB-55705	SampType:	MBLK	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	1/7/2016	RunNo:	105132
Client ID:	PBW	Batch ID:	55705	TestNo:	EPA 200.8			Analysis Date:	1/8/2016	SeqNo:	2194580
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		ND		1.0							

Sample ID	N018230-002D-MS	SampType:	MS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	1/7/2016	RunNo:	105132
Client ID:	ZZZZZZ	Batch ID:	55705	TestNo:	EPA 200.8			Analysis Date:	1/8/2016	SeqNo:	2194582
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		9.957		1.0	10.00	0.5151	94.4	75	125		

Sample ID	N018230-002D-MSD	SampType:	MSD	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	1/7/2016	RunNo:	105132
Client ID:	ZZZZZZ	Batch ID:	55705	TestNo:	EPA 200.8			Analysis Date:	1/8/2016	SeqNo:	2194583
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		9.845		1.0	10.00	0.5151	93.3	75	125	9.957	1.13 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: CH2M HILL
Work Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	LCS-R105092	SampleType: LCS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 105092						
Client ID: LCSW		Batch ID: R105092	TestNo: EPA 218.6		Analysis Date: 1/6/2016	SeqNo: 2191820						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	MB-R105092	SampleType: MBLK	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 105092						
Client ID: PBW		Batch ID: R105092	TestNo: EPA 218.6		Analysis Date: 1/6/2016	SeqNo: 2191821						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018230-001C-DUP	SampleType:	DUP	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:	RunNo:	105092			
Client ID:	ZZZZZZ	Batch ID:	R105092	TestNo:	EPA 218.6			Analysis Date:	SeqNo:	2191823			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018230-001C-MS	SampleType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:	RunNo:	105092			
Client ID:	ZZZZZZ	Batch ID:	R105092	TestNo:	EPA 218.6			Analysis Date:	SeqNo:	2191824			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018230-001C-MSD	SampleType:	MSD	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:	RunNo:	105092			
Client ID:	ZZZZZZ	Batch ID:	R105092	TestNo:	EPA 218.6			Analysis Date:	SeqNo:	2191825			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

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



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL

Work Order: N018230

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	N018231-001C-MS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 105092					
Client ID: ZZZZZZ	Batch ID: R105092	TestNo: EPA 218.6	Analysis Date: 1/6/2016	SeqNo: 2191829							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018230-002C-MS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 105092					
Client ID: ZZZZZZ	Batch ID: R105092	TestNo: EPA 218.6	Analysis Date: 1/6/2016	SeqNo: 2191846							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual



Qualifiers:

B

Analyte detected in the associated Method Blank

E

Value above quantitation range

ND

Not Detected at the Reporting Limit

R

RPD outside accepted recovery limits

DO

Surrogate Diluted Out

Calculations are based on raw values

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H

Holding times for preparation or analysis exceeded

S

Spike/Surrogate outside of limits due to matrix interference

24

ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-001

Client Sample ID: SC-100B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY
SM 2130B

RunID: WETCHEM_160106D	QC Batch: R105084			PrepDate		Analyst: LR
Turbidity	0.36	0.10	0.10	NTU	1	1/6/2016 10:40 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: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-002

Client Sample ID: SC-700B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY
SM 2130B

RunID: WETCHEM_160106D	QC Batch: R105084			PrepDate		Analyst: LR
Turbidity	0.35	0.10	0.10	NTU	1	1/6/2016 10:40 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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ASSET Laboratories

Date: 19-Jan-16

CLIENT: CH2M HILL
Work Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
ANALYTICAL QC SUMMARY REPORT
TestCode: 2130_W

Sample ID	N018230-001BDUP	SampType: DUP	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 105084					
Client ID:	ZZZZZZ	Batch ID: R105084	TestNo: SM 2130B		Analysis Date: 1/6/2016	SeqNo: 2191441					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity		0.370	0.10					0.3600	2.74	30	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- 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: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-001

Client Sample ID: SC-100B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_160106A	QC Batch: R105080				PrepDate		Analyst: QBM
Fluoride	2.7	0.12	1.0		mg/L	10	1/6/2016 03:20 PM

ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_160106A	QC Batch: R105080				PrepDate		Analyst: QBM
Sulfate	490	1.6	25		mg/L	50	1/6/2016 05:10 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-002

Client Sample ID: SC-700B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_160106A	QC Batch: R105080				PrepDate		Analyst: QBM
Fluoride	2.3	0.12	1.0		mg/L	10	1/6/2016 03:51 PM

ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_160106A	QC Batch: R105080				PrepDate		Analyst: QBM
Sulfate	490	1.6	25		mg/L	50	1/6/2016 05:41 PM

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



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Date: 19-Jan-16

CLIENT: CH2M HILL

Work Order: N018230

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R105080_F	SampleType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	105080
Client ID:	PBW	Batch ID:	R105080	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2191281
AnalYTE	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual

Fluoride ND 0.10

Sample ID	LCS-R105080_F	SampleType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	105080
Client ID:	LCSW	Batch ID:	R105080	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2191282
AnalYTE	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual

Fluoride 2.493 0.10 2.500 0 99.7 90 110

Sample ID	N018230-001BDUP	SampleType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	105080
Client ID:	ZZZZZZ	Batch ID:	R105080	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2191286
AnalYTE	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual

Fluoride 2.720 1.0 2.730 0.367 20

Sample ID	N018230-002BMS	SampleType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	105080
Client ID:	ZZZZZZ	Batch ID:	R105080	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2191288
AnalYTE	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual

Fluoride 27.940 1.0 25.00 2.320 102 80 120

Sample ID	N018230-002BMSD	SampleType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	105080
Client ID:	ZZZZZZ	Batch ID:	R105080	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2191291
AnalYTE	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual

Fluoride 28.390 1.0 25.00 2.320 104 80 120 27.94 1.60 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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"Serving Clients with Passion and Professionalism"

CLIENT:

CH2M HILL

Work Order:

N018230

Project:

PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R105080_SO4	SampleType: MBLK	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 105080	
Client ID:	PBW	Batch ID: R105080	TestNo: EPA 300.0		Analysis Date: 1/6/2016	SeqNo: 2191300	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		ND	0.50				

Sample ID	LCS-R105080_SO4	SampleType: LCS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 105080	
Client ID:	LCSW	Batch ID: R105080	TestNo: EPA 300.0		Analysis Date: 1/6/2016	SeqNo: 2191301	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		4.934	0.50	5.000	0	98.7	90 110

Sample ID	N018230-001BDUP	SampleType: DUP	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 105080	
Client ID:	ZZZZZZ	Batch ID: R105080	TestNo: EPA 300.0		Analysis Date: 1/6/2016	SeqNo: 2191307	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		490.400	25			486.5	0.809 20

Sample ID	N018230-002BMS	SampleType: MS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 105080	
Client ID:	ZZZZZZ	Batch ID: R105080	TestNo: EPA 300.0		Analysis Date: 1/6/2016	SeqNo: 2191309	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		751.300	25	250.0	488.7	105	80 120

Sample ID	N018230-002BMDS	SampleType: MSD	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 105080	
Client ID:	ZZZZZZ	Batch ID: R105080	TestNo: EPA 300.0		Analysis Date: 1/6/2016	SeqNo: 2191310	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		744.900	25	250.0	488.7	102	80 120 751.3 0.856 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

H

Holding times for preparation or analysis exceeded

S

Spike/Surrogate outside of limits due to matrix interference

ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-001

Client Sample ID: SC-100B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION
SM4500-NO3F

RunID: WETCHEM_160112E	QC Batch: R105188				PrepDate		Analyst: RB
Nitrate/Nitrite as N	2.9	0.11	0.25		mg/L	5	1/12/2016

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to 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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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Jan-16

CLIENT: CH2M HILL
Lab Order: N018230
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018230-002

Client Sample ID: SC-700B-WDR-535
Collection Date: 1/5/2016 9:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION
SM4500-NO3F

RunID: WETCHEM_160112E	QC Batch: R105188				PrepDate		Analyst: RB
Nitrate/Nitrite as N	2.9	0.11	0.25		mg/L	5	1/12/2016

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to 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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ASSET Laboratories

Date: 19-Jan-16

CLIENT: CH2M HILL

Work Order: N018230

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R105188	SampleType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	105188
Client ID:	PBW	Batch ID:	R105188	TestNo:	SM4500-NO3			Analysis Date:	1/12/2016	SeqNo:	2196508
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-R105188	SampleType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	105188
Client ID:	LCSW	Batch ID:	R105188	TestNo:	SM4500-NO3			Analysis Date:	1/12/2016	SeqNo:	2196577
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Nitrate/Nitrite as N 0.469 0.050 0.5000 0 93.8 85 115

Sample ID	N018230-001E-DUP	SampleType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	105188
Client ID:	ZZZZZZ	Batch ID:	R105188	TestNo:	SM4500-NO3			Analysis Date:	1/12/2016	SeqNo:	2196579
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Nitrate/Nitrite as N 2.723 0.25 2.934 7.46 20

Sample ID	N018230-001E-MS	SampleType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	105188
Client ID:	ZZZZZZ	Batch ID:	R105188	TestNo:	SM4500-NO3			Analysis Date:	1/12/2016	SeqNo:	2196581
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Nitrate/Nitrite as N 5.580 0.25 2.500 2.934 106 75 125

Sample ID	N018230-001E-MSD	SampleType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	105188
Client ID:	ZZZZZZ	Batch ID:	R105188	TestNo:	SM4500-NO3			Analysis Date:	1/12/2016	SeqNo:	2196582
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Nitrate/Nitrite as N 5.345 0.25 2.500 2.934 96.5 75 125 4.30 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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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: 1/5/2016 Workorder: N018230
 Rep sample Temp (Deg C): 2.5 IR Gun ID: 1
 Temp Blank: ☒ Yes ☐ No
 Carrier name: ASSET
 Last 4 digits of Tracking No.: NA Packing Material Used: None
 Cooling process: ☒ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

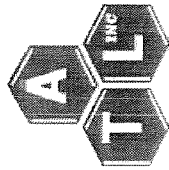
Sample Receipt Checklist

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

Comments: Samples for NO3/NO2, Metals and Ammonia are lab preserved. Samples for Cr+6 are lab filtered and preserved.

Checklist Completed By: MBC *MBC* 1/6/2016

Reviewed By: *gog* 01/11/16



ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

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

06-Jan-16

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests	
				SM4500-NH3DC	
N018230-001A / SC-100B-WDR-535	Water	1/5/2016 9:55:00 AM	32OZP	1	
N018230-002A / SC-700B-WDR-535	Water	1/5/2016 9:55:00 AM	32OZP	1	

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N18230A 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 NH3C

Date/Time	
Relinquished by: <i>Janet Rodriguez</i>	Received by: <i>GSO TRK # 530498152</i>
Relinquished by:	Received by:

List of Analysts

ASSET Laboratories Work Order: **N018230**

NAME	TEST METHOD
Quennie Manimtim	EPA 300
Claire Ignacio	EPA 200.7, EPA 200.8
Ryan Balilu	EPA 218.6, SM 4500-NO3F
Lilia Ramit	EPA 120.1, SM 2540C, SM 2130B



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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.: 16A0167

Printed: 01/15/2016

CASE NARRATIVE

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Ammonia result. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on January 7, 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. 201.

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
N018230-001A/SC-100B-WDR-535	16A0167-01	Water	Grab	01/05/2016 09:55	01/07/2016 09:35
N018230-002A/SC-700B-WDR-535	16A0167-02	Water	Grab	01/05/2016 09:55	01/07/2016 09:35

DEFINITIONS

Symbol	Definition
DF	Dilution Factor
MDL	Method Detection Limit
ND	Not Detected
RL	Reporting Limit

Respectfully yours,

Lyn Phaerakkakit
Project Manager



Client: Advanced Technology Laboratories-N

Project Name: ATL-NV

Printed: 01/15/2016

N018230-001A/SC-100B-WDR-535

16A0167-01 (Water)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
---------	--------	----	-------	----	-------	----------	---------	--------	-------

Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	ND	0.0500	mg/L	1	1601218	01/13/2016 17:07	AL	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----	-----------------	--

N018230-002A/SC-700B-WDR-535

16A0167-02 (Water)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
---------	--------	----	-------	----	-------	----------	---------	--------	-------

Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	ND	0.0500	mg/L	1	1601218	01/13/2016 17:24	AL	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----	-----------------	--



Client: Advanced Technology Laboratories - NV
3151 W Post Road
Las Vegas, NV 89118

Attention: Marlon Cartin

Sample: Two (2) Water Samples

Project Name: PG&E Topock Project

Project No.: N/A

Laboratory No.: 16A0167

Date: January 15, 2016

Collected: January 5, 2016

Received: January 7, 2016

ANALYST LIST

METHOD	PARAMETER	ANALYST
SM 4500-NH3 D	Ammonia	Alex Luna

ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: N018230-001A/SC-100B-WDR-535
Lab Sample ID: 16A0167-01
Project: ATL-NV

Date Sampled: 01/05/16 09:55 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	01/13/16 17:07	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: N018230-002A/SC-700B-WDR-535
Lab Sample ID: 16A0167-02
Project: ATL-NV

Date Sampled: 01/05/16 09:55 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	01/13/16 17:24	SM 4500-NH3 D M

METHOD BLANK DATA SHEET

SM 4500-NH3 D M

Client: Advanced Technology Laboratories-NV

Project: ATL-NV

Laboratory ID: 1601218-BLK1

Prepared: 01/13/16 14:00

Preparation: SM 4500-NH3 B

Matrix: Water

Analyzed: 01/13/16 16:39

Instrument: TL01

File ID: 6A12003-017

Batch: 1601218

Sequence: 6A12003

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	RL	Q
7664-41-7	Ammonia	ND	0.0318	0.0500	

LCS / LCS DUPLICATE RECOVERY

SM 4500-NH3 D M

Client: Advanced Technology Laboratories-NV
Project: ATL-NV
Work Order: 16A0167

Matrix: Water
Prep Batch: 1601218
Prep Method: SM 4500-NH3 B
Lab Sample ID: 1601218-BS1

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia	0.400	0.382	95	90 - 110

DUPLICATES

Duplicate

Client: Advanced Technology Laboratories-NV
 Project: ATL-NV

Matrix: Water Laboratory ID: 1601218-DUP1
 Prep Batch: 1601218 Initial/Final: 50 mL / 50 mL
 Prep Method: SM 4500-NH3 B Analysis: SM 4500-NH3 D M

ANALYTE	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	CONTROL LIMIT
Ammonia	0.592	0.594	0.4		20



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CHAIN-OF-CUSTODY RECORD

Page 1 of 1

16A0167



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

06-Jan-16

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests
N018230-001A / SC-100B-WDR-535	Water	1/5/2016 9:55:00 AM	32OZP	SM4500-NH3pC
N018230-002A / SC-700B-WDR-535	Water	1/5/2016 9:55:00 AM	32OZP	1



General Comments:

Please email sample receipt acknowledgement to the PM.

