

October 15, 2015

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**Subject: Topock IM-3 Third Quarter 2015 Monitoring Report
PG&E Topock Compressor Station, Needles, California
Interim Measure No. 3 Groundwater Treatment System
(Document ID: PGE20151015A)**

Dear Ms. Innis and Mr. Perdue:

Enclosed is the Third Quarter 2015 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.

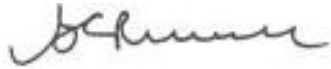
The IM-3 groundwater extraction and treatment system has extracted and treated approximately 673,314,987 gallons of water and removed approximately 8,390 pounds of total chromium from August 1, 2005 through September 30, 2015.

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 Third Quarter 2015 Monitoring Report

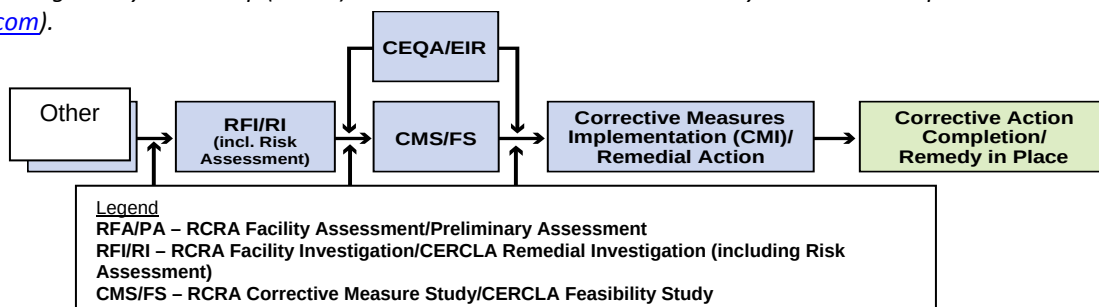
cc: José Cortez, Colorado River Basin Regional Water Board
Thomas Vandenberg, Colorado River Basin Regional Water Board
Aaron Yue, California Department of Toxic Substances Control

Topock Project Executive Abstract

Document Title: Topock IM-3 Third Quarter 2015 Monitoring Report Submitting Agency/Author: U.S. Department of the Interior and Regional Water Quality Control Board Final Document? ☒ Yes ☐ No	Date of Document: October 15, 2015 Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) PG&E Document ID Number: PGE20151015A
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 Third Quarter 2015 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 Third Quarter 2015 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).



Third Quarter 2015 Monitoring Report Interim Measure No. 3 Groundwater Treatment System

Document ID: PGE20151015A

**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

October 15, 2015

CH2MHILL®

155 Grand Avenue, Suite 800
Oakland, CA 94612

**Third Quarter 2015 Monitoring Report
for Interim Measure No. 3 Groundwater Treatment System**

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

Prepared for

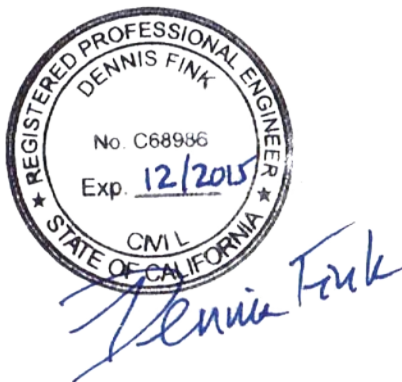
United States Department of the Interior
and
Colorado River Basin Regional Water Quality Control Board

on behalf of

Pacific Gas and Electric Company

October 15, 2015

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



Dennis Fink, P.E.
Project Engineer

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Appendix

A	Third Quarter 2015 Laboratory Analytical Reports
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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 Third Quarter 2015. 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 TW-2S, TW-2D, TW-3D, and PE-1.
- Purged groundwater and water generated from rinsing field equipment during monitoring events.
- Groundwater generated during well installation, well development, and aquifer testing.

During the Third Quarter 2015, extraction wells TW-2D, TW-2S, TW-3D and PE-1 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:

- 96.3 percent during July 2015
- 84.0 percent during August 2015
- 99.3 percent during September 2015

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 Third Quarter 2015 are detailed in Section 4.

Groundwater Treatment System Flow Rates

The Third Quarter 2015 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 16,811,470 gallons of extracted groundwater during the Third Quarter 2015. The IM-3 facility also treated approximately 29,700 gallons of injection well backwashing/re-development water.

Eight containers of solids (sludge) were transported offsite from the IM-3 facility during Third Quarter 2015.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 6.8 percent downtime during Third Quarter 2015) 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 July 2015

During July 2015, extraction wells TW-3D and PE-1 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 July 2015.

The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 96.3 percent during the July 2015 reporting period.

The IM-3 facility treated approximately 5,854,705 gallons of extracted groundwater during July 2015. The IM-3 facility treated 2,700 gallons of injection well backwashing/re-development water.

Periods of planned and unplanned extraction system down time (that together resulted in approximately 3.7 percent downtime during July 2015) are summarized below.

- **July 1, 2015 (unplanned):** The extraction well system was offline from 12:22 a.m. to 2:24 a.m. due to loss of power from the City of Needles. Extraction system downtime was 2 hours, 2 minutes.
- **July 1, 2015 (unplanned):** The extraction well system was offline from 7:12 a.m. to 7:20 a.m. due to loss of power from the City of Needles. Extraction system downtime was 8 minutes.
- **July 7, 2015 (planned):** The extraction well system was offline from 9:42 a.m. to 9:44 am, from 9:56 a.m. to 10:00 am, from 10:08 a.m. to 10:10 am, from 10:12 a.m. to 10:14 am, from 10:18 a.m. to 10:20 am, and from 10:30 a.m. to 10:34 a.m. due to testing of critical alarms and the leak detection system. Extraction system downtime was 16 minutes.
- **July 8, 2015 (unplanned):** The extraction well system was offline from 9:22 a.m. to 11:20 a.m. and 11:32 a.m. to 11:54 a.m. to change out the microfilter modules and replace flow control valves FCV-200 and FCV-701. Extraction system downtime was 2 hours, 20 minutes.
- **July 10, 2015 (unplanned):** The extraction well system was offline from 6:40 a.m. to 7:24 a.m. to clean the microfilter strainer. Extraction system downtime was 44 minutes.

- **July 13, 2015 (unplanned):** The extraction well system was offline from 12:12 p.m. to 1:52 p.m. to replace a valve on the reverse osmosis system and conduct tank management. Extraction system downtime was 1 hour, 40 minutes.
- **July 13, 2015 (unplanned):** The extraction well system was offline from 5:46 p.m. to 5:56 p.m. due to loss of power from the City of Needles. Extraction system downtime was 10 minutes.
- **July 14, 2015 (unplanned):** The extraction well system was offline from 11:06 a.m. to 11:38 a.m. to clean the microfilter strainer. Extraction system downtime was 32 minutes.
- **July 16, 2015 (unplanned):** The extraction well system was offline from 8:12 p.m. to 8:28 p.m. due to loss of power from the City of Needles. The facility was transferred to backup generator power during this time. Extraction system downtime was 16 minutes.
- **July 17, 2015 (unplanned):** The extraction well system was offline from 5:00 a.m. to 5:06 a.m. to return the facility to power from the City of Needles. Extraction system downtime was 6 minutes.
- **July 17, 2015 (unplanned):** The extraction well system was offline from 7:00 p.m. to 7:02 p.m. due to loss of power from the City of Needles. The facility was transferred to backup generator power during this time. Extraction system downtime was 2 minutes.
- **July 18, 2015 (unplanned):** The extraction well system was offline from 12:18 a.m. to 12:24 a.m. and from 12:34 a.m. to 12:58 a.m. to return the facility to power from the City of Needles. Extraction system downtime was 30 minutes.
- **July 18, 2015 (unplanned):** The extraction well system was offline from 1:34 p.m. to 4:08 p.m. due to loss of power from the City of Needles. The facility was transferred to backup generator power during this time. Extraction system downtime was 2 hours, 34 minutes.
- **July 19, 2015 (unplanned):** The extraction well system was offline from 10:42 a.m. to 10:44 a.m. to return the facility to power from the City of Needles. Extraction system downtime was 2 minutes.
- **July 20, 2015 (unplanned):** The extraction well system was offline from 9:38 a.m. to 11:24 a.m. due to the failure of the air compressor. Extraction system downtime was 1 hour, 46 minutes.
- **July 27, 2015 (unplanned):** The extraction well system was offline from 2:20 a.m. to 2:36 a.m. due to a high level alarm in the iron oxidation reactor 1 (T-301A). Extraction system downtime was 16 minutes.
- **July 26, 2015 (unplanned):** The extraction well system was offline from 6:10 a.m. to 8:50 a.m. and 11:10 a.m. to 3:00 p.m. to repair leaks in the microfilter system. Extraction system downtime was 6 hours, 30 minutes.
- **July 27, 2015 (unplanned):** The extraction well system was offline from 11:50 a.m. to 12:52 p.m. to change out the microfilter modules. Extraction system downtime was 1 hour, 2 minutes.
- **July 30, 2015 (unplanned):** The extraction well system was offline from 3:02 p.m. to 3:22 p.m., from 3:26 p.m. to 3:32 p.m., and from 4:44 p.m. to 8:24 p.m. due to storms that resulted in the City of Needles supplying single-phase power instead of the required 3-phase power. This event caused failure of the main air compressor and failure of the CPU for the primary reverse osmosis system. Extraction system downtime was 4 hours, 6 minutes.
- **July 31, 2015 (unplanned):** The extraction well system was offline from 5:26 p.m. to 6:00 p.m. due to failure of the air compressor and resetting of the microfilter system settings. Extraction system downtime was 34 minutes.

- **July 31, 2015 (unplanned):** The extraction well system was offline from 10:14 p.m. to 11:22 p.m. due to the failure of the air compressor. Extraction system downtime was 1 hour, 8 minutes.

4.2 August 2015

During August 2015, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction well TW-2S was operated for a brief time on August 31, 2015. Extraction well TW-2D was not operated during August 2015. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 84.0 percent during the August 2015 reporting period.

The IM-3 facility treated approximately 5,122,887 gallons of extracted groundwater during August 2015.

Periods of planned and unplanned extraction system down time (that together resulted in approximately 16.0 percent downtime during August 2015) are summarized below.

- **August 1, 2015 (unplanned):** The extraction well system was offline from 12:40 a.m. to 12:48 a.m. due to failure of the air compressor. Extraction system downtime was 8 minutes.
- **August 1, 2015 (unplanned):** The extraction well system was offline from 08:02 a.m. to 08:30 a.m. due to failure of the air compressor. Extraction system downtime was 28 minutes.
- **August 6, 2015 (planned):** The extraction well system was offline from 8:46 a.m. to 9:16 a.m. due to testing of critical alarms and the leak detection system. Extraction system downtime was 30 minutes.
- **August 6, 2015 (unplanned):** The extraction well system was offline from 3:48 p.m. to 5:20 p.m. and from 5:36 p.m. to 6:54 p.m. due to loss of power from the City of Needles caused by a storm in the area. During the power outage, the ferrous pump lost connection with the human-machine interface (HMI) which had to be reestablished before the extraction well system could be restarted. Extraction system downtime was 2 hours, 50 minutes.
- **August 7, 2015 (unplanned):** The extraction well system was offline from 12:00 a.m. to 12:14 a.m. due to loss of power from the City of Needles. The facility was transferred to backup generator power during this time. Extraction system downtime was 14 minutes.
- **August 7, 2015 (unplanned):** The extraction well system was offline from 5:20 a.m. to 5:32 a.m. to return the facility to power from the City of Needles. Extraction system downtime was 12 minutes.
- **August 10-14, 2015 (planned):** The extraction well system was offline from 6:52 a.m. on August 10, 2015 through 7:48 a.m. on August 14, 2015 and from 10:28 a.m. to 2:54 p.m. on August 14, 2015 for semiannual scheduled maintenance. Extraction system downtime was 4 days, 5 hours and 22 minutes.
- **August 14, 2015 (unplanned):** The extraction well system was offline from 4:42 p.m. to 5:22 p.m. due to loss of power from the City of Needles. Extraction system downtime was 40 minutes.
- **August 17, 2015 (unplanned):** The extraction well system was offline from 4:50 a.m. to 5:02 a.m. due to loss of power from the City of Needles. The facility was transferred to backup generator power during this time. Extraction system downtime was 12 minutes.
- **August 17, 2015 (unplanned):** The extraction well system was offline from 10:40 a.m. to 10:42 a.m. to return the facility to power from the City of Needles. Extraction system downtime was 2 minutes.
- **August 17, 2015 (unplanned):** The extraction well system was offline from 1:38 p.m. to 3:08 p.m. to replace a belt on the air compressor. Extraction system downtime was 1 hour, 30 minutes.