Please use PO#: N18230A 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 NH3C

Relinquished by:	Date/Time	Received by:	Date/Time
Carla R. Riquelme	1/6/16 17:00	Gural	1/7/16 9:35 AM
Relinquished by:		Received by:	

GSO TRK # 530498152

ALERT !!
Level IV QC

Log-in check list
For level III data package

Client: ATLLab Number: 16A 0167Received Date: 01/07/16**Sample receiving review**

	Yes	No	N/A	Comment
Was special login form received by login personnel?	✓			
Was COC received and signed by client and login personnel?	✓			
Were all sample temperature measured and recorded on COC?	✓			
Did you measure and record the pH on all metals samples on COC?			✓	
Has sample integrity and analysis discrepancy form been filled out completely?	✓			
Were all intercompany yellow forms generated and stamped with "alert level III QC" note?	✓			
Have check-in and check out lists been filled out and attached to appropriate form?	✓			
Were sample containers labeled with TLI numbers, date, and time sampled?	✓			
Did you notify analyst or group leader about short holding time?	✓			
Was a copy of COC attached to all yellow intracompany form?	✓			
For special clients, have all their samples been logged into the internal COC book?	✓			
Were samples locked in fridge or special storage area?	✓			
Was temperature recorded in the log book?	✓			
Sample receiving Signature: <u>Pirzali</u>				

ALERT !!
Level IV QC

WORK ORDER

Printed: 1/7/16 9:50:01AM

16A0167

Truesdail Laboratories, Inc

Client: Advanced Technology Laboratories-NV
Project: ATL-NV

Project Manager: Lyn Phaerakkakit
Project Number: [none]

Report To:

Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone: (702) 307-2659
Fax: (702) 307-2691

Invoice To:

Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone : (702) 307-2659
Fax: (702) 307-2691

Date Due: 01/19/2016 16:30 (7 day TAT)

Received By: Nirali Patel

Logged In By: Nirali Patel

Date Received: 01/07/2016 09:35

Date Logged In: 01/07/2016 09:47

Samples Received at: 3.6°C
Chain of Custody rece Yes Samples intact? Yes
Letter (if sent) matche No Custody seals (if any) No
Requested analyses ac Yes Analyses within hold t Yes
Samples received in a Yes

Analysis	Due	TAT	Expires	Comments
----------	-----	-----	---------	----------

16A0167-01 N018230-001A/SC-100B-WDR-535 [Water] Sampled 01/05/2016
09:55 (GMT-08:00) Pacific Time (US &

Ammonia E	01/19/2016 12:00	7	02/02/2016 09:55	
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16A0167-02 N018230-002A/SC-700B-WDR-535 [Water] Sampled 01/05/2016
09:55 (GMT-08:00) Pacific Time (US &

Ammonia E	01/19/2016 12:00	7	02/02/2016 09:55	
-----------	------------------	---	------------------	--

Reviewed By

Date

Page 1 of 1

Page 22 of 28

January 18, 2016

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

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

Workorder No.: N018229

RE: PG&E Topock, 658274.01.IM.OP.00

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on January 05, 2016 by ASSET Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,



Glen Gesmundo
QA Manager

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



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CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N018229

CASE NARRATIVE**SAMPLE RECEIVING/GENERAL COMMENTS**

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

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 6010B:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N018281-001A-MS and N018281-001A-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.



ASSET Laboratories

Date: 18-Jan-16

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N018229
Contract No: IM3PLANT-AR

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N018229-001A	Phase Separator-Sludge-535	Soil	1/5/2016 2:40:00 PM	1/5/2016	1/18/2016



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Jan-16

CLIENT:	CH2M HILL	Client Sample ID:	Phase Separator-Sludge-535
Lab Order:	N018229	Collection Date:	1/5/2016 2:40:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	SOIL
Lab ID:	N018229-001		

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

ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_160111A	QC Batch: R105198	PrepDate	Analyst: QBM
Fluoride	43 0.80	3.3	mg/Kg-dry 1 1/11/2016 12:54 PM

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


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ASSET Laboratories

Date: 18-Jan-16

CLIENT: CH2M HILL

Work Order: N018229

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_S

Sample ID	MB-R105198	SampleType:	MBLK	TestCode:	300_S	Units:	mg/Kg	Prep Date:	RunNo:	105198
Client ID:	PBS	Batch ID:	R105198	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2197325
AnalYTE	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual
Fluoride	ND	1.0								
Sample ID	LCS-R105198	SampleType:	LCS	TestCode:	300_S	Units:	mg/Kg	Prep Date:	RunNo:	105198
Client ID:	LCSS	Batch ID:	R105198	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2197326
AnalYTE	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual
Fluoride	23.430	1.0	25.00	0	93.7	90	110			
Sample ID	N018229-001ADUP	SampleType:	DUP	TestCode:	300_S	Units:	mg/Kg-dry	Prep Date:	RunNo:	105198
Client ID:	ZZZZZZ	Batch ID:	R105198	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2197328
AnalYTE	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual
Fluoride	42.189	3.3						42.56	0.866	20
Sample ID	N018229-001AMS	SampleType:	MS	TestCode:	300_S	Units:	mg/Kg-dry	Prep Date:	RunNo:	105198
Client ID:	ZZZZZZ	Batch ID:	R105198	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2197329
AnalYTE	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual
Fluoride	117.587	3.3	83.44	42.56	89.9	80	120			
Sample ID	N018229-001AMSD	SampleType:	MSD	TestCode:	300_S	Units:	mg/Kg-dry	Prep Date:	RunNo:	105198
Client ID:	ZZZZZZ	Batch ID:	R105198	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2197330
AnalYTE	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual
Fluoride	116.553	3.3	83.44	42.56	88.7	80	120	117.6	0.884	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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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 18-Jan-16

CLIENT: CH2M HILL
Lab Order: N018229
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018229-001

Client Sample ID: Phase Separator-Sludge-535
Collection Date: 1/5/2016 2:40:00 PM
Matrix: SOIL

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

TOTAL METALS BY ICP
EPA 3050B
EPA 6010B

RunID: ICP2_160110A	QC Batch: 55697	PrepDate	1/7/2016	Analyst: HG
Antimony	11 0.23	6.6	mg/Kg-dry	1 1/10/2016 05:07 PM
Arsenic	30 0.17	3.3	mg/Kg-dry	1 1/10/2016 05:07 PM
Barium	76 0.026	3.3	mg/Kg-dry	1 1/10/2016 05:07 PM
Beryllium	ND 0.054	3.3	mg/Kg-dry	1 1/10/2016 05:07 PM
Cadmium	3.9 0.17	3.3	mg/Kg-dry	1 1/10/2016 05:07 PM
Chromium	4300 0.22	3.3	mg/Kg-dry	1 1/10/2016 05:07 PM
Cobalt	6.8 0.084	3.3	mg/Kg-dry	1 1/10/2016 05:07 PM
Copper	270 0.13	6.6	mg/Kg-dry	1 1/10/2016 05:07 PM
Lead	ND 0.12	3.3	mg/Kg-dry	1 1/10/2016 05:07 PM
Manganese	820 0.19	3.3	mg/Kg-dry	1 1/10/2016 05:07 PM
Molybdenum	6.8 0.060	3.3	mg/Kg-dry	1 1/10/2016 05:07 PM
Nickel	54 0.043	3.3	mg/Kg-dry	1 1/10/2016 05:07 PM
Selenium	ND 0.23	3.3	mg/Kg-dry	1 1/10/2016 05:07 PM
Silver	ND 0.050	3.3	mg/Kg-dry	1 1/10/2016 05:07 PM
Thallium	ND 0.16	6.6	mg/Kg-dry	1 1/10/2016 05:07 PM
Vanadium	59 0.25	3.3	mg/Kg-dry	1 1/10/2016 05:07 PM
Zinc	37 0.27	3.3	mg/Kg-dry	1 1/10/2016 05:07 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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ASSET Laboratories

Date: 18-Jan-16

CLIENT: CH2M HILL

Work Order: N018229

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPGE

Sample ID	MB-55697	SampType:	MBLK	TestCode:	6010_SPGE	Units:	mg/Kg	Prep Date:	1/7/2016	RunNo:	105150
Client ID:	PBS	Batch ID:	55697	TestNo:	EPA 6010B	EPA	3050B	Analysis Date:	1/10/2016	SeqNo:	2195358
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	0.094	2.0									
Arsenic	0.059	1.0									
Barium	0.027	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	0.059	2.0									
Lead	ND	1.0									
Manganese	0.253	1.0									
Molybdenum	0.076	1.0									
Nickel	0.034	1.0									
Selenium	ND	1.0									
Silver	0.021	1.0									
Thallium	ND	2.0									
Vanadium	ND	1.0									
Zinc	ND	1.0									

Sample ID	LCS-55697	SampType:	LCS	TestCode:	6010_SPGE	Units:	mg/Kg	Prep Date:	1/7/2016	RunNo:	105150
Client ID:	LCSS	Batch ID:	55697	TestNo:	EPA 6010B	EPA	3050B	Analysis Date:	1/10/2016	SeqNo:	2195359
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	25.051	2.0	25.00	0	100	85	115				
Arsenic	25.020	1.0	25.00	0	100	85	115				
Barium	25.635	1.0	25.00	0	103	85	115				
Beryllium	25.352	1.0	25.00	0	101	85	115				
Cadmium	25.467	1.0	25.00	0	102	85	115				
Chromium	25.585	1.0	25.00	0	102	85	115				

Qualifiers:

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



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CLIENT: CH2M HILL

Work Order: N018229

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPGE

Sample ID	LCS-55697	SampType:	LCS	TestCode:	6010_SPGE	Units:	mg/Kg	Prep Date:	1/7/2016	RunNo:	105150
Client ID:	LCSS	Batch ID:	55697	TestNo:	EPA 6010B	EPA	3050B	Analysis Date:	1/10/2016	SeqNo:	2195359
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cobalt	26.165	1.0	25.00	0	105	85	115				
Copper	25.611	2.0	25.00	0	102	85	115				
Lead	25.068	1.0	25.00	0	100	85	115				
Manganese	50.032	1.0	50.00	0	100	85	115				
Molybdenum	24.962	1.0	25.00	0	99.8	85	115				
Nickel	25.374	1.0	25.00	0	101	85	115				
Selenium	25.138	1.0	25.00	0	101	85	115				
Silver	24.677	1.0	25.00	0	98.7	85	115				
Thallium	25.433	2.0	25.00	0	102	85	115				
Vanadium	25.904	1.0	25.00	0	104	85	115				
Zinc	25.931	1.0	25.00	0	104	85	115				

Sample ID	N018281-001A-MS	SampType:	MS	TestCode:	6010_SPGE	Units:	mg/Kg-dry	Prep Date:	1/7/2016	RunNo:	105150
Client ID:	ZZZZZZ	Batch ID:	55697	TestNo:	EPA 6010B	EPA	3050B	Analysis Date:	1/10/2016	SeqNo:	2195364
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	17.945	2.1	26.28	0	68.3	75	125				S
Arsenic	26.671	1.1	26.28	1.182	97.0	75	125				
Barium	145.028	1.1	26.28	102.7	161	75	125				S
Beryllium	24.238	1.1	26.28	0	92.2	75	125				
Cadmium	24.994	1.1	26.28	0.4314	93.5	75	125				
Chromium	57.469	1.1	26.28	27.67	113	75	125				
Cobalt	38.024	1.1	26.28	11.21	102	75	125				
Copper	39.521	2.1	26.28	9.797	113	75	125				
Lead	27.966	1.1	26.28	2.403	97.3	75	125				
Manganese	390.805	1.1	52.56	317.7	139	75	125				S
Molybdenum	25.091	1.1	26.28	0	95.5	75	125				
Nickel	48.055	1.1	26.28	20.71	104	75	125				
Selenium	18.721	1.1	26.28	0	71.2	75	125				S
Silver	27.786	1.1	26.28	0	106	75	125				

Qualifiers:

B

Analyte detected in the associated Method Blank

E

Value above quantitation range

ND

Not Detected at the Reporting Limit

R

RPD outside accepted recovery limits

DO

Surrogate Diluted Out

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: CH2M HILL

Work Order: N018229

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPGE

Sample ID	N018281-001A-MS	SampleType: MS	TestCode: 6010_SPGE	Units: mg/Kg-dry	Prep Date: 1/7/2016	RunNo: 105150					
Client ID: ZZZZZZ	Batch ID: 55697	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 1/10/2016	SeqNo: 2195364						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018281-001A-MSD	SampleType: MSD	TestCode: 6010_SPGE	Units: mg/Kg-dry	Prep Date: 1/7/2016	RunNo: 105150					
Client ID: ZZZZZZ	Batch ID: 55697	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 1/10/2016	SeqNo: 2195365						
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

H

Holding times for preparation or analysis exceeded

S

Spike/Surrogate outside of limits due to matrix interference

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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Jan-16

CLIENT:	CH2M HILL	Client Sample ID:	Phase Separator-Sludge-535
Lab Order:	N018229	Collection Date:	1/5/2016 2:40:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	SOIL
Lab ID:	N018229-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC
EPA 3060A
EPA 7199

RunID: IC1_160111A	QC Batch: 55718	PrepDate	1/8/2016	Analyst: RB
Hexavalent Chromium	120	0.17	3.3	mg/Kg-dry
			5	1/11/2016 04:53 PM

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


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ASSET Laboratories

Date: 18-Jan-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N018229

Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 7199_S_PGE

Sample ID	MB-55718	SampType:	MBLK	TestCode:	7199_S_PGE	Units:	mg/Kg	Prep Date:	1/8/2016	RunNo:	105177
Client ID:	PBS	Batch ID:	55718	TestNo:	EPA 7199	EPA	3060A	Analysis Date:	1/11/2016	SeqNo:	2196194
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-55718	SampType:	LCS	TestCode:	7199_S_PGE	Units:	mg/Kg	Prep Date:	1/8/2016	RunNo:	105177
Client ID:	LCSS	Batch ID:	55718	TestNo:	EPA 7199	EPA	3060A	Analysis Date:	1/11/2016	SeqNo:	2196195
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Hexavalent Chromium 4.792 0.20 4.000 0 120 80 120