- **August 17, 2015 (unplanned):** The extraction well system was offline from 3:50 p.m. to 4:42 p.m. to replace a leaking seal on the Raw Water Feed Pump (P-200). Extraction system downtime was 52 minutes.
- **August 18, 2015 (unplanned):** The extraction well system was offline from 12:32 p.m. to 1:50 p.m. to replace a CPVC fitting on the polymer skid. Extraction system downtime was 1 hour, 18 minutes.
- **August 21, 2015 (unplanned):** The extraction well system was offline from 11:42 a.m. to 12:02 p.m. for tank management. Extraction system downtime was 20 minutes.
- **August 25, 2015 (unplanned):** The extraction well system was offline from 11:30 a.m. to 1:16 p.m. to repair the Raw Water Feed Pump (P-200). Extraction system downtime was 1 hour, 46 minutes.
- **August 26, 2015 (unplanned):** The extraction well system was offline from 10:38 a.m. to 2:20 p.m. to repair the LCV-603 Reverse Osmosis valve. Extraction system downtime was 3 hours, 42 minutes.
- **August 29, 2015 (unplanned):** The extraction well system was offline from 4:30 p.m. to 6:12 p.m. to repair the treated water pH control acid pump (P-801B). Extraction system downtime was 1 hour, 42 minutes.
- **August 31, 2015 (unplanned):** The extraction well system was offline from 5:58 p.m. to 6:22 p.m. and 7:04 p.m. to 7:46 p.m. to diagnose an HMI connection issue with a pneumatically controlled valve. The valve was replaced with a manual version to maintain plant operation. Extraction system downtime was 1 hour, 6 minutes.

4.3 September 2015

During September 2015, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction well TW-2S was operated on September 1 through September 3, 2015 while extraction well TW-2D was operated on September 2 and September 3, 2015. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 99.3 percent during the September 2015 reporting period.

The IM-3 facility treated approximately 5,833,878 gallons of extracted groundwater during September 2015. The IM-3 facility treated 27,000 gallons of water from injection well backwashing/re-development.

Per consultation with the California Department of Toxic Substances Control, extraction well PE-1 was taken off-line on August 31, 2015 at 9:44 a.m. to evaluate the impact on chromium removal and groundwater gradient flow. PE-1 was brought back online on September 11, 2015 at 7:36 p.m. Daily volumes of groundwater treated through each extraction well (including PE-1) will be provided in the July – December 2015 Semi-annual IM-3 Operation and Maintenance Report due January 15, 2016. Periods of planned and unplanned extraction system down time (that together resulted in approximately 0.7 percent downtime during September 2015) are summarized below.

- **September 1, 2015 (unplanned):** The extraction well system was offline from 7:40 p.m. to 8:48 p.m. due to high level in the Raw Water Storage Tank (T-100). Extraction system downtime was 1 hour, 8 minutes.
- **September 2, 2015 (planned):** The extraction well system was offline from 12:28 p.m. to 12:36 p.m. and 12:50 p.m. to 12:56 p.m. due to testing of critical alarms and the leak detection system. Extraction system downtime was 14 minutes.
- **September 10, 2015 (unplanned):** The extraction well system was offline from 5:16 p.m. to 6:20 p.m. due to loss of power from the City of Needles. The facility was transferred to backup generator power during this time. Extraction system downtime was 1 hour, 4 minutes.

- **September 10, 2015 (unplanned):** The extraction well system was offline from 10:58 p.m. to 11:16 p.m. to return the facility to power from the City of Needles. Extraction system downtime was 18 minutes.
- **September 11, 2015 (planned):** The extraction well system was offline from 7:28 p.m. to 7:36 p.m. to bring extraction well PE-1 back online. Extraction system downtime 8 minutes.
- **September 14, 2015 (unplanned):** The extraction well system was offline from 10:02 a.m. to 11:08 a.m. due to a failure of the microfilter system. Extraction system downtime was 1 hour, 6 minutes.
- **September 21, 2015 (unplanned):** The extraction well system was offline from 1:36 p.m. to 1:48 p.m. for maintenance of the extraction well electrical boxes at the IM-2 area. Extraction system downtime was 12 minutes.
- **September 29, 2015 (unplanned):** The extraction well system was offline from 9:38 a.m. to 10:34 a.m. to change out the microfilter modules. Extraction system downtime was 56 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 Third Quarter 2015, 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.

SECTION 6

Analytical Results

Laboratory reports for samples collected in the Third Quarter 2015 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.

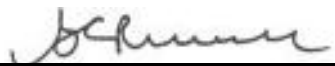
In addition, no incidents of non-compliance were identified during the reporting period. No events that caused an immediate or potential threat to human health or the environment, or new releases of hazardous waste or hazardous waste constituents, or new solid waste management units were identified during 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: October 15, 2015

Tables

TABLE 1

Sampling Station Descriptions*Third Quarter 2015 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*Third Quarter 2015 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)
July 2015 Average Monthly Flowrate	131.15	128.74	1.22
August 2015 Average Monthly Flowrate	114.76	112.48	0.59
September 2015 Average Monthly Flowrate	135.04	133.15	1.37

Notes:

gpm: gallons per minute

^a Extraction wells TW-2D, TW-2S, TW-3D and PE-1 were operated during the Third Quarter 2015.^b The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during the Third Quarter 2015 is approximately 0.90 percent.

TABLE 3

Sample Collection Dates*Third Quarter 2015 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System*

Parameter	Sample Collection Dates	Results
Influent	July 7, 2015	See Table 4
	August 4, 2015	
	September 1, 2015	
Effluent	July 7, 2015	See Table 5
	August 4, 2015	
	September 1, 2015	
Reverse Osmosis Concentrate	July 7, 2015	See Table 6
Sludge ^a	October 6, 2015	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
Third Quarter 2015 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Monthly										Quarterly															
Sample ID	Analytes Units ^b MDL	Date	TDS	Turbidity	Specific Conductance	Field ^c	Chromium	Hexavalent Chromium	Ammonia (as N)			Arsenic			Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate/Nitrite (as N)		Sulfate	Iron	Zinc
			mg/L	NTU	µmhos/cm	pH	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/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			

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 6

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Reverse Osmosis Concentrate Monitoring Results ^a
Third Quarter 2015 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Quarterly																							
Sample ID	Analytes Units ^b MDL	TDS mg/L 200	Specific Conductance µmhos/cm 0.100		Field ^c pH pH units ---		Hexavalent Chromium mg/L 0.000086		Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
							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
SC-701-WDR-529	7/7/2015	20000	30000	8.2	0.00340 J	ND (0.0010)	ND (0.0120)	0.000500	0.0600	ND (0.0500)	ND (0.0120)	ND (0.00050)	0.00150	11.0	ND (0.100)	0.120	ND (0.00020)	0.0110	0.0200	ND (0.0120)	ND (0.0500)	ND (0.0100)	ND (0.0100)	0.0100	0.0100
	RL	200	0.100	---	0.0010	0.0010	0.0120	0.00010	0.0250	0.0500	0.0120	0.00050	0.0010	5.00	0.100	0.0120	0.00020	0.0010	0.0025	0.0120	0.0500	0.0010	0.0010	0.0100	0.0100

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
Third Quarter 2015 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Quarterly																		
Sample ID	Analytes Units ^b MDL ^c Date	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		mg/kg 0.200	mg/kg 0.160	mg/kg 0.210	mg/kg 0.160	mg/kg 0.0240	mg/kg 0.0500	mg/kg 0.160	mg/kg 0.0780	mg/kg 0.120	mg/kg 0.740	mg/kg 0.110	mg/kg 0.0560	mg/kg 0.0095	mg/kg 0.0400	mg/kg 0.210	mg/kg 0.0470	mg/kg 0.150	mg/kg 0.240	mg/kg 0.260
Phase Separator-Sludge-529	10/6/2015	3400	74.0	ND (6.20)	14.0	58.0	ND (3.10)	ND (3.10)	6.60	150 J	28.0	ND (3.10)	9.00	ND (0.310)	39.0	ND (3.10)	ND (3.10)J	ND (6.20)	33.0	18.0
RL		3.10	3.10	6.20	3.10	3.10	3.10	3.10	3.10	6.20	3.10	3.10	3.10	0.310	3.10	3.10	3.10	6.20	3.10	3.10

NOTES:

- (---) = not required by the ARARs Monitoring and Reporting Program
J = concentration or reporting limits estimated by laboratory or validation
mg/kg = milligrams per kilogram
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.
^c 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 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Third Quarter 2015 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-529	Ryan Phelps	7/7/2015	1:05:00 PM	ASSET	EPA 120.1	SC	7/8/2015	Lilia Ramit
					ASSET	EPA 200.7	AL	7/9/2015	Hanah Glodoviza
					ASSET	EPA 200.7	B	7/9/2015	Hanah Glodoviza
					ASSET	EPA 200.7	FE	7/9/2015	Hanah Glodoviza
					ASSET	EPA 200.8	AS	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	BA	7/14/2015	Claire Ignacio
					ASSET	EPA 200.8	CR	7/15/2015	Claire Ignacio
					ASSET	EPA 200.8	CU	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	MN	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	MO	7/14/2015	Claire Ignacio
					ASSET	EPA 200.8	NI	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	PB	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	SB	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	ZN	7/14/2015	Claire Ignacio
					ASSET	EPA 218.6	CR6	7/9/2015	Ryan Balilu
					ASSET	EPA 300.0	FL	7/8/2015	Quennie Manintim
					ASSET	EPA 300.0	SO4	7/8/2015	Quennie Manintim
					FIELD	HACH	PH	7/7/2015	Ryan Phelps
					ASSET	SM 2540C	TDS	7/8/2015	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	7/16/2015	Ryan Balilu
					ASSET	SM2130B	TRB	7/8/2015	Lilia Ramit
					TLI	SM4500NH3D	NH3N	7/21/2015	Alex Luna
SC-100B	SC-100B-WDR-530	Ryan Phelps	8/4/2015	9:20:00 AM	ASSET	EPA 120.1	SC	8/5/2015	Lilia Ramit
					ASSET	EPA 200.8	CR	8/6/2015	Claire Ignacio
					ASSET	EPA 200.8	MN	8/18/2015	Claire Ignacio
					ASSET	EPA 218.6	CR6	8/7/2015	Ryan Balilu
					FIELD	HACH	PH	8/4/2015	Ryan Phelps
					ASSET	SM 2540C	TDS	8/5/2015	Lilia Ramit
					ASSET	SM2130B	TRB	8/5/2015	Lilia Ramit
SC-100B	SC-100B-WDR-531	Ryan Phelps	9/1/2015	12:30:00 PM	ASSET	EPA 120.1	SC	9/2/2015	Lilia Ramit
					ASSET	EPA 200.8	CR	9/4/2015	Claire Ignacio
					ASSET	EPA 200.8	MN	9/4/2015	Claire Ignacio
					ASSET	EPA 218.6	CR6	9/4/2015	Ryan Balilu
					FIELD	HACH	PH	9/1/2015	Ron Phelps
					ASSET	SM 2540C	TDS	9/2/2015	Lilia Ramit

TABLE 8

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

Third Quarter 2015 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-531	Ryan Phelps	9/1/2015	12:30:00 PM	ASSET	SM2130B	TRB	9/2/2015	Lilia Ramit
SC-700B	SC-700B-WDR-529	Ryan Phelps	7/7/2015	1:00:00 PM	ASSET	EPA 120.1	SC	7/8/2015	Lilia Ramit
					ASSET	EPA 200.7	AL	7/9/2015	Hannah Glodoviza
					ASSET	EPA 200.7	B	7/9/2015	Hannah Glodoviza
					ASSET	EPA 200.7	FE	7/9/2015	Hannah Glodoviza
					ASSET	EPA 200.8	AS	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	BA	7/14/2015	Claire Ignacio
					ASSET	EPA 200.8	CR	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	CU	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	MN	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	MO	7/14/2015	Claire Ignacio
					ASSET	EPA 200.8	NI	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	PB	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	SB	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	ZN	7/14/2015	Claire Ignacio
					ASSET	EPA 218.6	CR6	7/9/2015	Ryan Balilu
					ASSET	EPA 300.0	FL	7/8/2015	Quennie Manintim
					ASSET	EPA 300.0	SO4	7/8/2015	Quennie Manintim
					FIELD	HACH	PH	7/7/2015	Ryan Phelps
					ASSET	SM 2540C	TDS	7/8/2015	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	7/16/2015	Ryan Balilu
					ASSET	SM2130B	TRB	7/8/2015	Lilia Ramit
					TLI	SM4500NH3D	NH3N	7/21/2015	Alex Luna
SC-700B	SC-700B-WDR-530	Ryan Phelps	8/4/2015	9:30:00 AM	ASSET	EPA 120.1	SC	8/5/2015	Lilia Ramit
					ASSET	EPA 200.7	AL	8/6/2015	Claire Ignacio
					ASSET	EPA 200.7	B	8/6/2015	Claire Ignacio
					ASSET	EPA 200.7	FE	8/6/2015	Claire Ignacio
					ASSET	EPA 200.8	AS	8/6/2015	Claire Ignacio
					ASSET	EPA 200.8	BA	8/13/2015	Claire Ignacio
					ASSET	EPA 200.8	CR	8/6/2015	Claire Ignacio
					ASSET	EPA 200.8	CU	8/12/2015	Claire Ignacio
					ASSET	EPA 200.8	MN	8/18/2015	Claire Ignacio
					ASSET	EPA 200.8	MO	8/6/2015	Claire Ignacio
					ASSET	EPA 200.8	NI	8/6/2015	Claire Ignacio
					ASSET	EPA 200.8	PB	8/6/2015	Claire Ignacio

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Third Quarter 2015 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-530	Ryan Phelps	8/4/2015	9:30:00 AM	ASSET	EPA 200.8	SB	8/6/2015	Claire Ignacio
					ASSET	EPA 200.8	ZN	8/6/2015	Claire Ignacio
					ASSET	EPA 218.6	CR6	8/7/2015	Ryan Balilu
					ASSET	EPA 300.0	FL	8/11/2015	Quennie Manintim
					ASSET	EPA 300.0	SO4	8/11/2015	Quennie Manintim
					FIELD	HACH	PH	8/4/2015	Ryan Phelps
					ASSET	SM 2540C	TDS	8/5/2015	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	8/17/2015	Ryan Balilu
					ASSET	SM2130B	TRB	8/5/2015	Lilia Ramit
					TLI	SM4500NH3D	NH3N	8/10/2015	Alex Luna
					ASSET	EPA 120.1	SC	9/2/2015	Lilia Ramit
					ASSET	EPA 200.7	AL	9/3/2015	Claire Ignacio
					ASSET	EPA 200.7	B	9/3/2015	Claire Ignacio
SC-700B	SC-700B-WDR-531	Ryan Phelps	9/1/2015	12:30:00 PM	ASSET	EPA 200.7	FE	9/3/2015	Claire Ignacio
					ASSET	EPA 200.8	AS	9/14/2015	Claire Ignacio
					ASSET	EPA 200.8	BA	9/4/2015	Claire Ignacio
					ASSET	EPA 200.8	CR	9/14/2015	Claire Ignacio
					ASSET	EPA 200.8	CU	9/9/2015	Claire Ignacio
					ASSET	EPA 200.8	MN	9/4/2015	Claire Ignacio
					ASSET	EPA 200.8	MO	9/4/2015	Claire Ignacio
					ASSET	EPA 200.8	NI	9/4/2015	Claire Ignacio
					ASSET	EPA 200.8	PB	9/4/2015	Claire Ignacio
					ASSET	EPA 200.8	SB	9/4/2015	Claire Ignacio
					ASSET	EPA 200.8	ZN	9/4/2015	Claire Ignacio
					ASSET	EPA 218.6	CR6	9/4/2015	Ryan Balilu
					ASSET	EPA 300.0	FL	9/2/2015	Quennie Manintim
SC-701	SC-701-WDR-529	Ryan Phelps	7/7/2015	1:03:00 PM	ASSET	EPA 300.0	SO4	9/2/2015	Quennie Manintim
					FIELD	HACH	PH	9/1/2015	Ron Phelps
					ASSET	SM 2540C	TDS	9/2/2015	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	9/11/2015	Ryan Balilu
					ASSET	SM2130B	TRB	9/2/2015	Lilia Ramit
					TLI	SM4500NH3D	NH3N	9/15/2015	Alex Luna
					ASSET	EPA 120.1	SC	7/8/2015	Lilia Ramit
					ASSET	EPA 200.8	AG	7/14/2015	Claire Ignacio
					ASSET	EPA 200.8	AS	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	AS	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	AS	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	AS	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	AS	7/9/2015	Claire Ignacio

TABLE 8

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

Third Quarter 2015 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-529	Ryan Phelps	7/7/2015	1:03:00 PM	ASSET	EPA 200.8	BA	7/14/2015	Claire Ignacio
					ASSET	EPA 200.8	BE	7/15/2015	Claire Ignacio
					ASSET	EPA 200.8	CD	7/14/2015	Claire Ignacio
					ASSET	EPA 200.8	CO	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	CR	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	CU	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	MN	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	MO	7/14/2015	Claire Ignacio
					ASSET	EPA 200.8	NI	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	PB	7/15/2015	Claire Ignacio
					ASSET	EPA 200.8	SB	7/14/2015	Claire Ignacio
					ASSET	EPA 200.8	SE	7/14/2015	Claire Ignacio
					ASSET	EPA 200.8	TL	7/15/2015	Claire Ignacio
					ASSET	EPA 200.8	V	7/9/2015	Claire Ignacio
					ASSET	EPA 200.8	ZN	7/14/2015	Claire Ignacio
					ASSET	EPA 218.6	CR6	7/9/2015	Ryan Balilu
					ASSET	EPA 245.1	HG	7/9/2015	Claire Ignacio
					ASSET	EPA 300.0	FL	7/8/2015	Quennie Manintim
					FIELD	HACH	PH	7/7/2015	Ryan Phelps
					ASSET	SM 2540C	TDS	7/8/2015	Lilia Ramit
Phase Separator	Phase Separator-Sludge-529	Ryan Phelps	10/6/2015	2:00:00 PM	ASSET	EPA 300.0	FL	10/8/2015	Quennie Manintim
					ASSET	EPA 6010B	AG	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	AS	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	BA	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	BE	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	CD	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	CO	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	CR	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	CU	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	MN	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	MO	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	NI	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	PB	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	SB	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	SE	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	TL	10/8/2015	Claire Ignacio

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Third Quarter 2015 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-529	Ryan Phelps	10/6/2015	2:00:00 PM	ASSET	EPA 6010B	V	10/8/2015	Claire Ignacio
					ASSET	EPA 6010B	ZN	10/8/2015	Claire Ignacio
					ASSET	EPA 7471A	HG	10/9/2015	Claire Ignacio
					ASSET	SW 7199	CR6	10/8/2015	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).

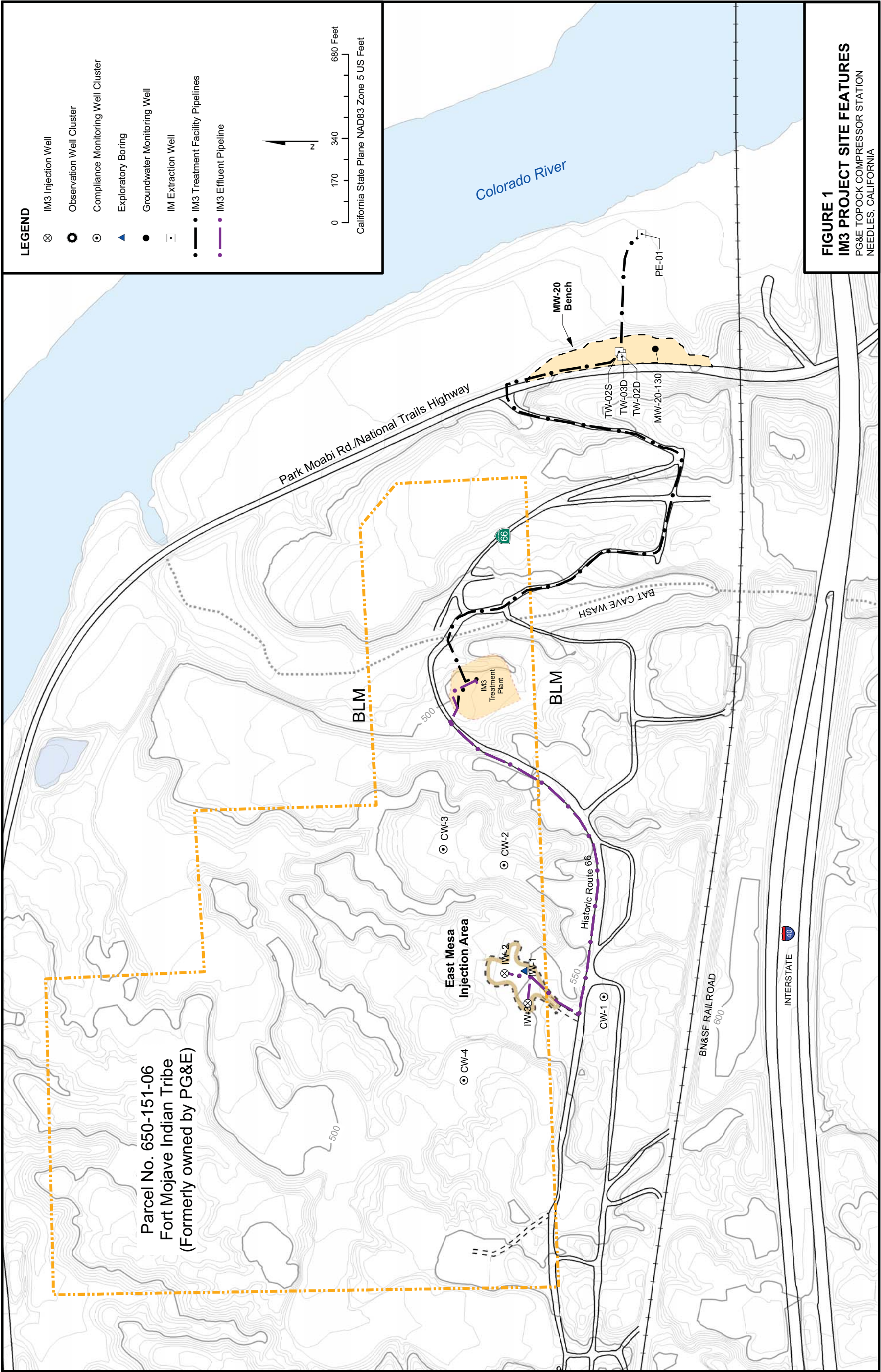
SC-100B = Sampling location for all influent samples is tap on pipe from extraction wells into tank T-100 (see attached P&ID TP-PR-10-10-04).