Sample ID	N018281-001AREP	SampType:	DUP	TestCode:	7199_S_PGE	Units:	mg/Kg-dry	Prep Date:	1/8/2016	RunNo:	105177
Client ID:	ZZZZZZ	Batch ID:	55718	TestNo:	EPA 7199	EPA	3060A	Analysis Date:	1/11/2016	SeqNo:	2196197
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Hexavalent Chromium 0.089 0.21 4.182 0.08427 102 75 125 0.08427 0 20

Sample ID	N018281-001A-MS	SampType:	MS	TestCode:	7199_S_PGE	Units:	mg/Kg-dry	Prep Date:	1/8/2016	RunNo:	105177
Client ID:	ZZZZZZ	Batch ID:	55718	TestNo:	EPA 7199	EPA	3060A	Analysis Date:	1/11/2016	SeqNo:	2196198
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Hexavalent Chromium 4.346 0.21 4.182 0.08427 102 75 125

Sample ID	N018281-001A-MSD	SampType:	MSD	TestCode:	7199_S_PGE	Units:	mg/Kg-dry	Prep Date:	1/8/2016	RunNo:	105177
Client ID:	ZZZZZZ	Batch ID:	55718	TestNo:	EPA 7199	EPA	3060A	Analysis Date:	1/11/2016	SeqNo:	2196199
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Hexavalent Chromium 4.263 0.21 4.170 0.08427 100 75 125 4.346 1.92 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: CH2M HILL
Work Order: N018229
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_S_PGE

Sample ID	N018281-001A-DUP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177						
Client ID:	ZZZZZZ	Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196200						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		0.192	0.21						0.08427	0	20	

Sample ID	N018281-002AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177						
Client ID:	ZZZZZZ	Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196204						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		0.098	0.20						0.09082	0	20	

Sample ID	N018281-003AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177						
Client ID:	ZZZZZZ	Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196206						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		0.095	0.21						0.09043	0	20	

Sample ID	N018281-004AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177						
Client ID: ZZZZZZ		Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196208						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		0.102	0.21						0.09444	0	20	

Sample ID	N018281-005AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177						
Client ID:	ZZZZZZ	Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196210						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		0.111	0.22						0.1112	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
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



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CLIENT: CH2M HILL
Work Order: N018229
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_S_PGE

Sample ID	N018229-001AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177						
Client ID:	ZZZZZZ	Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196214						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		124.506	3.3						116.3	6.81		20

Sample ID	N018281-006AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177						
Client ID:	ZZZZZZ	Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196216						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		0.091	0.22						0.08740	0	20	

Sample ID	N018281-007AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177						
Client ID:	ZZZZZZ	Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196218						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		0.102	0.22						0.09486	0	20	

Sample ID	N018281-008AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177						
Client ID: ZZZZZZ		Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196220						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		0.103	0.21						0.1062	0	20	

Sample ID	N018281-009AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177						
Client ID: ZZZZZZ		Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196222						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		0.099	0.23						0.1043	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
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



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ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N018229

Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 7199_S_PGE

Sample ID	N018281-010AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177
Client ID:	ZZZZZZ	Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196226
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		0.054	0.20			0.05712 0 20

Sample ID	N018281-011AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177
Client ID:	ZZZZZZ	Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196228
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		0.059	0.21			0.05989 0 20

Sample ID	N018281-012AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177
Client ID:	ZZZZZZ	Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196230
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		0.056	0.20			0.06298 0 20

Sample ID	N018281-013AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177
Client ID:	ZZZZZZ	Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196232
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		0.062	0.20			0.06543 0 20

Sample ID	N018282-001AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105177
Client ID:	ZZZZZZ	Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/11/2016	SeqNo: 2196234
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		0.057	0.21			0.06155 0 20

Qualifiers:

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



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N018229
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_S_PGE

Sample ID	N018281-001A-MS_I	MS	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105178						
Client ID:	ZZZZZZ	Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/12/2016	SeqNo: 2196240						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018282-002AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105178						
Client ID: ZZZZZZ		Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/12/2016	SeqNo: 2196242						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018282-003AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105178						
Client ID: ZZZZZZ		Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/12/2016	SeqNo: 2196244						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018282-004AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105178						
Client ID: ZZZZZZ		Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/12/2016	SeqNo: 2196246						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018282-005AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105178						
Client ID:	ZZZZZZ	Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/12/2016	SeqNo: 2196248						
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
- 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: CH2M HILL

Work Order: N018229

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_S_PGE

Sample ID	N018282-006AREP	SampType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/8/2016	RunNo: 105178							
Client ID: ZZZZZZ		Batch ID: 55718	TestNo: EPA 7199	EPA 3060A	Analysis Date: 1/12/2016	SeqNo: 2196252							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD	Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		0.022	0.21							0.01932	0	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

ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Jan-16

CLIENT:	CH2M HILL	Client Sample ID:	Phase Separator-Sludge-535
Lab Order:	N018229	Collection Date:	1/5/2016 2:40:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	SOIL
Lab ID:	N018229-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL MERCURY BY COLD VAPOR TECHNIQUE
EPA 7471A

RunID: AA1_160106A	QC Batch: 55679	PrepDate	1/6/2016	Analyst: CEI
Mercury	ND	0.010	0.33	mg/Kg-dry 1 1/6/2016 04:07 PM

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


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ASSET Laboratories

Date: 18-Jan-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N018229

Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 7471_S_PGE

Sample ID	MB-55679	SampType:	MBLK	TestCode:	7471_S_PGE	Units:	mg/Kg	Prep Date:	1/6/2016	RunNo:	105072
Client ID:	PBS	Batch ID:	55679	TestNo:	EPA 7471A			Analysis Date:	1/6/2016	SeqNo:	2190886
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury ND 0.10

Sample ID	LCS-55679	SampType:	LCS	TestCode:	7471_S_PGE	Units:	mg/Kg	Prep Date:	1/6/2016	RunNo:	105072
Client ID:	LCSS	Batch ID:	55679	TestNo:	EPA 7471A			Analysis Date:	1/6/2016	SeqNo:	2190887
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 0.419 0.10 0.4167 0 101 75 125

Sample ID	N018229-001A-MS	SampType:	MS	TestCode:	7471_S_PGE	Units:	mg/Kg-dry	Prep Date:	1/6/2016	RunNo:	105072
Client ID:	ZZZZZZ	Batch ID:	55679	TestNo:	EPA 7471A			Analysis Date:	1/6/2016	SeqNo:	2190888
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 1.504 0.33 1.389 0.1001 101 75 125

Sample ID	N018229-001A-MSD	SampType:	MSD	TestCode:	7471_S_PGE	Units:	mg/Kg-dry	Prep Date:	1/6/2016	RunNo:	105072
Client ID:	ZZZZZZ	Batch ID:	55679	TestNo:	EPA 7471A			Analysis Date:	1/6/2016	SeqNo:	2190889
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 1.501 0.33 1.377 0.1001 102 75 125 1.504 0.215 20

Qualifiers:

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



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ANALYTICAL RESULTS
Print Date: 18-Jan-16

CLIENT:	CH2M HILL	Client Sample ID:	Phase Separator-Sludge-535
Lab Order:	N018229	Collection Date:	1/5/2016 2:40:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	SOIL
Lab ID:	N018229-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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PERCENT MOISTURE
D2216

RunID: WETCHEM_160106G	QC Batch: R105087	PrepDate	Analyst: LR
Percent Moisture	70.04	0.1000	1/6/2016 01:35 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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ASSET Laboratories

Date: 18-Jan-16

CLIENT: CH2M HILL
Work Order: N018229
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: PMOIST

Sample ID	MB-R105087	SampType: MBLK	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 105087					
Client ID:	PBS	Batch ID: R105087	TestNo: D2216		Analysis Date: 1/6/2016	SeqNo: 2191459					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	ND		0.1000								

Sample ID	N018229-001ADUP	SampType: DUP	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 105087					
Client ID:	ZZZZZZ	Batch ID: R105087	TestNo: D2216		Analysis Date: 1/6/2016	SeqNo: 2191461					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	70.032		0.1000					70.04	0.00985		30



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B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

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Qualifiers:

B

H

S

E

R

Value above quantitation range

RPD outside accepted recovery limits

Calculations are based on raw values

Holding times for preparation or analysis exceeded

Spike/Surrogate outside of limits due to matrix interference

22

Shipping Details	
Approved by	Method of Shipment: FedEx
Sampled by	On Ice: ☒ Yes / no 2.5°C
Relinquished by	Airbill No: 12#1
Received by	Lab Name:
Relinquished by	Lab Phone:
Received by	

Date/Time: 14:40
 1-5-16
 1-5-16
 1-5-16
 1-5-16
 1-5-16
 REC: [Signature] 1/5/16 10:1906

24

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: 1/5/2016 Workorder: N018229
 Rep sample Temp (Deg C): 2.5 IR Gun ID: 1
 Temp Blank: ☒ Yes ☐ No
 Carrier name: ASSET
 Last 4 digits of Tracking No.: NA Packing Material Used: None
 Cooling process: ☒ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

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

Comments:

Checklist Completed By: MBC *MBC* 1/6/2016

Reviewed By: *ggg* 01/11/16

List of Analysts

ASSET Laboratories Work Order: **N018229**

NAME	TEST METHOD
Quennie Manimtim	EPA 300.0
Hanah Glodoviza	EPA 6010B
Claire Ignacio	EPA 7471A
Ryan Balilu	EPA 7199
Lilia Ramit	ASTM D2216



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February 24, 2016

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303

FAX: (530) 339-3303

CA-ELAP No.: 2676

NV Cert. No.: NV-00922

Workorder No.: N018645

RE: PG&E Topock, 658274.01.IM.OP.00

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 03, 2016 by ASSET Laboratories .
The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in
accordance with the applicable laboratory certifications.

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

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

Sincerely,



Glen Gesmundo

QA Manager

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



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CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N018645

CASE NARRATIVE**SAMPLE RECEIVING/GENERAL COMMENTS**

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

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

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

Samples were analyzed within method holding time.

Subcontracted Analyses:

Ammonia was subcontracted to Truesdail-Tustin, CA.

Analytical Comments for EPA 300.0:

Dilution was necessary due to precipitation of sample N018645-002 upon the addition of eluent.



ASSET Laboratories

Date: 24-Feb-16

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N018645
Contract No: IM3PLANT-AR

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N018645-001A	SC-100B-WDR-536	Water	2/3/2016 7:10:00 AM	2/3/2016	2/24/2016
N018645-001B	SC-100B-WDR-536	Water	2/3/2016 7:10:00 AM	2/3/2016	2/24/2016
N018645-001C	SC-100B-WDR-536	Water	2/3/2016 7:10:00 AM	2/3/2016	2/24/2016
N018645-002A	SC-700B-WDR-536	Water	2/3/2016 7:10:00 AM	2/3/2016	2/24/2016
N018645-002B	SC-700B-WDR-536	Water	2/3/2016 7:10:00 AM	2/3/2016	2/24/2016
N018645-002C	SC-700B-WDR-536	Water	2/3/2016 7:10:00 AM	2/3/2016	2/24/2016
N018645-002D	SC-700B-WDR-536	Water	2/3/2016 7:10:00 AM	2/3/2016	2/24/2016
N018645-002E	SC-700B-WDR-536	Water	2/3/2016 7:10:00 AM	2/3/2016	2/24/2016



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 24-Feb-16

CLIENT: CH2M HILL
Lab Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018645-001

Client Sample ID: SC-100B-WDR-536
Collection Date: 2/3/2016 7:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE
EPA 120.1

RunID: WETCHEM_160203A	QC Batch: R105645			PrepDate		Analyst: LR
Specific Conductance	7300	0.10	0.10	umhos/cm	1	2/3/2016 02:10 PM

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



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ASSET Laboratories**ANALYTICAL RESULTS**

Print Date: 24-Feb-16

CLIENT: CH2M HILL
Lab Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018645-002

Client Sample ID: SC-700B-WDR-536
Collection Date: 2/3/2016 7:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE**EPA 120.1**

RunID: WETCHEM_160203A	QC Batch: R105645			PrepDate		Analyst: LR
Specific Conductance	7500	0.10	0.10	umhos/cm	1	2/3/2016 02:10 PM

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



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CLIENT: CH2M HILL

Work Order: N018645

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N018628-001A	DUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:	RunNo:	105645	
Client ID:	ZZZZZZ		Batch ID:	R105645	TestNo:	EPA 120.1			Analysis Date:	SeqNo:	2217348	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance		4110.000		0.10					4120	0.243		10



Qualifiers:

B

Analyte detected in the associated Method Blank

ND

Not Detected at the Reporting Limit

DO

Surrogate Diluted Out

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H

Holding times for preparation or analysis exceeded

S

Spike/Surrogate outside of limits due to matrix interference

8

ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 24-Feb-16

CLIENT: CH2M HILL
Lab Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018645-001

Client Sample ID: SC-100B-WDR-536
Collection Date: 2/3/2016 7:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE
SM2540C

RunID: WETCHEM_160203E	QC Batch: 56107				PrepDate	2/3/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4400	50	50		mg/L	1	2/3/2016 02:30 PM

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



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ASSET Laboratories**ANALYTICAL RESULTS**

Print Date: 24-Feb-16

CLIENT: CH2M HILL
Lab Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018645-002

Client Sample ID: SC-700B-WDR-536
Collection Date: 2/3/2016 7:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE**SM2540C**

RunID: WETCHEM_160203E	QC Batch: 56107			PrepDate	2/3/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4300	50	50	mg/L	1	2/3/2016 02:30 PM

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



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Date: 24-Feb-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL
Work Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 160.1_2540C_W

Sample ID	MB-56107	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	2/3/2016	RunNo:	105670
Client ID:	PBW	Batch ID:	56107	TestNo:	SM2540C			Analysis Date:	2/3/2016	SeqNo:	2219098
AnalYTE		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera			ND	10							

Sample ID	LCS-56107	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	2/3/2016	RunNo:	105670
Client ID:	LCSW	Batch ID:	56107	TestNo:	SM2540C			Analysis Date:	2/3/2016	SeqNo:	2219099
AnalYTE		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera			984.000	10	1000	0	98.4	80	120		

Sample ID	N018628-002A-DUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	2/3/2016	RunNo:	105670
Client ID:	ZZZZZZ	Batch ID:	56107	TestNo:	SM2540C			Analysis Date:	2/3/2016	SeqNo:	2219102
AnalYTE		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera			4640.000	50						4725	1.82 5