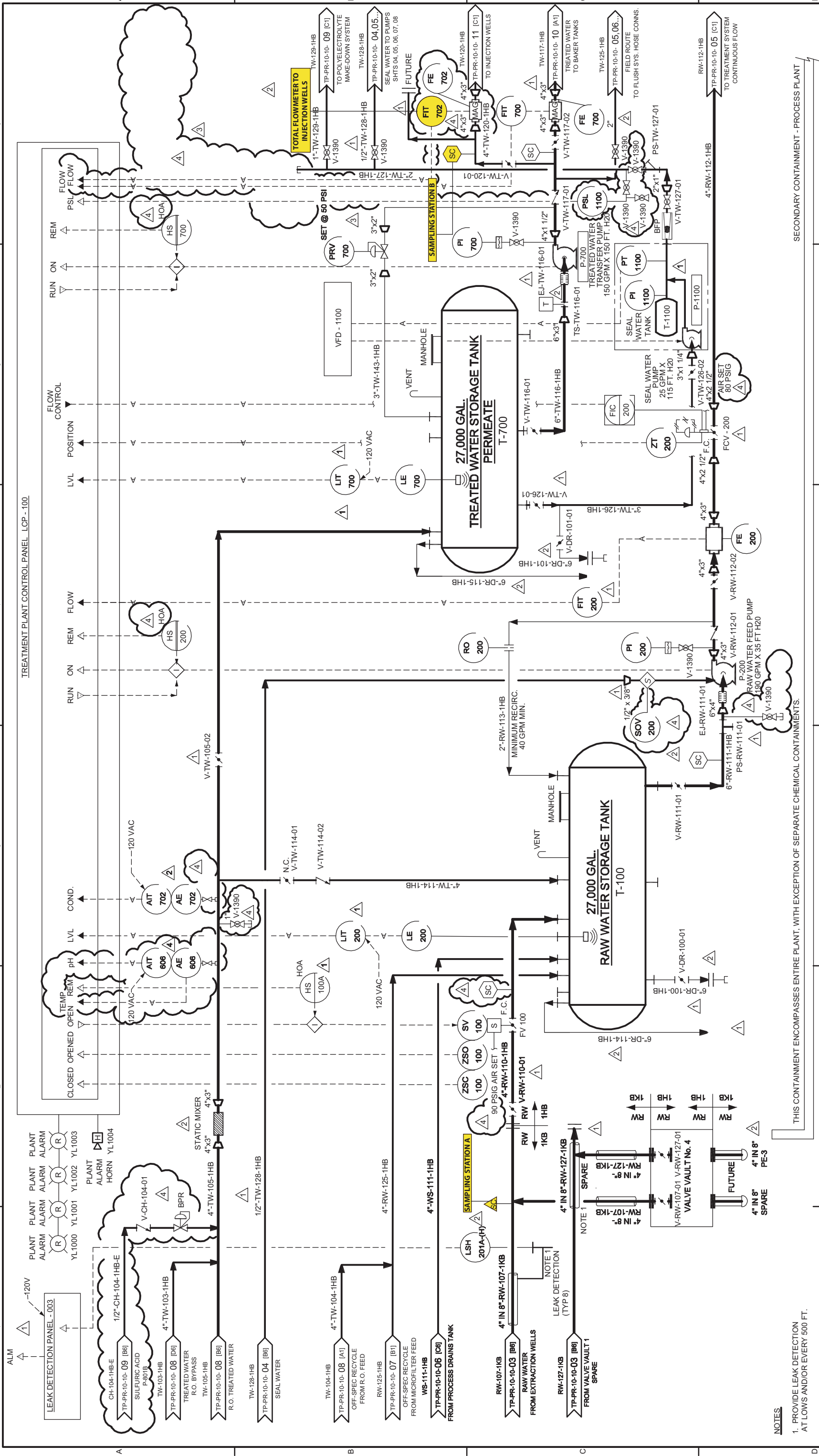
SC-701 = Sampling location for all reverse osmosis samples is tap on pipe T-701 (see attached P&ID PR-10-04).

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





NOTES

1. PROVIDE LEAK DETECTION
AT LOWS AND/OR EVERY 500 FT.

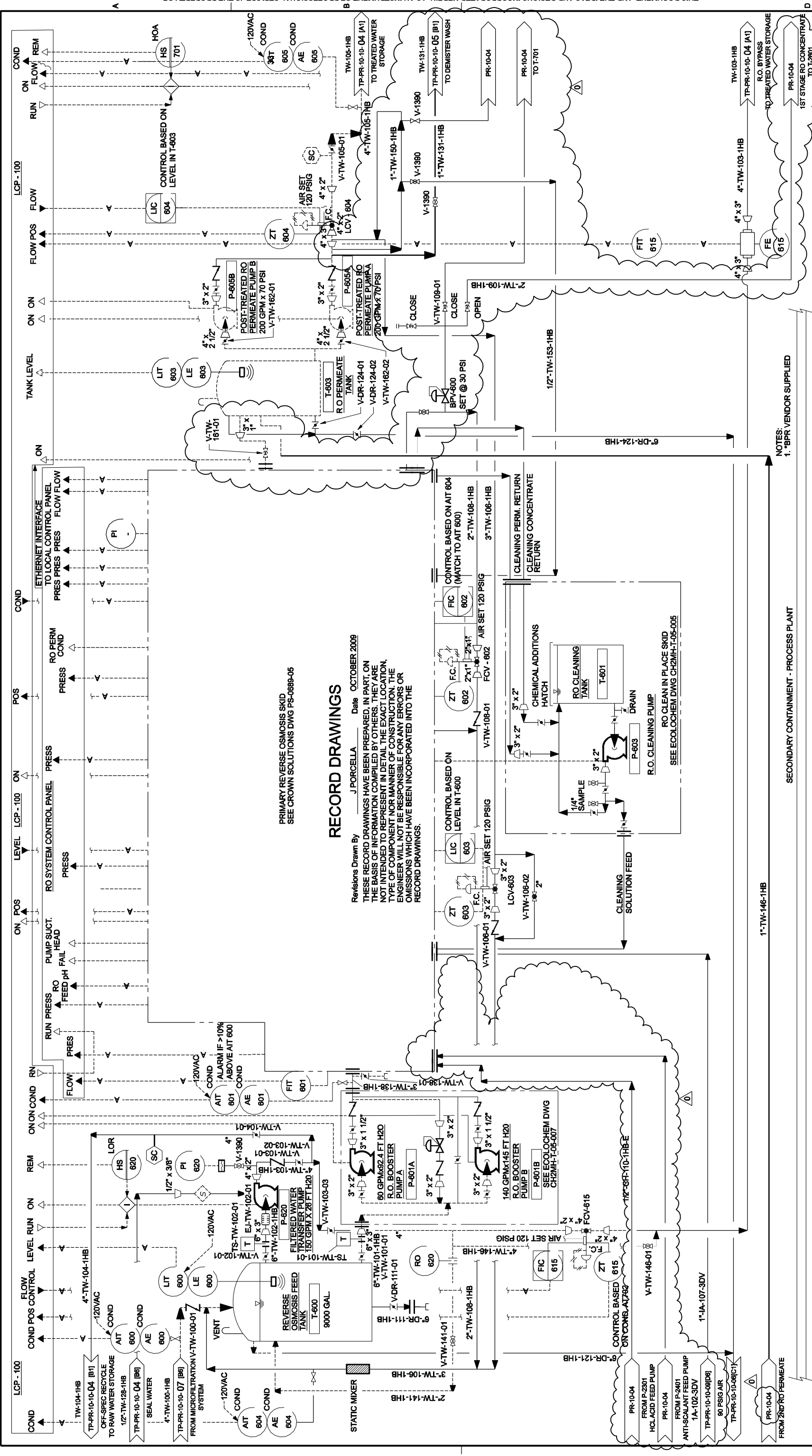
[illegible]

BAR IS ONE INCH

FILENAME: tppr101004.dwg

PLOT DATE: 21-SEP-2005

PLOT TIME:



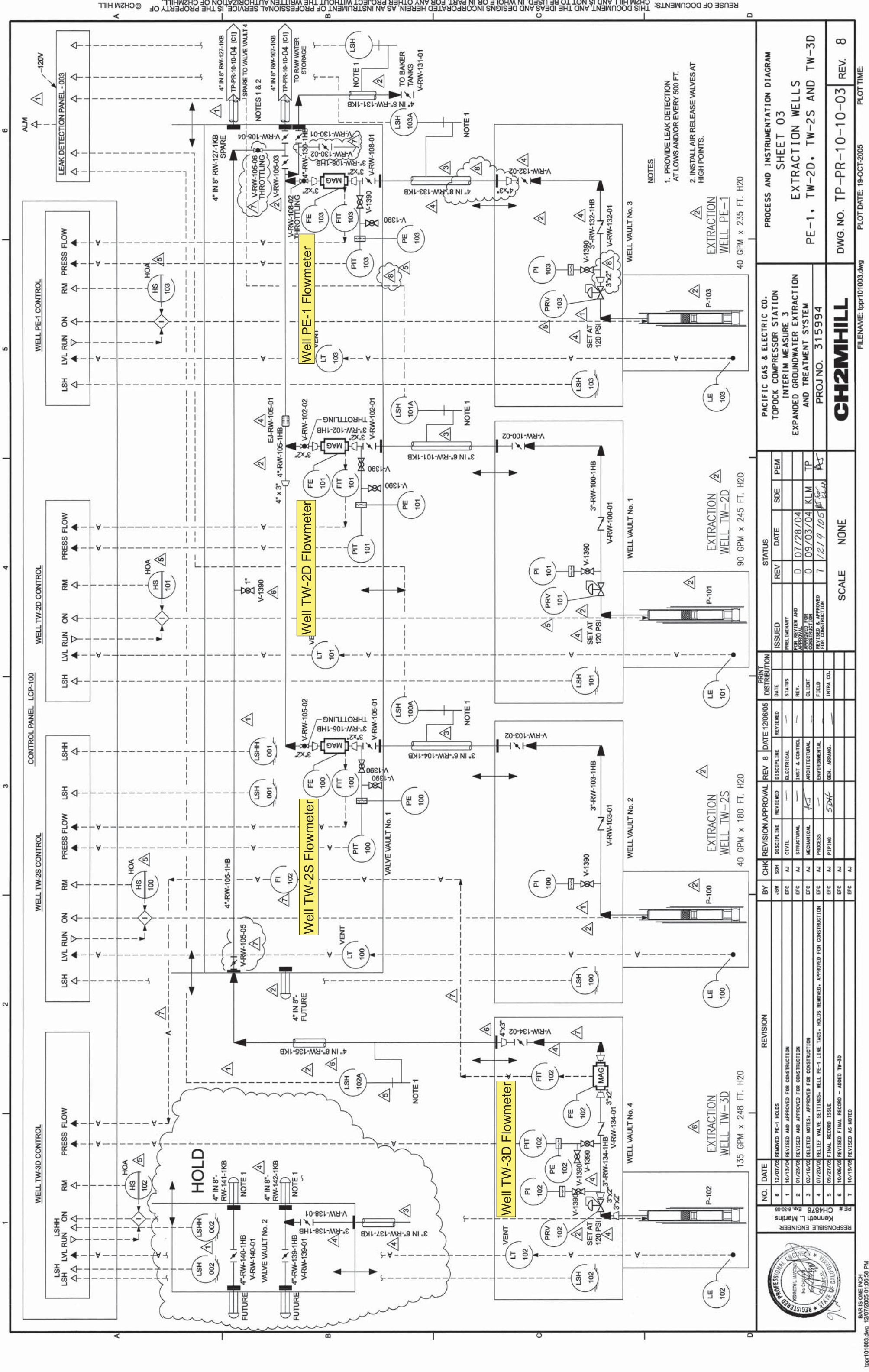
PRIMARY REVERSE OSMOSIS SKID
SEE CROWN SOLUTIONS DWG PS-0889-05

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.