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Qualifiers:

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

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H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference

ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 24-Feb-16

CLIENT: CH2M HILL
Lab Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018645-002

Client Sample ID: SC-700B-WDR-536
Collection Date: 2/3/2016 7:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP
EPA 200.7

RunID: ICP2_160207C	QC Batch: 56131	PrepDate	2/5/2016	Analyst: CEI
Aluminum	ND 12	50	µg/L	1 2/7/2016 03:36 PM
Boron	990 11	100	µg/L	1 2/7/2016 03:36 PM
Iron	ND 17	20	µg/L	1 2/7/2016 03:36 PM

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



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Date: 24-Feb-16

CLIENT: CH2M HILL

Work Order: N018645

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WPGEPBPB

Sample ID	MB-56131	SampType:	MBLK	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	2/5/2016	RunNo:	105722
Client ID:	PBW	Batch ID:	56131	TestNo:	EPA 200.7			Analysis Date:	2/7/2016	SeqNo:	2222689
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Aluminum		ND		50							
Boron		13.077		100							
Iron		ND		20							

Sample ID	LCS1-56131	SampType:	LCS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	2/5/2016	RunNo:	105722
Client ID:	LCSW	Batch ID:	56131	TestNo:	EPA 200.7			Analysis Date:	2/7/2016	SeqNo:	2222690
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Aluminum		10098.019		50	10000	0	101	85	115		
Boron		4921.786		100	5000	0	98.4	85	115		
Iron		105.334		20	100.0	0	105	85	115		

Sample ID	N018644-001B-MS1	SampType:	MS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	2/5/2016	RunNo:	105722
Client ID:	ZZZZZZ	Batch ID:	56131	TestNo:	EPA 200.7			Analysis Date:	2/7/2016	SeqNo:	2222695
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Aluminum		9440.742		50	10000	0	94.4	75	125		
Boron		5295.382		100	5000	574.2	94.4	75	125		
Iron		93.481		20	100.0	0	93.5	75	125		

Sample ID	N018644-001B-MSD	SampType:	MSD	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	2/5/2016	RunNo:	105722
Client ID:	ZZZZZZ	Batch ID:	56131	TestNo:	EPA 200.7			Analysis Date:	2/7/2016	SeqNo:	2222697
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Aluminum		9453.795		50	10000	0	94.5	75	125	9441	0.138	20
Boron		5365.035		100	5000	574.2	95.8	75	125	5295	1.31	20
Iron		94.920		20	100.0	0	94.9	75	125	93.48	1.53	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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ASSET Laboratories**ANALYTICAL RESULTS**

Print Date: 24-Feb-16

CLIENT: CH2M HILL
Lab Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018645-001

Client Sample ID: SC-100B-WDR-536
Collection Date: 2/3/2016 7:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICPMS**EPA 200.8**

RunID: ICP7_160205A	QC Batch: 56104			PrepDate	2/3/2016	Analyst: CEI
Manganese	20	0.023	0.50	µg/L	1	2/5/2016 12:19 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 24-Feb-16

CLIENT: CH2M HILL
Lab Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018645-002

Client Sample ID: SC-700B-WDR-536
Collection Date: 2/3/2016 7:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_160205A	QC Batch: 56104	PrepDate	2/3/2016	Analyst: CEI		
Antimony	ND	0.026	0.50	µg/L	1	2/5/2016 12:24 PM
Arsenic	ND	0.016	0.10	µg/L	1	2/5/2016 12:24 PM
Barium	16	0.072	1.0	µg/L	1	2/5/2016 12:24 PM
Copper	ND	0.26	1.0	µg/L	1	2/5/2016 12:24 PM
Lead	ND	0.27	5.0	µg/L	5	2/5/2016 03:35 PM
Manganese	9.5	0.023	0.50	µg/L	1	2/5/2016 12:24 PM
Molybdenum	24	0.029	0.50	µg/L	1	2/5/2016 12:24 PM
Nickel	2.5	0.038	1.0	µg/L	1	2/5/2016 12:24 PM
Zinc	ND	0.039	10	µg/L	1	2/5/2016 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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ASSET Laboratories

Date: 24-Feb-16

CLIENT: CH2M HILL

Work Order: N018645

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	MB-56104	SampType:	MBLK	TestCode:	200.8_W	Units:	µg/L	Prep Date:	2/3/2016	RunNo:	105690
Client ID:	PBW	Batch ID:	56104	TestNo:	EPA 200.8			Analysis Date:	2/5/2016	SeqNo:	2221138
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	0.027	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.055	0.50									
Nickel	ND	1.0									
Zinc	ND	10									

Sample ID	LCS-56104	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	2/3/2016	RunNo:	105690
Client ID:	LCSW	Batch ID:	56104	TestNo:	EPA 200.8			Analysis Date:	2/5/2016	SeqNo:	2221139
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	9.444	0.50	10.00	0	94.4	85	115				
Arsenic	9.801	0.10	10.00	0	98.0	85	115				
Barium	96.872	1.0	100.0	0	96.9	85	115				
Copper	10.101	1.0	10.00	0	101	85	115				
Lead	9.753	1.0	10.00	0	97.5	85	115				
Manganese	87.946	0.50	100.0	0	87.9	85	115				
Molybdenum	9.480	0.50	10.00	0	94.8	85	115				
Nickel	10.164	1.0	10.00	0	102	85	115				
Zinc	95.888	10	100.0	0	95.9	85	115				

Sample ID	N018642-001H-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	2/3/2016	RunNo:	105690
Client ID:	ZZZZZZ	Batch ID:	56104	TestNo:	EPA 200.8			Analysis Date:	2/5/2016	SeqNo:	2221143
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

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



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CLIENT: CH2M HILL

Work Order: N018645

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	N018642-001H-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 2/3/2016	RunNo: 105690					
Client ID:	ZZZZZZ	Batch ID: 56104	TestNo: EPA 200.8		Analysis Date: 2/5/2016	SeqNo: 2221143					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	9.810	0.50	10.00	0.2469	95.6	75	125				
Arsenic	36.803	0.10	10.00	28.78	80.3	75	125				
Copper	7.857	1.0	10.00	0	78.6	75	125				
Lead	10.061	1.0	10.00	0	101	75	125				
Manganese	89.648	0.50	100.0	2.008	87.6	75	125				
Molybdenum	14.031	0.50	10.00	2.862	112	75	125				
Nickel	9.081	1.0	10.00	0.1181	89.6	75	125				
Zinc	85.268	10	100.0	1.797	83.5	75	125				

Sample ID	N018642-001H-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 2/3/2016	RunNo: 105690					
Client ID: ZZZZZZ		Batch ID: 56104	TestNo: EPA 200.8		Analysis Date: 2/5/2016	SeqNo: 2221144					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	9.704	0.50	10.00	0.2469	94.6	75	125	9.810	1.09	20	
Arsenic	36.906	0.10	10.00	28.78	81.3	75	125	36.80	0.279	20	
Copper	7.866	1.0	10.00	0	78.7	75	125	7.857	0.105	20	
Lead	10.066	1.0	10.00	0	101	75	125	10.06	0.0489	20	
Manganese	89.798	0.50	100.0	2.008	87.8	75	125	89.65	0.168	20	
Molybdenum	13.986	0.50	10.00	2.862	111	75	125	14.03	0.322	20	
Nickel	9.091	1.0	10.00	0.1181	89.7	75	125	9.081	0.109	20	
Zinc	85.211	10	100.0	1.797	83.4	75	125	85.27	0.0667	20	

Sample ID	N018642-001H-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 2/3/2016	RunNo: 105690					
Client ID: ZZZZZZ		Batch ID: 56104	TestNo: EPA 200.8		Analysis Date: 2/5/2016	SeqNo: 2221179					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bartum	448.411	5.0	100.0	360.2	88.2	75	125				

Barium	448.411	5.0	100.0	360.2	88.2	75	125				
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Qualifiers:

- B

Analyte detected in the associated Method Blank

E

Value above quantitation range
- ND

Not Detected at the Reporting Limit

R

RPD outside accepted recovery limits
- DO

Surrogate Diluted Out

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: CH2M HILL

Work Order: N018645

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	N018642-001H-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 2/3/2016	RunNo: 105690						
Client ID: ZZZZZZ	Batch ID: 56104		TestNo: EPA 200.8		Analysis Date: 2/5/2016	SeqNo: 2221180						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD	Ref Val	%RPD	RPDLimit	Qual
Barium	449.188	5.0	100.0	360.2	89.0	75	125	448.4	0.173		20	



Qualifiers:

B

Analyte detected in the associated Method Blank

ND

Not Detected at the Reporting Limit

DO

Surrogate Diluted Out

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E

Value above quantitation range

R

RPD outside accepted recovery limits

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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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 24-Feb-16

CLIENT: CH2M HILL
Lab Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018645-001

Client Sample ID: SC-100B-WDR-536
Collection Date: 2/3/2016 7:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC
EPA 218.6

RunID: IC7_160208A	QC Batch: R105846				PrepDate		Analyst: RB
Hexavalent Chromium	610	0.75	10		µg/L	50	2/8/2016 05:24 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_160205A	QC Batch: 56104				PrepDate	2/3/2016	Analyst: CEI
Chromium	590	0.43	5.0		µg/L	5	2/5/2016 03:30 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 24-Feb-16

CLIENT: CH2M HILL
Lab Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018645-002

Client Sample ID: SC-700B-WDR-536
Collection Date: 2/3/2016 7:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC
EPA 218.6

RunID: IC7_160208A	QC Batch: R105846				PrepDate		Analyst: RB
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	2/8/2016 05:43 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_160205A	QC Batch: 56104				PrepDate	2/3/2016	Analyst: CEI
Chromium	ND	0.086	1.0		µg/L	1	2/5/2016 12:24 PM

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



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Date: 24-Feb-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N018645

Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 200.8_W_CRPGE

Sample ID	MB-56104	SampType:	MBLK	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	2/3/2016	RunNo:	105690
Client ID:	PBW	Batch ID:	56104	TestNo:	EPA 200.8			Analysis Date:	2/5/2016	SeqNo:	2220246
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium ND 1.0

Sample ID	LCS-56104	SampType:	LCS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	2/3/2016	RunNo:	105690
Client ID:	LCSW	Batch ID:	56104	TestNo:	EPA 200.8			Analysis Date:	2/5/2016	SeqNo:	2220247
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium 9.290 1.0 10.00 0 92.9 85 115

Sample ID	N018642-001H-MS	SampType:	MS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	2/3/2016	RunNo:	105690
Client ID:	ZZZZZZ	Batch ID:	56104	TestNo:	EPA 200.8			Analysis Date:	2/5/2016	SeqNo:	2220251
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium 8.887 1.0 10.00 0 88.9 75 125

Sample ID	N018642-001H-MSD	SampType:	MSD	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	2/3/2016	RunNo:	105690
Client ID:	ZZZZZZ	Batch ID:	56104	TestNo:	EPA 200.8			Analysis Date:	2/5/2016	SeqNo:	2220252
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium 8.827 1.0 10.00 0 88.3 75 125 8.887 0.679 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
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



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CLIENT: CH2M HILL
Work Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	MB-R105846	SampleType: MBLK	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 105846
Client ID:	PBW	Batch ID: R105846	TestNo: EPA 218.6		Analysis Date: 2/8/2016	SeqNo: 2230764
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-R105846	SampleType: LCS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 105846
Client ID:	LCSW	Batch ID: R105846	TestNo: EPA 218.6		Analysis Date: 2/8/2016	SeqNo: 2230765
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		4.959	0.20	5.000	0	99.2 90 110

Sample ID	N018634-001ADUP	SampleType: DUP	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 105846
Client ID:	ZZZZZZ	Batch ID: R105846	TestNo: EPA 218.6		Analysis Date: 2/8/2016	SeqNo: 2230767
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		8.958	0.20			8.916 0.460 20

Sample ID	N018634-001AMS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 105846
Client ID:	ZZZZZZ	Batch ID: R105846	TestNo: EPA 218.6		Analysis Date: 2/8/2016	SeqNo: 2230768
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		14.143	0.20	5.000	8.916	105 90 110

Sample ID	N018634-001AMSD	SampleType: MSD	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 105846
Client ID:	ZZZZZZ	Batch ID: R105846	TestNo: EPA 218.6		Analysis Date: 2/8/2016	SeqNo: 2230769
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		14.338	0.20	5.000	8.916	108 90 110 14.14 1.37 20

Qualifiers:

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

CLIENT: CH2M HILL

Work Order: N018645

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	N018644-001CMS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 105846						
Client ID:	ZZZZZZ	Batch ID: R105846	TestNo: EPA 218.6		Analysis Date: 2/8/2016	SeqNo: 2230791						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018645-001B-MS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 105846						
Client ID:	ZZZZZZ	Batch ID: R105846	TestNo: EPA 218.6		Analysis Date: 2/8/2016	SeqNo: 2230793						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018645-002C-MS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 105846						
Client ID: ZZZZZZ		Batch ID: R105846	TestNo: EPA 218.6		Analysis Date: 2/8/2016	SeqNo: 2230795						
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
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 24-Feb-16

CLIENT: CH2M HILL
Lab Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018645-001

Client Sample ID: SC-100B-WDR-536
Collection Date: 2/3/2016 7:10:00 AM
Matrix: WATER

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

TURBIDITY
SM 2130B

RunID: WETCHEM_160203B	QC Batch: R105648			PrepDate		Analyst: LR
Turbidity	0.31	0.10	0.10	NTU	1	2/3/2016 02:00 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: 24-Feb-16

CLIENT: CH2M HILL
 Lab Order: N018645
 Project: PG&E Topock, 658274.01.IM.OP.00
 Lab ID: N018645-002

Client Sample ID: SC-700B-WDR-536
 Collection Date: 2/3/2016 7:10:00 AM
 Matrix: WATER

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

TURBIDITY

SM 2130B

RunID: WETCHEM_160203B	QC Batch: R105648			PrepDate		Analyst: LR
Turbidity	0.38	0.10	0.10	NTU	1	2/3/2016 02:00 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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Date: 24-Feb-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N018645

Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 2130_W

Sample ID	MB-R105648	SampType: MBLK	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 105648					
Client ID:	PBW	Batch ID: R105648	TestNo: SM 2130B		Analysis Date: 2/3/2016	SeqNo: 2217471					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	ND		0.10								