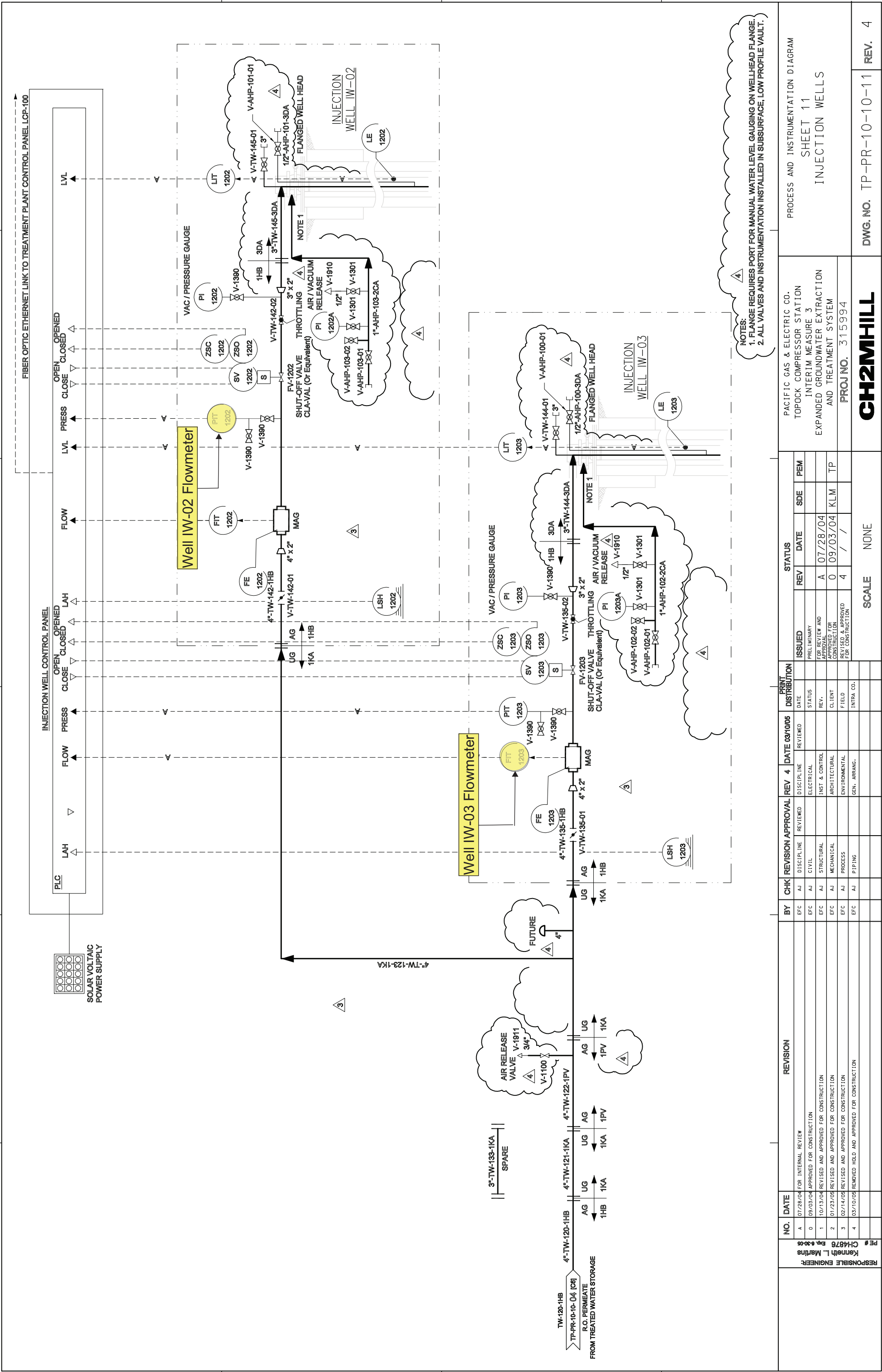
NOTES:
1. *BPR VENDOR SUPPLIED

NO.				DATE				REVISION			
A	2/12/09	INTERNAL REVIEW									
B	2/12/09	CLIENT REVIEW									
C	4/01/09	FOR REVIEW AND APPROVAL									
D	11/11/09	FINAL RECORD ISSUE									
RESPONSIBLE ENGINEER				DATE				REVISION			
John Porcella				2/12/09				1			
C70145				2/12/09				2			
ON 04-01-2009				2/12/09				3			
CALIFORNIA PE NO. C70145				2/12/09				4			
AND SIGNED BY:				2/12/09				5			
JOHN PORCELLA				2/12/09				6			
ORIGINAL STAMPED				2/12/09				7			
**				2/12/09				8			
REVISION				2/12/09				9			
BY				2/12/09				10			
CHK				2/12/09				11			
REVISION APPROVAL				2/12/09				12			
REV 0				2/12/09				13			
DATE				2/12/09				14			
PRINT DISTRIBUTION				2/12/09				15			
ISSUED				2/12/09				16			
REV				2/12/09				17			
DATE				2/12/09				18			
SDE				2/12/09				19			
PEM				2/12/09				20			
STATUS				2/12/09				21			
PRELIMINARY				2/12/09				22			
FOR REVIEW AND APPROVAL				2/12/09				23			
APPROVAL FOR CONSTRUCTION				2/12/09				24			
REVISED & APPROVED FOR CONSTRUCTION				2/12/09				25			
FIELD				2/12/09				26			
INTRA CO.				2/12/09				27			
SCALE				NONE				28			
PROJ NO.				362032				29			
DWG. NO.				PR-10-03				30			
REV.				0				31			
PROCESS AND INSTRUMENTATION DIAGRAM				REVERSE OSMOSIS SYSTEM				32			
SHEET ONE OF TWO				33				34			
PACIFIC GAS & ELECTRIC CO.				35				36			
TOPOCK COMPRESSOR STATION				37				38			
INTERIM MEASURE 3				39				40			
PLANT PERFORMANCE IMPROVEMENTS				41				42			



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

RESPONSIBLE ENGINEER		REVISION		REVISION APPROVAL		PRINT DISTRIBUTION		STATUS		PACIFIC GAS & ELECTRIC CO.		PROCESS AND INSTRUMENTATION DIAGRAM	
Kenneth L. Martins		CH4876 Exp. 6-30-05		—		—		—		TOPOCK COMPRESSOR STATION		SHEET 03	
—		—		—		—		—		EXPANDED GROUNDWATER EXTRACTION		EXTRACTION WELLS	
—		—		—		—		—		AND TREATMENT SYSTEM		PE-1, TW-2D, TW-2S AND TW-3D	
—		—		—		—		—		PROJ. NO. 315994		DWG. NO. TP-PR-10-10-03	
—		—		—		—		—		SCALE NONE		REV. 8	



Appendix A
Third Quarter 2015 Laboratory Analytical Reports

July 23, 2015

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.: N016188

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

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on July 07, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,



Glen Gesmundo
QA Manager

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



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3151 W. Post Rd., Las Vegas, NV 89118
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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N016188

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 N016188-003 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.

Because the results for total chromium (3.4 ug/L) and hexavalent chromium (0 ug/L) for sample N016188-003 (SC-701-WDR-529) are discrepant, sample from both the total chromium and hexavalent chromium containers were redigested and analyzed for total chromium. The results from the redigested samples were 5.1 and 7.0 ug/L, respectively. Since these data confirmed the original result for total chromium, the original result is reported.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N016188-003 due to matrix interference. Sample was analyzed at lower dilution however matrix spike and retention time criteria was not met indicating possible matrix interference. Sample was reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.



ASSET Laboratories

Date: 22-Jul-15

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N016188
Contract No: IM3PLANT-AR

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N016188-001A	SC-100B-WDR-529	Water	7/7/2015 1:05:00 PM	7/7/2015	7/22/2015
N016188-001B	SC-100B-WDR-529	Water	7/7/2015 1:05:00 PM	7/7/2015	7/22/2015
N016188-001C	SC-100B-WDR-529	Water	7/7/2015 1:05:00 PM	7/7/2015	7/22/2015
N016188-001D	SC-100B-WDR-529	Water	7/7/2015 1:05:00 PM	7/7/2015	7/22/2015
N016188-001E	SC-100B-WDR-529	Water	7/7/2015 1:05:00 PM	7/7/2015	7/22/2015
N016188-002A	SC-700B-WDR-529	Water	7/7/2015 1:00:00 PM	7/7/2015	7/22/2015
N016188-002B	SC-700B-WDR-529	Water	7/7/2015 1:00:00 PM	7/7/2015	7/22/2015
N016188-002C	SC-700B-WDR-529	Water	7/7/2015 1:00:00 PM	7/7/2015	7/22/2015
N016188-002D	SC-700B-WDR-529	Water	7/7/2015 1:00:00 PM	7/7/2015	7/22/2015
N016188-002E	SC-700B-WDR-529	Water	7/7/2015 1:00:00 PM	7/7/2015	7/22/2015
N016188-003A	SC-701-WDR-529	Water	7/7/2015 1:03:00 PM	7/7/2015	7/22/2015
N016188-003B	SC-701-WDR-529	Water	7/7/2015 1:03:00 PM	7/7/2015	7/22/2015
N016188-003C	SC-701-WDR-529	Water	7/7/2015 1:03:00 PM	7/7/2015	7/22/2015



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-001

Client Sample ID: SC-100B-WDR-529
Collection Date: 7/7/2015 1:05:00 PM
Matrix: WATER

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

SPECIFIC CONDUCTANCE
EPA 120.1

RunID: WETCHEM_150708B	QC Batch: R101084			PrepDate		Analyst: LR
Specific Conductance	6800	0.10	0.10	umhos/cm	1	7/8/2015 11:30 AM

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



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ASSET Laboratories**ANALYTICAL RESULTS**

Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-002

Client Sample ID: SC-700B-WDR-529
Collection Date: 7/7/2015 1:00:00 PM
Matrix: WATER