Sample ID	N018642-001E DUP	SampType: DUP	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 105648					
Client ID:	ZZZZZZ	Batch ID: R105648	TestNo: SM 2130B		Analysis Date: 2/3/2016	SeqNo: 2217473					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	0.340		0.10					0.3500	2.90		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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 24-Feb-16

CLIENT: CH2M HILL
Lab Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018645-002

Client Sample ID: SC-700B-WDR-536
Collection Date: 2/3/2016 7:10:00 AM
Matrix: WATER

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

ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_160211A	QC Batch: R105877				PrepDate		Analyst: QBM
Fluoride	2.3	0.12	1.0		mg/L	10	2/11/2016 05:23 PM

ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_160211A	QC Batch: R105877				PrepDate		Analyst: QBM
Sulfate	470	1.6	25		mg/L	50	2/11/2016 06:25 PM

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



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ASSET Laboratories

Date: 24-Feb-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N018645

Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 300_W_FPGE

Sample ID	MB-R105877_F	SampleType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	105877			
Client ID:	PBW	Batch ID:	R105877	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2232047			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride ND 0.10

Sample ID	LCS-R105877_F	SampleType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	105877			
Client ID:	LCSW	Batch ID:	R105877	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2232048			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 2.373 0.10 2.500 0 94.9 90 110

Sample ID	N018645-002BDUP	SampleType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	105877			
Client ID:	ZZZZZZ	Batch ID:	R105877	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2232054			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 2.540 1.0 2.540 2.320 9.05 20

Sample ID	N018645-002BMS	SampleType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	105877			
Client ID:	ZZZZZZ	Batch ID:	R105877	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2232055			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 26.280 1.0 25.00 2.320 95.8 80 120

Sample ID	N018645-002BMSD	SampleType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	105877			
Client ID:	ZZZZZZ	Batch ID:	R105877	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2232056			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 25.760 1.0 25.00 2.320 93.8 80 120 26.28 2.00 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: CH2M HILL
Work Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R105877_SO4	SampleType: MBLK	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 105877
Client ID:	PBW	Batch ID: R105877	TestNo: EPA 300.0		Analysis Date: 2/11/2016	SeqNo: 2232169
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		ND	0.50			

Sample ID	LCS-R105877_SO4	SampleType: LCS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 105877
Client ID:	LCSW	Batch ID: R105877	TestNo: EPA 300.0		Analysis Date: 2/11/2016	SeqNo: 2232170
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		4.756	0.50	5.000	0	95.1 90 110

Sample ID	N018702-001CDUP	SampleType: DUP	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 105877
Client ID:	ZZZZZZ	Batch ID: R105877	TestNo: EPA 300.0		Analysis Date: 2/11/2016	SeqNo: 2232172
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		136.000	10			134.4 1.15 20

Sample ID	N018702-003CMS	SampleType: MS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 105877
Client ID:	ZZZZZZ	Batch ID: R105877	TestNo: EPA 300.0		Analysis Date: 2/11/2016	SeqNo: 2232177
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		219.640	10	100.0	120.8	98.8 80 120

Sample ID	N018702-003CMSD	SampleType: MSD	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 105877
Client ID:	ZZZZZZ	Batch ID: R105877	TestNo: EPA 300.0		Analysis Date: 2/11/2016	SeqNo: 2232178
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		214.520	10	100.0	120.8	93.7 80 120 219.6 2.36 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
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 24-Feb-16

CLIENT: CH2M HILL
Lab Order: N018645
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018645-002

Client Sample ID: SC-700B-WDR-536
Collection Date: 2/3/2016 7:10:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION
SM4500-NO3F

RunID: WETCHEM_160205B	QC Batch: R105756				PrepDate		Analyst: RB
Nitrate/Nitrite as N	3.1	0.11	0.25		mg/L	5	2/5/2016

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected 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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Date: 24-Feb-16

CLIENT: CH2M HILL

Work Order: N018645

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R105756	SampleType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	105756			
Client ID:	PBW	Batch ID:	R105756	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2225613			
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-R105756	SampleType: LCS	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 105756					
Client ID: LCSW	Batch ID: R105756	TestNo: SM4500-NO3	Analysis Date: 2/5/2016	SeqNo: 2225614							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 0.519 0.050 0.5000 0 104 85 115

Sample ID	N018548-002E-DUP	SampleType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	105756			
Client ID:	ZZZZZZ	Batch ID:	R105756	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2225616			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 0.465 0.050 0.4520 2.84 20

Sample ID	N018548-002E-MS	SampleType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	105756			
Client ID:	ZZZZZZ	Batch ID:	R105756	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2225618			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 0.975 0.050 0.5000 0.4520 105 75 125

Sample ID	N018548-002E-MSD	SampleType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	105756			
Client ID:	ZZZZZZ	Batch ID:	R105756	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2225619			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 1.047 0.050 0.5000 0.4520 119 75 125 0.9747 7.15 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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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: 2/3/2016 Workorder: N018645
 Rep sample Temp (Deg C): 1.4 IR Gun ID: 2
 Temp Blank: ☒ Yes ☐ No
 Carrier name: ASSET
 Last 4 digits of Tracking No.: NA Packing Material Used: None
 Cooling process: ☒ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

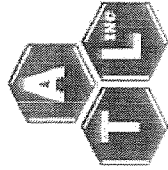
Sample Receipt Checklist

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

Comments: Samples are lab filtered and preserved accordingly.

Checklist Completed By: MBC *MBC* 2/3/2016

Reviewed By: *gog* 02/05/16



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www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

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

03-Feb-16

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests
N018645-002A / SC-700B-WDR-536	Water	2/3/2016 7:10:00 AM	32OZP	SM4500-NH3D 1

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N18645A. 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 by SM4500NH3D. CH2M HILL Sample.

Date/Time	Date/Time
Relinquished by: <i>Yandora Rodriguez</i>	650 # 530800106
Relinquished by: _____	Received by: _____
Relinquished by: _____	Received by: _____

List of Analysts

ASSET Laboratories Work Order: **N018645**

NAME	TEST METHOD
Quennie Manimtim	EPA 300.0
Claire Ignacio	EPA 200.7, EPA 200.8
Ryan Balilu	EPA 218.6, SM 4500-NO3F
Lilia Ramit	EPA 120.1, SM 2540C, SM 2130B



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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.: 16B0099

Printed: 02/12/2016

CASE NARRATIVE

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Ammonia result. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The sample was received and delivered with the chain of custody on February 4, 2016, intact and in chilled condition. The sample will be kept in a locked refrigerator for 30 days; thereafter will be kept in warm storage for additional 2 months before disposal.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 201.

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
N018645-002A/SC-700B-WDR-536	16B0099-01	Water	Grab	02/03/2016 07:10	02/04/2016 08:30

DEFINITIONS

Symbol	Definition
DF	Dilution Factor
MDL	Method Detection Limit
ND	Not Detected
RL	Reporting Limit

Respectfully yours,

Lyn Phaerakkakit
Project Manager



Client: Advanced Technology Laboratories-N

Project Name: ATL-NV

Printed: 02/12/2016

N018645-002A/SC-700B-WDR-536

16B0099-01 (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	1602187	02/09/2016 12:09	AL	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----	-----------------	--



Client: Advanced Technology Laboratories - NV

3151 W Post Road

Las Vegas, NV 89118

Attention: Marlon Cartin

Sample: One (1) Water Sample

Project Name: PG&E Topock Project

Project No.: N/A

Laboratory No.: 16B0099

Date: February 12, 2016

Collected: February 3, 2016

Received: February 4, 2016

ANALYST LIST

METHOD	PARAMETER	ANALYST
SM 4500-NH3 D	Ammonia	Alex Luna

ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: N018645-002A/SC-700B-WDR-536
Lab Sample ID: 16B0099-01
Project: ATL-NV

Date Sampled: 02/03/16 07:10 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	02/09/16 12:09	SM 4500-NH3 D M

METHOD BLANK DATA SHEET

SM 4500-NH3 D M

Client: Advanced Technology Laboratories-NV

Project: ATL-NV

Laboratory ID: 1602187-BLK1

Prepared: 02/09/16 09:37

Preparation: SM 4500-NH3 B

Matrix: Water

Analyzed: 02/09/16 10:59

Instrument: TL01

File ID: 6B09002-023

Batch: 1602187

Sequence: 6B09002

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	RL	Q
7664-41-7	Ammonia	ND	0.0318	0.0500	

LCS / LCS DUPLICATE RECOVERY

SM 4500-NH3 D M

Client: Advanced Technology Laboratories-NV
Project: ATL-NV
Work Order: 16B0099

Matrix: Water
Prep Batch: 1602187
Prep Method: SM 4500-NH3 B
Lab Sample ID: 1602187-BS1

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia	0.400	0.419	105	90 - 110

DUPLICATES

Duplicate

Client: Advanced Technology Laboratories-NV
 Project: ATL-NV

Matrix: Water
 Prep Batch: 1602187
 Prep Method: SM 4500-NH3 B
 Laboratory ID: 1602187-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	0.774	0.743	4		20

* Values outside of QC limits



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www.asset-labs.com

TEL: 7023072659

FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

16B0099

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

03-Feb-16

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests
N018645-002A / SC-700B-WDR-536	Water	2/3/2016 7:10:00 AM	32OZP	SM4500-NH3D 1

ALERT!!
Level IV QC

General Comments:

Please email sample receipt acknowledgement to the PM.

Please use PO#: N18645A. 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. CH2M HILL Sample.

Relinquished by: Yvonne Rodriguez	Date/Time: 2/3/16 17:00	650 #: 530800109	Date/Time: 2/4/16 8:30
Relinquished by:			

Log-in check list For level III data package

ALERT !!
Level IV QC

Client: ATL

Lab Number: 16B0099

Received Date: 02/04/16

Sample receiving review

	Yes	No	N/A	Comment
Was special login form received by login personnel?	✓			
Was COC received and signed by client and login personnel?	✓			
Were all sample temperature measured and recorded on COC?	✓			
Did you measure and record the pH on all metals samples on COC?			✓	
Has sample integrity and analysis discrepancy form been filled out completely?	✓			
Were all intercompany yellow forms generated and stamped with "alert level III QC" note?	✓			
Have check-in and check out lists been filled out and attached to appropriate form?	✓			
Were sample containers labeled with TLI numbers, date, and time sampled?	✓			
Did you notify analyst or group leader about short holding time?	✓			
Was a copy of COC attached to all yellow intracompany form?	✓			
For special clients, have all their samples been logged into the internal COC book?	✓			
Were samples locked in fridge or special storage area?	✓			
Was temperature recorded in the log book?	✓			

Sample receiving Signature:

ATL

WORK ORDER

Printed: 2/4/16 10:27:15AM

16B0099

Truesdail Laboratories, Inc

Client: Advanced Technology Laboratories-NV
Project: ATL-NV

Project Manager: Lyn Phaerakkakit
Project Number: [none]

Report To:

Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone: (702) 307-2659
Fax: (702) 307-2691

Invoice To:

Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone : (702) 307-2659
Fax: (702) 307-2691

Date Due: 02/16/2016 16:30 (7 day TAT)

Received By: Jacqueline Brown

Date Received: 02/04/2016 08:30

Logged In By: Nirali Patel

Date Logged In: 02/04/2016 10:23

Samples Received at: 8.9°C
Chain of Custody rece Yes Samples intact? Yes
Letter (if sent) matche No Custody seals (if any) No
Requested analyses ac Yes Analyses within hold t Yes
Samples received in a Yes

Analysis	Due	TAT	Expires	Comments
16B0099-01 N018645-002A/SC-700B-WDR-536 [Water] Sampled 02/03/2016 07:10 (GMT-08:00) Pacific Time (US &				
Ammonia E	02/16/2016 12:00	7	03/02/2016 07:10	

Michelle Reed
Reviewed By

2/5/16
Date

March 18, 2016

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303
FAX: (530) 339-3303

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

Workorder No.: N018918

RE: PG&E Topock, 658274.01.IM.OP.00

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on March 01, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,



Glen Gesmundo
QA Manager

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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N018918

CASE NARRATIVE**SAMPLE RECEIVING/GENERAL COMMENTS**

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

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

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

Samples were analyzed within method holding time.

Subcontracted Analyses:

Ammonia was subcontracted to Truesdail-Tustin, CA.

Analytical Comments for EPA 200.8:

Dilution was necessary on some analytes for sample N018918-002 due to associated internal standard not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Further dilution was necessary for sample N018918-003 and QC samples N018918-003C-MS, N018918-003C-MSD due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with further 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 for QC samples N018918-003C-MS, N018918-003C-MSD and N018919-002B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N018918-003 due to matrix interference. Sample was analyzed at lower dilution however matrix spike was not recovered indicating possible matrix interference. Sample



CLIENT: CH2M HILL

Project: PG&E Topock, 658274.01.IM.OP.00

Lab Order: N018918

CASE NARRATIVE

was reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.



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N018918
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ASSET Laboratories

Date: 18-Mar-16

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N018918
Contract No: IM3PLANT-AR

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N018918-001A	SC-100B-WDR-537	Water	3/1/2016 11:35:00 AM	3/1/2016	3/18/2016
N018918-001B	SC-100B-WDR-537	Water	3/1/2016 11:35:00 AM	3/1/2016	3/18/2016
N018918-001C	SC-100B-WDR-537	Water	3/1/2016 11:35:00 AM	3/1/2016	3/18/2016
N018918-002A	SC-700B-WDR-537	Water	3/1/2016 11:33:00 AM	3/1/2016	3/18/2016
N018918-002B	SC-700B-WDR-537	Water	3/1/2016 11:33:00 AM	3/1/2016	3/18/2016
N018918-002C	SC-700B-WDR-537	Water	3/1/2016 11:33:00 AM	3/1/2016	3/18/2016
N018918-002D	SC-700B-WDR-537	Water	3/1/2016 11:33:00 AM	3/1/2016	3/18/2016
N018918-002E	SC-700B-WDR-537	Water	3/1/2016 11:33:00 AM	3/1/2016	3/18/2016
N018918-003A	SC-701-WDR-537	Water	3/1/2016 11:42:00 AM	3/1/2016	3/18/2016
N018918-003B	SC-701-WDR-537	Water	3/1/2016 11:42:00 AM	3/1/2016	3/18/2016
N018918-003C	SC-701-WDR-537	Water	3/1/2016 11:42:00 AM	3/1/2016	3/18/2016



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ASSET Laboratories**ANALYTICAL RESULTS**

Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-100B-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:35:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE**EPA 120.1**

RunID: WETCHEM_160302C	QC Batch: R106195	PrepDate	Analyst: LR
Specific Conductance	8100 0.10 0.10	umhos/cm	1 3/2/2016 01:50 PM

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

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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:33:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-002		

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

SPECIFIC CONDUCTANCE
EPA 120.1

RunID: WETCHEM_160302C	QC Batch: R106195	PrepDate	Analyst: LR
Specific Conductance	7400	0.10	0.10
		umhos/cm	1
			3/2/2016 01:50 PM

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


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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-701-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:42:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-003		

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

SPECIFIC CONDUCTANCE
EPA 120.1

RunID: WETCHEM_160302C	QC Batch: R106195	PrepDate	Analyst: LR
Specific Conductance	44000	0.10	0.10
		umhos/cm	1
			3/2/2016 01:50 PM

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


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CLIENT: CH2M HILL

Work Order: N018918

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N018918-003ADUP	SampType: DUP	TestCode: 120.1_WPGE	Units: umhos/cm	Prep Date:	RunNo: 106195					
Client ID:	ZZZZZZ	Batch ID: R106195	TestNo: EPA 120.1		Analysis Date: 3/2/2016	SeqNo: 2249884					
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

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E

Value above quantitation range

R

RPD outside accepted recovery limits

Calculations are based on raw values

H

Holding times for preparation or analysis exceeded

S

Spike/Surrogate outside of limits due to matrix interference

10

ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-100B-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:35:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-001		

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

TOTAL FILTERABLE RESIDUE
SM2540C

RunID: WETCHEM_160302F	QC Batch: 56477	PrepDate	3/2/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4600	50	50	mg/L
			1	3/2/2016 02:29 PM

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


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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:33:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-002		

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

TOTAL FILTERABLE RESIDUE
SM2540C

RunID: WETCHEM_160302F	QC Batch: 56477	PrepDate	3/2/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4200	50	50	mg/L
			1	3/2/2016 02:29 PM

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


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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-701-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:42:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-003		

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

TOTAL FILTERABLE RESIDUE
SM2540C

RunID: WETCHEM_160302F	QC Batch: 56477	PrepDate	3/2/2016	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	31000	500	500	mg/L
			1	3/2/2016 02:29 PM

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


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ASSET Laboratories

Date: 18-Mar-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N018918

Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 160.1_2540C_W

Sample ID	MB-56477	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	3/2/2016	RunNo:	106201
Client ID:	PBW	Batch ID:	56477	TestNo:	SM2540C			Analysis Date:	3/2/2016	SeqNo:	2250043
AnalYTE		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 10

Sample ID	LCS-56477	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	3/2/2016	RunNo:	106201
Client ID:	LCSW	Batch ID:	56477	TestNo:	SM2540C			Analysis Date:	3/2/2016	SeqNo:	2250044
AnalYTE		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 970.000 10 1000 0 97.0 80 120

Sample ID	N018918-003ADUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	3/2/2016	RunNo:	106201
Client ID:	ZZZZZZ	Batch ID:	56477	TestNo:	SM2540C			Analysis Date:	3/2/2016	SeqNo:	2250051
AnalYTE		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 31750.000 500 31150 1.91 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
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:33:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-002		

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

TOTAL METALS BY ICP
EPA 200.7

RunID: ICP2_160303B	QC Batch: 56491	PrepDate	3/3/2016	Analyst: CEI
Aluminum	ND	12	50	µg/L
Boron	1100	11	100	µg/L
Iron	ND	17	20	µg/L

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected 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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ASSET Laboratories

Date: 18-Mar-16

CLIENT: CH2M HILL

Work Order: N018918

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WPGEPBB

Sample ID	MB-56491	SampType:	MBLK	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	3/3/2016	RunNo:	106232
Client ID:	PBW	Batch ID:	56491	TestNo:	EPA 200.7			Analysis Date:	3/3/2016	SeqNo:	2251239
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Aluminum ND 50
Boron ND 100
Iron ND 20

Sample ID	LCS1-56491	SampType:	LCS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	3/3/2016	RunNo:	106232
Client ID:	LCSW	Batch ID:	56491	TestNo:	EPA 200.7			Analysis Date:	3/3/2016	SeqNo:	2251240
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Aluminum 9811.397 50 10000 0 98.1 85 115
Boron 4737.648 100 5000 0 94.8 85 115
Iron 103.481 20 100.0 0 103 85 115

Sample ID	N018919-001B-MS1	SampType:	MS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	3/3/2016	RunNo:	106232
Client ID:	ZZZZZZ	Batch ID:	56491	TestNo:	EPA 200.7			Analysis Date:	3/3/2016	SeqNo:	2251247
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Aluminum 10900.641 50 10000 0 109 75 125
Boron 6356.190 100 5000 951.3 108 75 125
Iron 103.514 20 100.0 0 104 75 125

Sample ID	N018919-001B-MSD	SampType:	MSD	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	3/3/2016	RunNo:	106232
Client ID:	ZZZZZZ	Batch ID:	56491	TestNo:	EPA 200.7			Analysis Date:	3/3/2016	SeqNo:	2251248
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Aluminum 10759.846 50 10000 0 108 75 125 10900 1.30 20
Boron 6390.623 100 5000 951.3 109 75 125 6356 0.540 20
Iron 101.061 20 100.0 0 101 75 125 103.5 2.40 20

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out

E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-100B-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:35:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_160308D	QC Batch: 56504	PrepDate	3/4/2016	Analyst: CEI
Manganese	16	0.023	0.50	µg/L
			1	3/8/2016 07:24 PM

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


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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:33:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_160308D	QC Batch: 56504	PrepDate	3/4/2016	Analyst: CEI
Antimony	ND	0.026	0.50	µg/L
Arsenic	ND	0.016	0.10	µg/L
Barium	19	0.072	1.0	µg/L
Copper	ND	0.26	1.0	µg/L
Lead	ND	0.27	5.0	µg/L
Manganese	4.1	0.11	2.5	µg/L
Molybdenum	21	0.15	2.5	µg/L
Nickel	ND	0.19	5.0	µg/L
Zinc	ND	0.20	50	µg/L

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected 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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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-701-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:42:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_160308D	QC Batch: 56504	PrepDate	3/4/2016	Analyst: CEI		
Antimony	ND	0.66	12	µg/L	25	3/8/2016 09:41 PM
Arsenic	ND	0.40	2.5	µg/L	25	3/8/2016 09:41 PM
Barium	150	1.8	25	µg/L	25	3/8/2016 09:41 PM
Beryllium	ND	0.66	12	µg/L	25	3/8/2016 09:41 PM
Cadmium	ND	0.24	12	µg/L	25	3/8/2016 09:41 PM
Cobalt	ND	0.33	12	µg/L	25	3/8/2016 09:41 PM
Copper	ND	1.3	5.0	µg/L	5	3/15/2016 11:27 AM
Lead	ND	1.3	25	µg/L	25	3/8/2016 09:41 PM
Manganese	19	0.57	12	µg/L	25	3/8/2016 09:41 PM
Molybdenum	160	0.73	12	µg/L	25	3/8/2016 09:41 PM
Nickel	ND	0.95	25	µg/L	25	3/8/2016 09:41 PM
Selenium	31	1.7	12	µg/L	25	3/15/2016 11:32 AM
Silver	ND	0.58	12	µg/L	25	3/15/2016 11:32 AM
Thallium	ND	0.84	12	µg/L	25	3/15/2016 11:32 AM
Vanadium	ND	0.62	25	µg/L	25	3/8/2016 09:41 PM
Zinc	ND	0.98	250	µg/L	25	3/8/2016 09:41 PM

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


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ASSET Laboratories

Date: 18-Mar-16

CLIENT: CH2M HILL

Work Order: N018918

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	MB-56504	SampType: MBLK	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/4/2016	RunNo: 106326					
Client ID: PBW		Batch ID: 56504	TestNo: EPA 200.8		Analysis Date: 3/8/2016	SeqNo: 2257982					
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									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.031	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Vanadium	ND	1.0									
Zinc	0.230	10									

Sample ID	LCS-56504	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/4/2016	RunNo:	106326		
Client ID:	LCSW	Batch ID:	56504	TestNo:	EPA 200.8			Analysis Date:	3/8/2016	SeqNo:	2257983		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		10.048		0.50	10.00	0	100	85	115				
Arsenic		10.013		0.10	10.00	0	100	85	115				
Barium		107.987		1.0	100.0	0	108	85	115				
Beryllium		10.125		0.50	10.00	0	101	85	115				
Cadmium		10.091		0.50	10.00	0	101	85	115				
Cobalt		9.594		0.50	10.00	0	95.9	85	115				
Lead		10.057		1.0	10.00	0	101	85	115				
Manganese		99.349		0.50	100.0	0	99.3	85	115				
Molybdenum		10.252		0.50	10.00	0	103	85	115				
Nickel		10.183		1.0	10.00	0	102	85	115				

Qualifiers:

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



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CLIENT: CH2M HILL
Work Order: N018918
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	LCS-56504	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/4/2016	RunNo:	106326
Client ID:	LCSW	Batch ID:	56504	TestNo:	EPA 200.8			Analysis Date:	3/8/2016	SeqNo:	2257983
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.263	0.50	10.00	0	103	85	115				
Vanadium	10.010	1.0	10.00	0	100	85	115				
Zinc	99.934	10	100.0	0	99.9	85	115				

Sample ID	N018918-003C-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/4/2016	RunNo:	106326
Client ID:	ZZZZZZ	Batch ID:	56504	TestNo:	EPA 200.8			Analysis Date:	3/8/2016	SeqNo:	2258015
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.992	12	10.00	0	110	75	125				
Arsenic	12.444	2.5	10.00	0.9781	115	75	125				
Barium	250.343	25	100.0	153.0	97.3	75	125				
Beryllium	11.061	12	10.00	0	111	75	125				
Cadmium	10.035	12	10.00	0	100	75	125				
Cobalt	8.820	12	10.00	3.523	53.0	75	125				S
Lead	9.653	25	10.00	0	96.5	75	125				
Manganese	125.462	12	100.0	19.46	106	75	125				
Molybdenum	173.623	12	10.00	161.4	122	75	125				
Nickel	24.703	25	10.00	15.19	95.1	75	125				
Vanadium	13.187	25	10.00	2.590	106	75	125				
Zinc	58.288	250	100.0	0	58.3	75	125				S

Sample ID	N018918-003C-MSD	SampType:	MSD	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/4/2016	RunNo:	106326
Client ID:	ZZZZZZ	Batch ID:	56504	TestNo:	EPA 200.8			Analysis Date:	3/8/2016	SeqNo:	2258020
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.039	12	10.00	0	110	75	125	10.99	0	20	
Arsenic	10.956	2.5	10.00	0.9781	99.8	75	125	12.44	12.7	20	
Barium	251.847	25	100.0	153.0	98.8	75	125	250.3	0.599	20	
Beryllium	10.363	12	10.00	0	104	75	125	11.06	0	20	
Cadmium	9.712	12	10.00	0	97.1	75	125	10.04	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
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL
Work Order: N018918
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	N018918-003C-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/4/2016	RunNo: 106326					
Client ID: ZZZZZZ		Batch ID: 56504	TestNo: EPA 200.8		Analysis Date: 3/8/2016	SeqNo: 2258020					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cobalt	9.200	12	10.00	3.523	56.8	75	125	8.820	0	20	S
Lead	9.445	25	10.00	0	94.5	75	125	9.653	0	20	
Manganese	125.487	12	100.0	19.46	106	75	125	125.5	0.0199	20	
Molybdenum	170.523	12	10.00	161.4	90.9	75	125	173.6	1.80	20	
Nickel	24.330	25	10.00	15.19	91.4	75	125	24.70	0	20	
Vanadium	13.654	25	10.00	2.590	111	75	125	13.19	0	20	
Zinc	57.330	250	100.0	0	57.3	75	125	58.29	0	20	S

Sample ID	N018919-002B-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/4/2016	RunNo: 106326					
Client ID: ZZZZZZ		Batch ID: 56504	TestNo: EPA 200.8		Analysis Date: 3/8/2016	SeqNo: 2258022					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	9.760	0.50	10.00	0	97.6	75	125				
Arsenic	12.286	0.10	10.00	2.827	94.6	75	125				
Barium	131.630	1.0	100.0	28.57	103	75	125				
Cadmium	8.281	0.50	10.00	0	82.8	75	125				
Cobalt	8.044	0.50	10.00	0	80.4	75	125				
Manganese	100.136	0.50	100.0	8.314	91.8	75	125				
Nickel	8.456	1.0	10.00	0	84.6	75	125				
Selenium	13.509	0.50	10.00	4.527	89.8	75	125				
Vanadium	17.441	1.0	10.00	8.117	93.2	75	125				
Zinc	85.196	10	100.0	4.091	81.1	75	125				

Sample ID	N018919-002B-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/4/2016	RunNo: 106326					
Client ID: ZZZZZZ		Batch ID: 56504	TestNo: EPA 200.8		Analysis Date: 3/8/2016	SeqNo: 2258023					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Beryllium	11.224	2.5	10.00	0	112	75	125				
Lead	11.300	5.0	10.00	0	113	75	125				
Molybdenum	35.376	2.5	10.00	22.52	129	75	125				S

Qualifiers:

- B

Analyte detected in the associated Method Blank

E

Value above quantitation range
- ND

Not Detected at the Reporting Limit

R

RPD outside accepted recovery limits
- DO

Surrogate Diluted Out

Calculations are based on raw values
- H

Holding times for preparation or analysis exceeded
- S

Spike/Surrogate outside of limits due to matrix interference

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL
Work Order: N018918
Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 200.8_W

Sample ID	MB-56504	SampType:	MBLK	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/4/2016	RunNo:	106448		
Client ID:	PBW	Batch ID:	56504	TestNo:	EPA 200.8			Analysis Date:	3/15/2016	SeqNo:	2267625		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	LCS-56504	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/4/2016	RunNo:	106448		
Client ID:	LCSW	Batch ID:	56504	TestNo:	EPA 200.8			Analysis Date:	3/15/2016	SeqNo:	2267626		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018918-003C-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/4/2016	RunNo:	106448		
Client ID:	ZZZZZZ	Batch ID:	56504	TestNo:	EPA 200.8			Analysis Date:	3/15/2016	SeqNo:	2267634		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018918-003C-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/4/2016	RunNo:	106448		
Client ID:	ZZZZZZ	Batch ID:	56504	TestNo:	EPA 200.8			Analysis Date:	3/15/2016	SeqNo:	2267637		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018918-003C-MSD	SampType:	MSD	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/4/2016	RunNo:	106448		
Client ID:	ZZZZZZ	Batch ID:	56504	TestNo:	EPA 200.8			Analysis Date:	3/15/2016	SeqNo:	2267638		
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
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference