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

SPECIFIC CONDUCTANCE**EPA 120.1**

RunID: WETCHEM_150708B	QC Batch: R101084			PrepDate		Analyst: LR
Specific Conductance	6700	0.10	0.10	umhos/cm	1	7/8/2015 11:30 AM

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



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ASSET Laboratories**ANALYTICAL RESULTS**

Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-003

Client Sample ID: SC-701-WDR-529
Collection Date: 7/7/2015 1:03:00 PM
Matrix: WATER

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

SPECIFIC CONDUCTANCE**EPA 120.1**

RunID: WETCHEM_150708B	QC Batch: R101084			PrepDate		Analyst: LR
Specific Conductance	30000	0.10	0.10	umhos/cm	1	7/8/2015 11:30 AM

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



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ASSET Laboratories

Date: 22-Jul-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL
Work Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 120.1_WPGE

Sample ID	N016187-002A	DUP	SampType: DUP	TestCode: 120.1_WPGE	Units: umhos/cm	Prep Date:	RunNo: 101084					
Client ID:	ZZZZZZ		Batch ID: R101084	TestNo: EPA 120.1		Analysis Date: 7/8/2015	SeqNo: 2034394					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016188-003A	DUP	SampType: DUP	TestCode: 120.1_WPGE	Units: umhos/cm	Prep Date:	RunNo: 101084					
Client ID:	ZZZZZZ		Batch ID: R101084	TestNo: EPA 120.1		Analysis Date: 7/8/2015	SeqNo: 2034399					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance		30100.000	0.10						30000	0.333		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: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-001

Client Sample ID: SC-100B-WDR-529
Collection Date: 7/7/2015 1:05:00 PM
Matrix: WATER

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

TOTAL FILTERABLE RESIDUE**SM2540C**

RunID: WETCHEM_150708D	QC Batch: 50848			PrepDate	7/8/2015	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4100	50	50	mg/L	1	7/8/2015 02:17 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-002

Client Sample ID: SC-700B-WDR-529
Collection Date: 7/7/2015 1:00:00 PM
Matrix: WATER

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

TOTAL FILTERABLE RESIDUE
SM2540C

RunID: WETCHEM_150708D	QC Batch: 50848			PrepDate	7/8/2015	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4100	50	50	mg/L	1	7/8/2015 02:17 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-003

Client Sample ID: SC-701-WDR-529
Collection Date: 7/7/2015 1:03:00 PM
Matrix: WATER

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

TOTAL FILTERABLE RESIDUE
SM2540C

RunID: WETCHEM_150708D	QC Batch: 50848				PrepDate	7/8/2015	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	20000	200	200		mg/L	1	7/8/2015 02:17 PM

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



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ASSET Laboratories

Date: 22-Jul-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N016188

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

TestCode: 160.1_2540C_W

Sample ID	MB-50848	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	7/8/2015	RunNo:	101093
Client ID:	PBW	Batch ID:	50848	TestNo:	SM2540C			Analysis Date:	7/8/2015	SeqNo:	2034827
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-50848	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	7/8/2015	RunNo:	101093
Client ID:	LCSW	Batch ID:	50848	TestNo:	SM2540C			Analysis Date:	7/8/2015	SeqNo:	2034828
AnalYTE		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 988.000 10 1000 0 98.8 80 120

Sample ID	N016188-003A-DUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	7/8/2015	RunNo:	101093
Client ID:	ZZZZZZ	Batch ID:	50848	TestNo:	SM2540C			Analysis Date:	7/8/2015	SeqNo:	2034836
AnalYTE		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 20720.000 200 20200 2.54 5

Qualifiers:

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-001

Client Sample ID: SC-100B-WDR-529
Collection Date: 7/7/2015 1:05:00 PM
Matrix: WATER

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

TOTAL METALS BY ICP
EPA 200.7

RunID: ICP2_150709B	QC Batch: 50855	PrepDate	7/9/2015	Analyst: HG
Aluminum	ND 12	50	µg/L	1 7/9/2015 12:42 PM
Boron	950 11	100	µg/L	1 7/9/2015 12:42 PM
Iron	ND 17	20	µg/L	1 7/9/2015 12:42 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: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-002

Client Sample ID: SC-700B-WDR-529
Collection Date: 7/7/2015 1:00:00 PM
Matrix: WATER

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

RunID: ICP2_150709B	QC Batch: 50855	PrepDate	7/9/2015	Analyst: HG
Aluminum	ND 12	50	µg/L	1 7/9/2015 12:48 PM
Boron	880 11	100	µg/L	1 7/9/2015 12:48 PM
Iron	ND 17	20	µg/L	1 7/9/2015 12:48 PM

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



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Date: 22-Jul-15

CLIENT: CH2M HILL

Work Order: N016188

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WPGEPBPB

Sample ID	MB-50855	SampType:	MBLK	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	7/9/2015	RunNo:	101104
Client ID:	PBW	Batch ID:	50855	TestNo:	EPA 200.7			Analysis Date:	7/9/2015	SeqNo:	2035083
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	LCS-50855	SampType:	LCS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	7/9/2015	RunNo:	101104
Client ID:	LCSW	Batch ID:	50855	TestNo:	EPA 200.7			Analysis Date:	7/9/2015	SeqNo:	2035084
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Aluminum	10125.536	50	10000	0	101	85	115
Boron	4830.866	100	5000	0	96.6	85	115
Iron	108.561	20	100.0	0	109	85	115

Sample ID	N016188-002E-MS	SampType:	MS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	7/9/2015	RunNo:	101104
Client ID:	ZZZZZZ	Batch ID:	50855	TestNo:	EPA 200.7			Analysis Date:	7/9/2015	SeqNo:	2035091
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Aluminum	10736.997	50	10000	0	107	75	125
Boron	5832.260	100	5000	883.5	99.0	75	125
Iron	100.283	20	100.0	0	100	75	125

Sample ID	N016188-002E-MSD	SampType:	MSD	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	7/9/2015	RunNo:	101104
Client ID:	ZZZZZZ	Batch ID:	50855	TestNo:	EPA 200.7			Analysis Date:	7/9/2015	SeqNo:	2035092
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Aluminum	10733.898	50	10000	0	107	75	125	10740	0.0289	20
Boron	5830.875	100	5000	883.5	98.9	75	125	5832	0.0237	20
Iron	99.944	20	100.0	0	99.9	75	125	100.3	0.338	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: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-001

Client Sample ID: SC-100B-WDR-529
Collection Date: 7/7/2015 1:05:00 PM
Matrix: WATER

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

RunID: ICP7_150709A	QC Batch: 50841	PrepDate	7/8/2015	Analyst: CEI		
Antimony	ND	0.026	0.50	µg/L	1	7/9/2015 01:56 PM
Arsenic	3.1	0.016	0.10	µg/L	1	7/9/2015 01:56 PM
Barium	24	0.072	1.0	µg/L	1	7/14/2015 04:27 PM
Copper	ND	0.26	1.0	µg/L	1	7/9/2015 01:56 PM
Lead	ND	0.053	1.0	µg/L	1	7/9/2015 01:56 PM
Manganese	ND	0.023	0.50	µg/L	1	7/9/2015 01:56 PM
Molybdenum	20	0.029	0.50	µg/L	1	7/14/2015 04:27 PM
Nickel	ND	0.038	1.0	µg/L	1	7/9/2015 01:56 PM
Zinc	ND	0.039	10	µg/L	1	7/14/2015 04:27 PM

Qualifiers: B Analyte detected in the associated Method Blank
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 DO Surrogate Diluted Out
 E Value above quantitation range
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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-002

Client Sample ID: SC-700B-WDR-529
Collection Date: 7/7/2015 1:00:00 PM
Matrix: WATER

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

RunID: ICP7_150709A	QC Batch: 50841	PrepDate	7/8/2015	Analyst: CEI		
Antimony	ND	0.026	0.50	µg/L	1	7/9/2015 02:02 PM
Arsenic	ND	0.016	0.10	µg/L	1	7/9/2015 02:02 PM
Barium	9.8	0.072	1.0	µg/L	1	7/14/2015 04:33 PM
Copper	ND	0.26	1.0	µg/L	1	7/9/2015 02:02 PM
Lead	ND	0.053	1.0	µg/L	1	7/9/2015 02:02 PM
Manganese	ND	0.023	0.50	µg/L	1	7/9/2015 02:02 PM
Molybdenum	18	0.029	0.50	µg/L	1	7/14/2015 04:33 PM
Nickel	1.6	0.038	1.0	µg/L	1	7/9/2015 02:02 PM
Zinc	ND	0.039	10	µg/L	1	7/14/2015 04:33 PM

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



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ANALYTICAL RESULTS

Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-003

Client Sample ID: SC-701-WDR-529
Collection Date: 7/7/2015 1:03:00 PM
Matrix: WATER

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

RunID: ICP7_150714B	QC Batch: 50841	PrepDate	7/8/2015	Analyst: CEI		
Antimony	ND	0.66	12	µg/L	25	7/14/2015 04:49 PM
Arsenic	0.50	0.016	0.10	µg/L	1	7/9/2015 02:07 PM
Barium	60	1.8	25	µg/L	25	7/14/2015 04:49 PM
Beryllium	ND	2.6	50	µg/L	100	7/15/2015 03:53 PM
Cadmium	ND	0.24	12	µg/L	25	7/14/2015 04:49 PM
Cobalt	ND	0.013	0.50	µg/L	1	7/9/2015 02:07 PM
Copper	1.5	0.26	1.0	µg/L	1	7/9/2015 02:07 PM
Lead	ND	5.3	100	µg/L	100	7/15/2015 03:53 PM
Manganese	13	0.023	0.50	µg/L	1	7/9/2015 02:07 PM
Molybdenum	120	0.73	12	µg/L	25	7/14/2015 04:49 PM
Nickel	11	0.038	1.0	µg/L	1	7/9/2015 02:07 PM
Selenium	20	0.35	2.5	µg/L	5	7/14/2015 04:44 PM
Silver	ND	0.58	12	µg/L	25	7/14/2015 04:49 PM
Thallium	ND	3.4	50	µg/L	100	7/15/2015 03:53 PM
Vanadium	ND	0.025	1.0	µg/L	1	7/9/2015 02:07 PM
Zinc	ND	0.039	10	µg/L	1	7/14/2015 04:38 PM

Qualifiers: B Analyte detected in the associated Method Blank
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ASSET Laboratories

Date: 22-Jul-15

CLIENT: CH2M HILL

Work Order: N016188

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	MB-50841	SampType:	MBLK	TestCode:	200.8_W	Units:	µg/L	Prep Date:	7/8/2015	RunNo:	101124
Client ID:	PBW	Batch ID:	50841	TestNo:	EPA 200.8			Analysis Date:	7/9/2015	SeqNo:	2036406
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.086	0.50									
Arsenic	ND	0.10									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Nickel	0.045	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									
Vanadium	ND	1.0									

Sample ID	LCS-50841	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	7/8/2015	RunNo:	101124
Client ID:	LCSW	Batch ID:	50841	TestNo:	EPA 200.8			Analysis Date:	7/9/2015	SeqNo:	2036407
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.154	0.50	10.00	0	102	85	115				
Arsenic	9.884	0.10	10.00	0	98.8	85	115				
Beryllium	9.854	0.50	10.00	0	98.5	85	115				
Cadmium	9.755	0.50	10.00	0	97.5	85	115				
Cobalt	9.255	0.50	10.00	0	92.5	85	115				
Copper	9.891	1.0	10.00	0	98.9	85	115				
Lead	10.087	1.0	10.00	0	101	85	115				
Manganese	94.900	0.50	100.0	0	94.9	85	115				
Nickel	9.992	1.0	10.00	0	99.9	85	115				
Selenium	9.518	0.50	10.00	0	95.2	85	115				
Thallium	9.457	0.50	10.00	0	94.6	85	115				