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ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL
Work Order: N018918
Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 200.8_W

Sample ID	N018918-003C-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/4/2016	RunNo: 106448
Client ID:	ZZZZZZ	Batch ID: 56504	TestNo: EPA 200.8		Analysis Date: 3/15/2016	SeqNo: 2267638
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper		ND	5.0	10.00	0	0 75 125 0 0 20 S

Sample ID	N018918-003C-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/4/2016	RunNo: 106448
Client ID:	ZZZZZZ	Batch ID: 56504	TestNo: EPA 200.8		Analysis Date: 3/15/2016	SeqNo: 2267639
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Silver		9.554	12	10.00	0	95.5 75 125 4.767 0 20
Thallium		9.294	12	10.00	0	92.9 75 125 8.899 0 20

Sample ID	N018919-002B-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/4/2016	RunNo: 106448
Client ID:	ZZZZZZ	Batch ID: 56504	TestNo: EPA 200.8		Analysis Date: 3/15/2016	SeqNo: 2267644
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper		3.052	1.0	10.00	0	30.5 75 125 S
Silver		4.679	0.50	10.00	0	46.8 75 125 S

Sample ID	N018919-002B-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/4/2016	RunNo: 106448
Client ID:	ZZZZZZ	Batch ID: 56504	TestNo: EPA 200.8		Analysis Date: 3/15/2016	SeqNo: 2267645
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Thallium		10.472	2.5	10.00	0	105 75 125

Sample ID	N018918-003C-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/4/2016	RunNo: 106326
Client ID:	ZZZZZZ	Batch ID: 56504	TestNo: EPA 200.8		Analysis Date: 3/8/2016	SeqNo: 2270097
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Selenium		38.146	12	10.00	31.08	70.6 75 125 S

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
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: CH2M HILL

Work Order: N018918

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	N018918-003C-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/4/2016	RunNo: 106326						
Client ID: ZZZZZZ		Batch ID: 56504	TestNo: EPA 200.8		Analysis Date: 3/8/2016	SeqNo: 2270102						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD	Ref Val	%RPD	RPDLimit	Qual
Selenium	39.137	12	10.00	31.08	80.5	75	125	38.15	2.57	20		



ASSET LABORATORIES
ANALYTICAL LABORATORIES AND CHEMICAL SERVICES

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

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Qualifiers:

E Value above quantitation range

R RPD outside accepted recovery limits

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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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT: CH2M HILL
Lab Order: N018918
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N018918-001

Client Sample ID: SC-100B-WDR-537
Collection Date: 3/1/2016 11:35:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC
EPA 218.6

RunID: IC7_160304A	QC Batch: R106264				PrepDate		Analyst: RB
Hexavalent Chromium	670	0.75	10		µg/L	50	3/4/2016 01:14 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_160308D	QC Batch: 56504				PrepDate	3/4/2016	Analyst: CEI
Chromium	690	0.43	5.0		µg/L	5	3/8/2016 08:53 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:33:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC
EPA 218.6

RunID: IC7_160304A	QC Batch: R106264	PrepDate	Analyst: RB
Hexavalent Chromium	0.21 0.015 0.20	µg/L	1 3/4/2016 01:52 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_160308D	QC Batch: 56504	PrepDate	3/4/2016	Analyst: CEI
Chromium	ND 0.43 5.0	µg/L	5	3/8/2016 09:16 PM

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


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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-701-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:42:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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HEXAVALENT CHROMIUM BY IC
EPA 218.6

RunID: IC7_160304A	QC Batch: R106264	PrepDate	Analyst: RB
Hexavalent Chromium	2.2 0.075 1.0	µg/L	5 3/4/2016 02:49 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_160308D	QC Batch: 56504	PrepDate	3/4/2016	Analyst: CEI
Chromium	ND 2.1 25	µg/L	25	3/8/2016 09:41 PM

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


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Date: 18-Mar-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N018918

Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 200.8_W_CRPGE

Sample ID	MB-56504	SampType:	MBLK	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	3/4/2016	RunNo:	106326
Client ID:	PBW	Batch ID:	56504	TestNo:	EPA 200.8			Analysis Date:	3/8/2016	SeqNo:	2258100
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		0.132		1.0							

Sample ID	LCS-56504	SampType:	LCS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	3/4/2016	RunNo:	106326
Client ID:	LCSW	Batch ID:	56504	TestNo:	EPA 200.8			Analysis Date:	3/8/2016	SeqNo:	2258101
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		9.940		1.0	10.00	0	99.4	85	115		

Sample ID	N018918-003C-MS	SampType:	MS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	3/4/2016	RunNo:	106326
Client ID:	ZZZZZZ	Batch ID:	56504	TestNo:	EPA 200.8			Analysis Date:	3/8/2016	SeqNo:	2258133
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		11.747		25	10.00	4.620	71.3	75	125		S

Sample ID	N018918-003C-MSD	SampType:	MSD	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	3/4/2016	RunNo:	106326
Client ID:	ZZZZZZ	Batch ID:	56504	TestNo:	EPA 200.8			Analysis Date:	3/8/2016	SeqNo:	2258138
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		12.083		25	10.00	4.620	74.6	75	125	11.75	0 20 S

Sample ID	N018919-002B-MS	SampType:	MS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	3/4/2016	RunNo:	106326
Client ID:	ZZZZZZ	Batch ID:	56504	TestNo:	EPA 200.8			Analysis Date:	3/8/2016	SeqNo:	2258141
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		824.885		5.0	10.00	823.9	10.3	75	125		S

Qualifiers:

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

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CLIENT: CH2M HILL

Work Order: N018918

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	MB-R106264	SampleType:	MBLK	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	106264
Client ID:	PBW	Batch ID:	R106264	TestNo:	EPA 218.6			Analysis Date:	3/4/2016	SeqNo:	2252773
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-R106264	SampleType:	LCS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	106264
Client ID:	LCSW	Batch ID:	R106264	TestNo:	EPA 218.6			Analysis Date:	3/4/2016	SeqNo:	2252774
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium		4.945		0.20	5.000	0	98.9	90	110		

Sample ID	N018918-001BDUP	SampleType:	DUP	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	106264
Client ID:	ZZZZZZ	Batch ID:	R106264	TestNo:	EPA 218.6			Analysis Date:	3/4/2016	SeqNo:	2252776
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium		676.240		10						667.2	1.34 20

Sample ID	N018918-001BMS	SampleType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	106264
Client ID:	ZZZZZZ	Batch ID:	R106264	TestNo:	EPA 218.6			Analysis Date:	3/4/2016	SeqNo:	2252777
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium		918.905		10	250.0	667.2	101	90	110		

Sample ID	N018918-001BMSD	SampleType:	MSD	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	106264
Client ID:	ZZZZZZ	Batch ID:	R106264	TestNo:	EPA 218.6			Analysis Date:	3/4/2016	SeqNo:	2252778
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium		914.080		10	250.0	667.2	98.7	90	110	918.9	0.526 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: CH2M HILL

Work Order: N018918

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	N018918-002CMS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 106264						
Client ID: ZZZZZZ		Batch ID: R106264	TestNo: EPA 218.6		Analysis Date: 3/4/2016	SeqNo: 2252780						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018918-003BMS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 106264						
Client ID: ZZZZZZ		Batch ID: R106264	TestNo: EPA 218.6		Analysis Date: 3/4/2016	SeqNo: 2252784						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N018936-002AMS	SampleType: MS	TestCode: 218.6_WU_P		Units: µg/L	Prep Date:	RunNo: 106264					
Client ID: ZZZZZZ		Batch ID: R106264	TestNo: EPA 218.6			Analysis Date: 3/4/2016	SeqNo: 2252802					
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

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E

Value above quantitation range

R

RPD outside accepted recovery limits

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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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-100B-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:35:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY
SM 2130B

RunID: WETCHEM_160302D	QC Batch: R106196	PrepDate	Analyst: LR
Turbidity	0.29	0.10	0.10
			NTU
			1
			3/2/2016 02:10 PM

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


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ANALYTICAL RESULTS

Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:33:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: WETCHEM_160302D	QC Batch: R106196	PrepDate	Analyst: LR
Turbidity	0.32 0.10 0.10	NTU	1 3/2/2016 02:10 PM

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



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CLIENT: CH2M HILL

Work Order: N018918

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 2130_W

Sample ID	MB-R106196	SampType: MBLK	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 106196					
Client ID: PBW		Batch ID: R106196	TestNo: SM 2130B		Analysis Date: 3/2/2016	SeqNo: 2249887					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	ND		0.10								

Sample ID	N018918-001ADUP	SampType: DUP	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 106196					
Client ID:	ZZZZZZ	Batch ID: R106196	TestNo: SM 2130B		Analysis Date: 3/2/2016	SeqNo: 2249889					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	0.300		0.10					0.2900	3.39		30



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B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

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Qualifiers:

B

H

S

E Value above quantitation range

R RPD outside accepted recovery limits

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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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-701-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:42:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL MERCURY BY COLD VAPOR TECHNIQUE
EPA 245.1

RunID: AA1_160303A	QC Batch: 56492	PrepDate	3/3/2016	Analyst: CEI
Mercury	ND	0.025	0.20	µg/L
			1	3/3/2016 04:59 PM

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


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Date: 18-Mar-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N018918

Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 245.1_W

Sample ID	MB-56492	SampType:	MBLK	TestCode:	245.1_W	Units:	µg/L	Prep Date:	3/3/2016	RunNo:	106216
Client ID:	PBW	Batch ID:	56492	TestNo:	EPA 245.1			Analysis Date:	3/3/2016	SeqNo:	2250710
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury ND 0.20

Sample ID	LCS-56492	SampType:	LCS	TestCode:	245.1_W	Units:	µg/L	Prep Date:	3/3/2016	RunNo:	106216
Client ID:	LCSW	Batch ID:	56492	TestNo:	EPA 245.1			Analysis Date:	3/3/2016	SeqNo:	2250711
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 5.333 0.20 5.000 0 107 85 115

Sample ID	N018910-001B-MS	SampType:	MS	TestCode:	245.1_W	Units:	µg/L	Prep Date:	3/3/2016	RunNo:	106216
Client ID:	ZZZZZZ	Batch ID:	56492	TestNo:	EPA 245.1			Analysis Date:	3/3/2016	SeqNo:	2250712
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 5.061 0.20 5.000 0 101 75 125

Sample ID	N018910-001B-MSD	SampType:	MSD	TestCode:	245.1_W	Units:	µg/L	Prep Date:	3/3/2016	RunNo:	106216
Client ID:	ZZZZZZ	Batch ID:	56492	TestNo:	EPA 245.1			Analysis Date:	3/3/2016	SeqNo:	2250713
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 5.241 0.20 5.000 0 105 75 125 5.061 3.50 20

Sample ID	N018930-001A-MS	SampType:	MS	TestCode:	245.1_W	Units:	µg/L	Prep Date:	3/3/2016	RunNo:	106216
Client ID:	ZZZZZZ	Batch ID:	56492	TestNo:	EPA 245.1			Analysis Date:	3/3/2016	SeqNo:	2250726
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 5.304 0.20 5.000 0 106 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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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:33:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_160302A	QC Batch: R106186	PrepDate	Analyst: QBM
Fluoride	2.1 0.012 0.10	mg/L	1 3/2/2016 02:13 PM

ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_160302A	QC Batch: R106186	PrepDate	Analyst: QBM
Sulfate	440 1.6 25	mg/L	50 3/2/2016 08:59 PM

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


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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-701-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:42:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_160302A	QC Batch: R106186	PrepDate	Analyst: QBM
Fluoride	17 0.12	1.0 mg/L	10 3/2/2016 02:28 PM

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


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

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ASSET Laboratories

Date: 18-Mar-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N018918

Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 300_W_FPGE

Sample ID	MB-R106186_F	SampType: MBLK	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 106186						
Client ID: PBW		Batch ID: R106186	TestNo: EPA 300.0		Analysis Date: 3/2/2016	SeqNo: 2248762						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride ND 0.10

Sample ID	LCS-R106186_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	106186			
Client ID:	LCSW	Batch ID:	R106186	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2248763			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 2.470 0.10 2.500 0 98.8 90 110

Sample ID	N018918-003ADUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	106186			
Client ID:	ZZZZZZ	Batch ID:	R106186	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2248774			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 17.170 1.0 0 16.52 0 0 0 16.52 3.86%

Sample ID	N018918-003AMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	106186			
Client ID:	ZZZZZZ	Batch ID:	R106186	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2248775			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 38.970 1.0 25.00 16.52 89.8 80 120

Sample ID	N018918-003AMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	106186			
Client ID:	ZZZZZZ	Batch ID:	R106186	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2248776			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 39.700 1.0 25.00 16.52 92.7 80 120 38.97 1.86 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: CH2M HILL
Work Order: N018918
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R106186_SO4	SampleType: MBLK	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 106186
Client ID:	PBW	Batch ID: R106186	TestNo: EPA 300.0		Analysis Date: 3/2/2016	SeqNo: 2248986
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		ND	0.50			

Sample ID	LCS-R106186_SO4	SampleType: LCS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 106186
Client ID:	LCSW	Batch ID: R106186	TestNo: EPA 300.0		Analysis Date: 3/2/2016	SeqNo: 2248987
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		4.766	0.50	5.000	0	95.3 90 110

Sample ID	N018919-001ADUP	SampleType: DUP	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 106186
Client ID:	ZZZZZZ	Batch ID: R106186	TestNo: EPA 300.0		Analysis Date: 3/2/2016	SeqNo: 2249000
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		444.850	25			447.5 0.594 20

Sample ID	N018919-001AMS	SampleType: MS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 106186
Client ID:	ZZZZZZ	Batch ID: R106186	TestNo: EPA 300.0		Analysis Date: 3/2/2016	SeqNo: 2249001
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		701.900	25	250.0	447.5	102 80 120

Sample ID	N018919-001AMSD	SampleType: MSD	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 106186
Client ID:	ZZZZZZ	Batch ID: R106186	TestNo: EPA 300.0		Analysis Date: 3/2/2016	SeqNo: 2249002
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		702.350	25	250.0	447.5	102 80 120 701.9 0.0641 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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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 18-Mar-16

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-537
Lab Order:	N018918	Collection Date:	3/1/2016 11:33:00 AM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N018918-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION
SM4500-NO3F