Qualifiers:

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



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ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL
Work Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
TestCode: 200.8_W

Sample ID	LCS-50841	SampleType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	7/8/2015	RunNo:	101124
Client ID:	LCSW	Batch ID:	50841	TestNo:	EPA 200.8			Analysis Date:	7/9/2015	SeqNo:	2036407
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	9.687	1.0	10.00	0	96.9	85	115				

Sample ID	N016183-001B-MS	SampleType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	7/8/2015	RunNo:	101124
Client ID:	ZZZZZZ	Batch ID:	50841	TestNo:	EPA 200.8			Analysis Date:	7/9/2015	SeqNo:	2036419
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	13.336	0.50	10.00	3.443	98.9	75	125				
Arsenic	13.786	0.10	10.00	4.290	95.0	75	125				
Beryllium	10.207	0.50	10.00	0	102	75	125				
Cadmium	9.144	0.50	10.00	0	91.4	75	125				
Cobalt	8.899	0.50	10.00	0.06528	88.3	75	125				
Copper	9.353	1.0	10.00	0	93.5	75	125				
Lead	9.780	1.0	10.00	0	97.8	75	125				
Manganese	97.871	0.50	100.0	6.411	91.5	75	125				
Nickel	11.168	1.0	10.00	1.655	95.1	75	125				
Selenium	9.833	0.50	10.00	0.2153	96.2	75	125				
Thallium	9.785	0.50	10.00	0.1056	96.8	75	125				
Vanadium	14.662	1.0	10.00	5.236	94.3	75	125				

Sample ID	N016183-001B-MSD	SampleType:	MSD	TestCode:	200.8_W	Units:	µg/L	Prep Date:	7/8/2015	RunNo:	101124
Client ID:	ZZZZZZ	Batch ID:	50841	TestNo:	EPA 200.8			Analysis Date:	7/9/2015	SeqNo:	2036420
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	13.318	0.50	10.00	3.443	98.7	75	125	13.34	0.136	20	
Arsenic	13.754	0.10	10.00	4.290	94.6	75	125	13.79	0.229	20	
Beryllium	10.077	0.50	10.00	0	101	75	125	10.21	1.28	20	
Cadmium	9.176	0.50	10.00	0	91.8	75	125	9.144	0.352	20	
Cobalt	8.844	0.50	10.00	0.06528	87.8	75	125	8.899	0.613	20	
Copper	9.238	1.0	10.00	0	92.4	75	125	9.353	1.24	20	
Lead	9.824	1.0	10.00	0	98.2	75	125	9.780	0.458	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		

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL
Work Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 200.8_W

Sample ID	N016183-001B-MSD	SampType:	MSD	TestCode:	200.8_W	Units:	µg/L	Prep Date:	7/8/2015	RunNo:	101124
Client ID:	ZZZZZZ	Batch ID:	50841	TestNo:	EPA 200.8			Analysis Date:	7/9/2015	SeqNo:	2036420
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Manganese	97.476	0.50	100.0	6.411	91.1	75	125	97.87	0.405	20	
Nickel	11.010	1.0	10.00	1.655	93.6	75	125	11.17	1.42	20	
Selenium	9.598	0.50	10.00	0.2153	93.8	75	125	9.833	2.42	20	
Thallium	9.860	0.50	10.00	0.1056	97.5	75	125	9.785	0.766	20	
Vanadium	14.639	1.0	10.00	5.236	94.0	75	125	14.66	0.155	20	

Sample ID	MB-50841	SampType:	MBLK	TestCode:	200.8_W	Units:	µg/L	Prep Date:	7/8/2015	RunNo:	101193
Client ID:	PBW	Batch ID:	50841	TestNo:	EPA 200.8			Analysis Date:	7/14/2015	SeqNo:	2040131
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium	ND	1.0									
Molybdenum	0.031	0.50									
Silver	0.168	0.50									
Zinc	ND	10									

Sample ID	LCS-50841	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	7/8/2015	RunNo:	101193
Client ID:	LCSW	Batch ID:	50841	TestNo:	EPA 200.8			Analysis Date:	7/14/2015	SeqNo:	2040132
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium	106.398	1.0	100.0	0	106	85	115				
Molybdenum	9.910	0.50	10.00	0	99.1	85	115				
Silver	9.167	0.50	10.00	0	91.7	85	115				
Zinc	98.109	10	100.0	0	98.1	85	115				

Sample ID	N016183-001B-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	7/8/2015	RunNo:	101193
Client ID:	ZZZZZZ	Batch ID:	50841	TestNo:	EPA 200.8			Analysis Date:	7/14/2015	SeqNo:	2040144
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium	125.355	1.0	100.0	28.27	97.1	75	125				
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Qualifiers:

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



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ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N016188

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

TestCode: 200.8_W

Sample ID	N016183-001B-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 7/8/2015	RunNo: 101193						
Client ID:	ZZZZZZ	Batch ID: 50841	TestNo: EPA 200.8		Analysis Date: 7/14/2015	SeqNo: 2040144						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Molybdenum	13.327		0.50	10.00	3.426	99.0	75	125					
Silver	9.826		0.50	10.00	0	98.3	75	125					
Zinc	96.578		10	100.0	4.063	92.5	75	125					

Sample ID	N016183-001B-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 7/8/2015	RunNo: 101193						
Client ID: ZZZZZZ		Batch ID: 50841	TestNo: EPA 200.8		Analysis Date: 7/14/2015	SeqNo: 2040145						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium	125.694		1.0	100.0	28.27	97.4	75	125		125.4	0.270	20	
Molybdenum	13.461		0.50	10.00	3.426	100	75	125		13.33	1.00	20	
Silver	10.033		0.50	10.00	0	100	75	125		9.826	2.09	20	
Zinc	95.578		10	100.0	4.063	91.5	75	125		96.58	1.04	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: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-001

Client Sample ID: SC-100B-WDR-529
Collection Date: 7/7/2015 1:05:00 PM
Matrix: WATER

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

RunID: IC7_150709A	QC Batch: R101139				PrepDate		Analyst: RB
Hexavalent Chromium	540	0.75	10		µg/L	50	7/9/2015 02:41 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_150715C	QC Batch: 50841				PrepDate	7/8/2015	Analyst: CEI
Chromium	590	0.43	5.0		µg/L	5	7/15/2015 03:47 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-002

Client Sample ID: SC-700B-WDR-529
Collection Date: 7/7/2015 1:00:00 PM
Matrix: WATER

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

RunID: IC7_150709A	QC Batch: R101139				PrepDate		Analyst: RB
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	7/9/2015 02:59 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_150709A	QC Batch: 50841				PrepDate	7/8/2015	Analyst: CEI
Chromium	ND	0.086	1.0		µg/L	1	7/9/2015 02:02 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-003

Client Sample ID: SC-701-WDR-529
Collection Date: 7/7/2015 1:03:00 PM
Matrix: WATER

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

RunID: IC7_150709A	QC Batch: R101139				PrepDate		Analyst: RB
Hexavalent Chromium	ND	0.075	1.0		µg/L	5	7/9/2015 03:56 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_150709A	QC Batch: 50841				PrepDate	7/8/2015	Analyst: CEI
Chromium	3.4	0.086	1.0		µg/L	1	7/9/2015 02:07 PM

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



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Date: 22-Jul-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N016188

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

TestCode: 200.8_W_CRPGE

Sample ID	MB-50841	SampType:	MBLK	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	7/8/2015	RunNo:	101124
Client ID:	PBW	Batch ID:	50841	TestNo:	EPA 200.8			Analysis Date:	7/9/2015	SeqNo:	2036303
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium ND 1.0

Sample ID	LCS-50841	SampType:	LCS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	7/8/2015	RunNo:	101124
Client ID:	LCSW	Batch ID:	50841	TestNo:	EPA 200.8			Analysis Date:	7/9/2015	SeqNo:	2036304
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium 9.615 1.0 10.00 0 96.1 85 115

Sample ID	N016183-001B-MS	SampType:	MS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	7/8/2015	RunNo:	101124
Client ID:	ZZZZZZ	Batch ID:	50841	TestNo:	EPA 200.8			Analysis Date:	7/9/2015	SeqNo:	2036316
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium 10.353 1.0 10.00 1.053 93.0 75 125

Sample ID	N016183-001B-MSD	SampType:	MSD	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	7/8/2015	RunNo:	101124
Client ID:	ZZZZZZ	Batch ID:	50841	TestNo:	EPA 200.8			Analysis Date:	7/9/2015	SeqNo:	2036317
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium 10.361 1.0 10.00 1.053 93.1 75 125 10.35 0.0822 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: N016188
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	MB-R101139	SampleType: MBLK	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 101139						
Client ID:	PBW	Batch ID: R101139	TestNo: EPA 218.6	Analysis Date: 7/9/2015	SeqNo: 2037354							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	LCS-R101139	SampleType: LCS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 101139						
Client ID: LCSW		Batch ID: R101139	TestNo: EPA 218.6		Analysis Date: 7/9/2015	SeqNo: 2037355						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

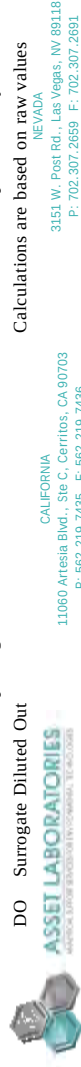
Sample ID	N016182-001ADUP	SampleType:	DUP	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:	RunNo:	101139			
Client ID:	ZZZZZZ	Batch ID:	R101139	TestNo:	EPA 218.6			Analysis Date:	SeqNo:	2037357			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016182-001AMS	SampleType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:	RunNo:	101139			
Client ID:	ZZZZZZ	Batch ID:	R101139	TestNo:	EPA 218.6			Analysis Date:	SeqNo:	2037358			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016182-001AMSD	SampleType:	MSD	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:	RunNo:	101139			
Client ID:	ZZZZZZ	Batch ID:	R101139	TestNo:	EPA 218.6			Analysis Date:	SeqNo:	2037359			
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: N016188
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	N016187-001CMS	MS	MS	218.6_WU_P	µg/L	Prep Date:	RunNo: 101139					
Client ID:	ZZZZZZ	Batch ID: R101139	TestNo: EPA 218.6	Analysis Date: 7/9/2015	SeqNo: 2037368							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

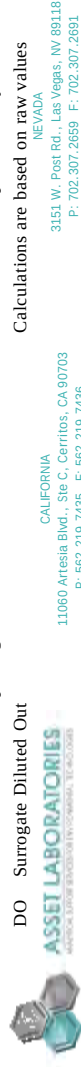
Sample ID	N016188-001CMS	MS	MS	218.6_WU_P	µg/L	Prep Date:	RunNo: 101139					
Client ID:	ZZZZZZ	Batch ID: R101139	TestNo: EPA 218.6	Analysis Date: 7/9/2015	SeqNo: 2037370							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016188-002CMS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 101139						
Client ID: ZZZZZZ		Batch ID: R101139	TestNo: EPA 218.6		Analysis Date: 7/9/2015	SeqNo: 2037372						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016188-003BMS	MS	MS	218.6_WU_P	µg/L	Prep Date:	RunNo: 101139					
Client ID:	ZZZZZZ	Batch ID: R101139	TestNo: EPA 218.6	Analysis Date: 7/9/2015	SeqNo: 2037376							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