RunID: WETCHEM_160308F	QC Batch: R106334	PrepDate	Analyst: RB
Nitrate/Nitrite as N	3.2 0.11	0.25 mg/L	5 3/8/2016

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected 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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ASSET Laboratories

Date: 18-Mar-16

CLIENT: CH2M HILL

Work Order: N018918

Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R106334	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	106334
Client ID:	PBW	Batch ID:	R106334	TestNo:	SM4500-NO3			Analysis Date:	3/8/2016	SeqNo:	2258500
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-R106334	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	106334
Client ID:	LCSW	Batch ID:	R106334	TestNo:	SM4500-NO3			Analysis Date:	3/8/2016	SeqNo:	2258501
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Nitrate/Nitrite as N 0.518 0.050 0.5000 0 104 85 115

Sample ID	N018844-001EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	106334
Client ID:	ZZZZZZ	Batch ID:	R106334	TestNo:	SM4500-NO3			Analysis Date:	3/8/2016	SeqNo:	2258503
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Nitrate/Nitrite as N 0.495 0.050 0.5301 6.91 20

Sample ID	N018844-001EMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	106334
Client ID:	ZZZZZZ	Batch ID:	R106334	TestNo:	SM4500-NO3			Analysis Date:	3/8/2016	SeqNo:	2258504
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Nitrate/Nitrite as N 1.073 0.050 0.5000 0.5301 109 75 125

Sample ID	N018844-001EMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	106334
Client ID:	ZZZZZZ	Batch ID:	R106334	TestNo:	SM4500-NO3			Analysis Date:	3/8/2016	SeqNo:	2258505
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Nitrate/Nitrite as N 1.090 0.050 0.5000 0.5301 112 75 125 1.073 1.59 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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Project Name PG&E Topock Location PG&E Topock Project Number 658274.01.IM.OP.00 Project Manager Scott O'Donnell Sample Manager Shawn Duffy		Container: Preservatives: Filtered: Holding Time:		DATE TIME MATRIX		COMMENTS	
Task Order Project IM3PLANT-ARAR-WDR-537 Turnaround Time 10 Days Shipping Date: COC Number: 537							
SC-100B-WDR-537	3-1-16	1135	Water	1 Liter Poly 4°C	1 Liter Poly 4°C	1 Liter Poly 4°C	1 Liter Poly 4°C
SC-700B-WDR-537	3-1-16	1139	Water	1 Liter Poly 4°C	1 Liter Poly 4°C	1 Liter Poly 4°C	1 Liter Poly 4°C
SC-701-WDR-537	3-1-16	1142	Water	1 Liter Poly 4°C	1 Liter Poly 4°C	1 Liter Poly 4°C	1 Liter Poly 4°C
				TOTAL NUMBER OF CONTAINERS 10			

Approved by Sampled by Relinquished by Received by Relinquished by Received by	Signatures 	Date/Time 3-1-16 1142 3-1-16 1145 3-1-16 1147 3-1-16 1150	Shipping Details Method of Shipment: FedEx On Ice: yes / no Airbill No: Lab Name: ASSET Laboratories Lab Phone: (702) 307-2659	ATTN: Sample Custody and Glen Gesmundo	Special Instructions: SC-700B Total metals List: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn Report Copy to Shawn Duffy 530-229-3303
---	---------------------------------------	--	---	--	---

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: 3/1/2016 Workorder: N018918
 Rep sample Temp (Deg C): 2.1 IR Gun ID: 2
 Temp Blank: ☒ Yes ☐ No
 Carrier name: ASSET
 Last 4 digits of Tracking No.: NA Packing Material Used: None
 Cooling process: ☒ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

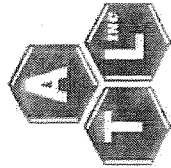
Sample Receipt Checklist

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

Comments: Samples received at pH > 2

Checklist Completed By: HG  3/3/2016

Reviewed By:  03/07/16



ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118

www.asset-labs.com

TEL: 7023072659

FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

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

02-Mar-16

Requested Tests			
Sample ID	Matrix	Date Collected	Bottle Type
N018918-002A / SC-700B-WDR-537	Water	3/1/2016 11:33:00 AM	16OZP

SM4500-NH3D	1
-------------	---

General Comments:

Please email sample receipt acknowledgement to the PM.

Please use PO#: N18918A. 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.

Date/Time	Date/Time
Relinquished by: <i>Xander Rodriguez</i>	680 # : 531100322
Relinquished by:	Received by: <i>3/2/16 17:00</i>
Relinquished by:	Received by:

List of Analysts

ASSET Laboratories Work Order: **N018918**

NAME	TEST METHOD
Quennie Manimtim	EPA 300.0
Claire Ignacio	EPA 200.7, EPA 200.8, EPA 245.1
Ryan Balilu	EPA 218.6, SM 4500-NO3F
Lilia Ramit	EPA 120.1, SM 2540C, SM 2130B



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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.: 16C0059

Printed: 03/14/2016

CASE NARRATIVE

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Ammonia result. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The sample was received and delivered with the chain of custody on March 3, 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. 201.

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
NO18918-002A/SC-700B-WDR-537	16C0059-01	Wastewater	Grab	03/01/2016 11:33	03/03/2016 09:30

DEFINITIONS

Symbol	Definition
DF	Dilution Factor
MDL	Method Detection Limit
ND	Not Detected
RL	Reporting Limit

Respectfully yours,

Lyn Phaerakkakit
Project Manager



Client: Advanced Technology Laboratories-N

Project Name: ATL-NV

Printed: 03/14/2016

NO18918-002A/SC-700B-WDR-537

16C0059-01 (Wastewater)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
---------	--------	----	-------	----	-------	----------	---------	--------	-------

Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	ND	0.0500	mg/L	1	1603188	03/10/2016 16:11	AL	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----	-----------------	--



Client: Advanced Technology Laboratories - NV

3151 W Post Road

Las Vegas, NV 89118

Attention: Marlon Cartin

Sample: One (1) Water Sample

Project Name: PG&E Topock Project

Project No.: N/A

Laboratory No.: 16C0059

Date: March 14, 2016

Collected: March 1, 2016

Received: March 3, 2016

ANALYST LIST

METHOD	PARAMETER	ANALYST
SM 4500-NH3 D	Ammonia	Alex Luna

ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: NO18918-002A/SC-700B-WDR-537
Lab Sample ID: 16C0059-01
Project: ATL-NV

Date Sampled: 03/01/16 11:33 Matrix: Wastewater

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	03/10/16 16:11	SM 4500-NH3 D M

METHOD BLANK DATA SHEET

SM 4500-NH3 D M

Client: Advanced Technology Laboratories-NV

Project: ATL-NV

Laboratory ID: 1603188-BLK1

Prepared: 03/10/16 11:40

Preparation: SM 4500-NH3 B

Matrix: Water

Analyzed: 03/10/16 16:05

Instrument: TL01

File ID: 6C10001-015

Batch: 1603188

Sequence: 6C10001

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	RL	Q
7664-41-7	Ammonia	ND	0.0318	0.0500	

LCS / LCS DUPLICATE RECOVERY

SM 4500-NH3 D M

Client: Advanced Technology Laboratories-NV
Project: ATL-NV
Work Order: 16C0059

Matrix: Water
Prep Batch: 1603188
Prep Method: SM 4500-NH3 B
Lab Sample ID: 1603188-BS1

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia	0.400	0.384	96	90 - 110

Matrix Spike

Analysis Method:	SM 4500-NH3 D M
Prep Method:	SM 4500-NH3 B
Laboratory ID:	1603188-MS1
Source Sample ID:	16C0131-01

Page 13 of 27

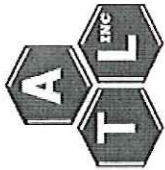
DUPLICATES

NO18918-002A/SC-700B-WDR-537

Client: Advanced Technology Laboratories-NV
Project: ATL-NV

Matrix:	Water	Laboratory ID:	1603188-DUP1
Prep Batch:	1603188	Initial/Final:	50 mL / 50 mL
Prep Method:	SM 4500-NH3 B	Analysis:	SM 4500-NH3 D M

ANALYTE	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	CONTROL LIMIT
Ammonia	0.0351	0.0343			20



ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118
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TEL: 7023072659 FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

16C0059

Subcontractor:

Truesdail
3337 Michelson Drive, Suite CN750
Irvine, CA 92612

TEL: (714) 730-6239
FAX: (714) 730-6462
Acct #:

QC Level: Level IV

Field Sampler: SIGNED

02-Mar-16

Sample ID		Matrix	Date Collected	Bottle Type	SM4500-NH3D	Requested Tests
N018918-002A	/ SC-700B-WDR-537	Water	3/1/2016 11:33:00 AM	16OZP	1	

ALERT!!
Level IV QC

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N18918A 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.

Date/Time	
Relinquished by: <i>Vander Rodriguez</i>	3/2/16 17:00
Received by: <i>grruh</i>	03/03/16 9:30
Relinquished by:	
Received by:	

ALERT !!
Level IV QC

Log-in check list
For level III data package

Client: ATLLab Number: 16C0059Received Date: 03/03/16**Sample receiving review**

	Yes	No	N/A	Comment
Was special login form received by login personnel?	✓			
Was COC received and signed by client and login personnel?	✓			
Were all sample temperature measured and recorded on COC?	✓			
Did you measure and record the pH on all metals samples on COC?			✓	
Has sample integrity and analysis discrepancy form been filled out completely?	✓			
Were all intercompany yellow forms generated and stamped with "alert level III QC" note?	✓			
Have check-in and check out lists been filled out and attached to appropriate form?	✓			
Were sample containers labeled with TLI numbers, date, and time sampled?	✓			
Did you notify analyst or group leader about short holding time?	✓			
Was a copy of COC attached to all yellow intracompany form?	✓			
For special clients, have all their samples been logged into the Internal COC book?	✓			
Were samples locked in fridge or special storage area?	✓			
Was temperature recorded in the log book?	✓			
Sample receiving Signature: <u>gprali</u>				

WORK ORDER

Printed: 3/3/16 9:47:05AM

16C0059

Truesdail Laboratories, Inc

Client: Advanced Technology Laboratories-NV
Project: ATL-NV

Project Manager: Lyn Phaerakkakit
Project Number: [none]

Report To:

Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone: (702) 307-2659
Fax: (702) 307-2691

Invoice To:

Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone : (702) 307-2659
Fax: (702) 307-2691

Date Due: 03/14/2016 16:30 (7 day TAT)

Received By: Nirali Patel

Date Received: 03/03/2016 09:30

Logged In By: Nirali Patel

Date Logged In: 03/03/2016 09:44

Samples Received at: 6.2°C
Chain of Custody rece Yes Samples intact? Yes
Letter (if sent) matche No Custody seals (if any) No
Requested analyses ac Yes Analyses within hold t Yes
Samples received in a Yes

Analysis	Due	TAT	Expires	Comments
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16C0059-01 NO18918-002A/SC-700B-WDR-537 [Water] Sampled 03/01/2016
11:33 (GMT-08:00) Pacific Time (US &

Ammonia E	03/14/2016 12:00	7	03/29/2016 11:33	
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Michelle Reed
Reviewed By

3/4/16
Date

WDR pH Results

If the on site laboratory pH result for T-700 tank is less than pH 6.6 or greater than pH 8.3 the Injection well should be shut down until the problem is fixed.

Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover Sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
SL-100B	1-5-16	0935	1-5-16	0955	H64400	1-5-16	07:15	-57.52	CHARLENE	7.35

Notes:

SL-700B	1-5-16	0935	1-5-16	0955	HQ440D	1-5-16	0715	-57.52	CHRIS LEMZ	6,92
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Notes:

PE-1	1-5-16	0935	1-5-16	0945	HQ 4400	1-5-16	07:15	-57.52	CHARS LG002	7.66
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TW-30	1-5-16	0935	1-5-16	0945	HQ4400	1-5-16	07:15	-57.52	CHARC LGTR	7.42
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notes:

[illegible]

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Notes:

[illegible]

Notes:

Reminder: WDR Required pH Range for the Effluent (SC-700B) is: 6.5 - 8.4

Analytical Bench Log Book

WDR pH Results

If the on site laboratory pH result for T-700 tank is less than pH 6.6 or greater than pH 8.3 the Injection well should be shut down until the problem is fixed.

Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
SL-100B	2-2-16	0935	2-2-16	0940	HQ 4400	2-2-16	00:17	-57.45	CHARS LENTZ	7.35

Notes: SAMPLES NOT PLACED UP (RESAMPLE)

SL-700B	2-2-16	0935	2-2-16	0940	HQ 4400	2-2-16	00:17	-57.45	CHARS LENTZ	7.25
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Notes: SAMPLES NOT PLACED UP (RESAMPLE)

PE-1	2-2-16	0935	2-2-16	0940	HQ 4400	2-2-16	00:17	-57.45	CHARS LENTZ	7.48
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Notes:

TW-33	2-2-16	0935	2-2-16	0940	HQ 4400	2-2-16	00:17	-57.45	CHARS LENTZ	7.29
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Notes:

SL-100B	2-3-16	0710	2-3-16	0720	HQ 4400	2-3-16	00:18	-57.28	CHARS LENTZ	7.28
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Notes:

SL-700B	2-3-16	0710	2-3-16	0720	HQ 4400	2-3-16	00:18	-57.28	CHARS LENTZ	6.98
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Reminder: WDR Required pH Range for the Effluent (SC-700B) is: 6.5 - 8.4

Analytical Bench Log Book

WDR pH Results

If the on site laboratory pH result for T-700 tank is less than pH 6.6 or greater than pH 8.3 the Injection well should be shut down until the problem is fixed.

Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover Sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
SC-701-WDR537	3-1-16	1142	3-1-16	1150	HQ440D	3-1-16	0540	-56.65	Josh R	7.83

Notes:

SC-700B-WDR537	3-1-16	1138	3-1-16	1150	HQ440D	3-1-16	0540	-56.65	Josh R	7.00
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Notes:

SC-100B-WDR537	3-1-16	1135	3-1-16	1150	HQ440D	3-1-16	0540	-56.65	Josh R	7.35
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Notes:

SC-TW03D-240 ²⁴⁰ SC-700B-WDR537	3-1-16	1150	3-1-16	1157	HQ440D	3-1-16	0540	-56.65	Josh R	7.37
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Notes:

SC-TW02D-240	3-1-16	1150	3-1-16	1158	HQ440D	3-1-16	0540	-56.65	Josh R	7.48
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Notes:

Reminder: WDR Required pH Range for the Effluent (SC-700B) is: 6.5 - 8.4