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



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ANALYTICAL RESULTS

Print Date: 22-Jul-15

CLIENT: CH2M HILL
 Lab Order: N016188
 Project: PG&E Topock, 658274.01.IM.OP.00
 Lab ID: N016188-001

Client Sample ID: SC-100B-WDR-529
 Collection Date: 7/7/2015 1:05:00 PM
 Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: WETCHEM_150708A	QC Batch: R101083			PrepDate		Analyst: LR
Turbidity	0.23	0.10	0.10	NTU	1	7/8/2015 11:20 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
ANALYTICAL RESULTS
Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-002

Client Sample ID: SC-700B-WDR-529
Collection Date: 7/7/2015 1:00:00 PM
Matrix: WATER

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

RunID: WETCHEM_150708A	QC Batch: R101083			PrepDate		Analyst: LR
Turbidity	0.22	0.10	0.10	NTU	1	7/8/2015 11:20 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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Date: 22-Jul-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N016188

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

TestCode: 2130_W

Sample ID	MB-R101083	SampType:	MBLK	TestCode:	2130_W	Units:	NTU	Prep Date:	RunNo:	101083			
Client ID:	PBW	Batch ID:	R101083	TestNo:	SM 2130B			Analysis Date:	7/8/2015	SeqNo:	2034387		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity			ND		0.10								

Sample ID	N016188-002B	DUP	SampType:	DUP	TestCode:	2130_W	Units:	NTU	Prep Date:	RunNo:	101083			
Client ID:	ZZZZZZ		Batch ID:	R101083		TestNo:	SM 2130B		Analysis Date:	7/8/2015	SeqNo:	2034390		
Analyte			Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity			0.230			0.10					0.2200	4.44		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: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-003

Client Sample ID: SC-701-WDR-529
Collection Date: 7/7/2015 1:03:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL MERCURY BY COLD VAPOR TECHNIQUE
EPA 245.1

RunID: AA1_150709A	QC Batch: 50836			PrepDate	7/9/2015	Analyst: CEI
Mercury	ND	0.025	0.20	µg/L	1	7/9/2015 03:07 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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Date: 22-Jul-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N016188

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

TestCode: 245.1_W

Sample ID	MB-50836	SampleType:	MBLK	TestCode:	245.1_W	Units:	µg/L	Prep Date:	7/9/2015	RunNo:	101137
Client ID:	PBW	Batch ID:	50836	TestNo:	EPA 245.1			Analysis Date:	7/9/2015	SeqNo:	2038396
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.086		0.20							

Sample ID	LCS-50836	SampleType:	LCS	TestCode:	245.1_W	Units:	µg/L	Prep Date:	7/9/2015	RunNo:	101137
Client ID:	LCSW	Batch ID:	50836	TestNo:	EPA 245.1			Analysis Date:	7/9/2015	SeqNo:	2038398
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		9.168		0.20	10.00	0	91.7	85	115		

Sample ID	N016176-014A-MS	SampleType:	MS	TestCode:	245.1_W	Units:	µg/L	Prep Date:	7/9/2015	RunNo:	101137
Client ID:	ZZZZZZ	Batch ID:	50836	TestNo:	EPA 245.1			Analysis Date:	7/9/2015	SeqNo:	2038399
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		9.096		0.20	10.00	0	91.0	75	125		

Sample ID	N016176-014A-MSD	SampleType:	MSD	TestCode:	245.1_W	Units:	µg/L	Prep Date:	7/9/2015	RunNo:	101137
Client ID:	ZZZZZZ	Batch ID:	50836	TestNo:	EPA 245.1			Analysis Date:	7/9/2015	SeqNo:	2038400
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		8.802		0.20	10.00	0	88.0	75	125	9.096	3.29 20

Qualifiers:

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-001

Client Sample ID: SC-100B-WDR-529
Collection Date: 7/7/2015 1:05:00 PM
Matrix: WATER

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

RunID: IC2_150708A	QC Batch: R101092				PrepDate		Analyst: QBM
Fluoride	2.3	0.12	1.0		mg/L	10	7/8/2015 03:41 PM

ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_150708A	QC Batch: R101092				PrepDate		Analyst: QBM
Sulfate	460	1.6	25		mg/L	50	7/8/2015 06:08 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-002

Client Sample ID: SC-700B-WDR-529
Collection Date: 7/7/2015 1:00:00 PM
Matrix: WATER

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

RunID: IC2_150708A	QC Batch: R101092				PrepDate		Analyst: QBM
Fluoride	1.7	0.12	1.0		mg/L	10	7/8/2015 03:56 PM

ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_150708A	QC Batch: R101092				PrepDate		Analyst: QBM
Sulfate	430	1.6	25		mg/L	50	7/8/2015 06:23 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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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-003

Client Sample ID: SC-701-WDR-529
Collection Date: 7/7/2015 1:03:00 PM
Matrix: WATER

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

RunID: IC2_150708A	QC Batch: R101092	PrepDate	Analyst: QBM
Fluoride	11 0.62	5.0 mg/L	50 7/8/2015 04:10 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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NEVADA
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ASSET Laboratories

Date: 22-Jul-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N016188

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

TestCode: 300_W_FPGE

Sample ID	MB-R101092_F	SampleType: MBLK	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 101092					
Client ID:	PBW	Batch ID: R101092	TestNo: EPA 300.0		Analysis Date: 7/8/2015	SeqNo: 2034802					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride ND 0.10

Sample ID	LCS-R101092_F	SampleType: LCS	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 101092					
Client ID:	LCSW	Batch ID: R101092	TestNo: EPA 300.0		Analysis Date: 7/8/2015	SeqNo: 2034803					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 2.461 0.10 2.500 0 98.4 90 110

Sample ID	N016188-001BDUP	Sample Type: DUP	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 101092					
Client ID:	ZZZZZZ	Batch ID: R101092	TestNo: EPA 300.0		Analysis Date: 7/8/2015	SeqNo: 2034811					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 2.200 1.0 2.290 4.01 20

Sample ID	N016188-002BMS	Sample Type: MS	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 101092					
Client ID:	ZZZZZZ	Batch ID: R101092	TestNo: EPA 300.0		Analysis Date: 7/8/2015	SeqNo: 2034812					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 25.530 1.0 25.00 1.660 95.5 80 120

Sample ID	N016188-002BMSD	SampleType: MSD	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 101092					
Client ID:	ZZZZZZ	Batch ID: R101092	TestNo: EPA 300.0		Analysis Date: 7/8/2015	SeqNo: 2034813					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 26.630 1.0 25.00 1.660 99.9 80 120 25.53 4.22 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 QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

CLIENT: CH2M HILL

Work Order: N016188

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

Sample ID	MB-R101092_SO4	SampleType: MBLK	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 101092
Client ID:	PBW	Batch ID: R101092	TestNo: EPA 300.0	Analysis Date: 7/8/2015	SeqNo: 2034783	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC
				LowLimit	HighLimit	RPD Ref Val
						%RPD
						RPDLimit
						Qual

Sample ID	LCS-R101092_SO4	SampleType: LCS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 101092
Client ID:	LCSW	Batch ID: R101092	TestNo: EPA 300.0	Analysis Date: 7/8/2015	SeqNo: 2034784	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC
					LowLimit	HighLimit
					RPD Ref Val	%RPD
						RPDLimit
						Qual

Sample ID	N016187-001ADUP	SampleType: DUP	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 101092						
Client ID:	ZZZZZZ	Batch ID: R101092	TestNo: EPA 300.0	Analysis Date: 7/8/2015	SeqNo: 2034789							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016187-002AMS	SampleType: MS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 101092						
Client ID:	ZZZZZZ	Batch ID: R101092	TestNo: EPA 300.0	Analysis Date: 7/8/2015		SeqNo: 2034790						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016187-002AMSD	SampleType: MSD	TestCode: 300_w_SO4P	Units: mg/L	Prep Date:	RunNo: 101092					
Client ID:	ZZZZZZ	Batch ID: R101092	TestNo: EPA 300.0	Analysis Date:	7/8/2015	SeqNo: 2034791					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

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

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-001

Client Sample ID: SC-100B-WDR-529
Collection Date: 7/7/2015 1:05:00 PM
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_150716D	QC Batch: R101241			PrepDate		Analyst: RB
Nitrate/Nitrite as N	2.7	0.11	0.25	mg/L	5	7/16/2015

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 22-Jul-15

CLIENT: CH2M HILL
Lab Order: N016188
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016188-002

Client Sample ID: SC-700B-WDR-529
Collection Date: 7/7/2015 1:00:00 PM
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_150716D	QC Batch: R101241				PrepDate		Analyst: RB
Nitrate/Nitrite as N	2.5	0.11	0.25		mg/L	5	7/16/2015

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



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Date: 22-Jul-15

CLIENT: CH2M HILL

Work Order: N016188

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R101241	SampleType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	101241			
Client ID:	PBW	Batch ID:	R101241	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2042186			
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-R101241	SampleType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	101241			
Client ID:	LCSW	Batch ID:	R101241	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2042187			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 0.506 0.050 0.5000 0 101 85 115

Sample ID	N016187-001DDUP	SampleType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	101241			
Client ID:	ZZZZZZ	Batch ID:	R101241	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2042189			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N ND 0.050 0 0 0 20

Sample ID	N016187-001DMS	SampleType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	101241			
Client ID:	ZZZZZZ	Batch ID:	R101241	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2042190			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 0.567 0.050 0.5000 0 113 75 125

Sample ID	N016187-001DMSD	SampleType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	101241			
Client ID:	ZZZZZZ	Batch ID:	R101241	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2042191			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 0.569 0.050 0.5000 0 114 75 125 0.335 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: 7/7/2015

Workorder: N016188

Rep sample Temp (Deg C): 2.6

IR Gun ID: 2

Temp Blank: ☒ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA

Packing Material Used: None

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

Sample Receipt Checklist

- | | | | |
|---|---|--|---|
| 1. Shipping container/cooler in good condition? | Yes ☒ | No ☐ | Not Present ☐ |
| 2. Custody seals intact, signed, dated on 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 were lab filtered and lab preserved.

Checklist Completed B

JPG

 07/08/15

Reviewed By:

 07/13/15



ASSET Laboratories

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FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Truesdail

14201 Franklin Ave.

Tustin, CA 92680

TEL: (714) 730-6239

FAX: (714) 730-6462

Acct #:

Field Sampler: SIGNED

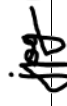
08-Jul-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests	
				SM4500-NH3C	
N016188-001A / SC-100B-WDR-529	Water	7/7/2015 1:05:00 PM	32OZP	1	
N016188-002A / SC-700B-WDR-529	Water	7/7/2015 1:00:00 PM	32OZP	1	

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

Please use PO#: N16188A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by:
Normal TAT

Please analyze for Ammonia. CH2MHill Samples.

Date/Time	
Relinquished by:  07/08/15	Received by: GSO# 528524429
Relinquished by: _____	Received by: _____

List of Analysts

ASSET Laboratories Work Order: N016188

Item	Pages
Quennie Manimtim	EPA 300.0
Claire Ignacio	EPA 200.8, EPA 245.1
Ryan Balilu	EPA 218.6, SM 4500- NO3F
Hanah Glodoviza	EPA 200.7
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.: 15G0196

Printed: 07/24/2015

CASE NARRATIVE

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Ammonia results. 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 July 10, 2015, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter will be kept in warm storage for additional 2 months before disposal.

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

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
SC-100B-WDR-529	15G0196-01	Water	Grab	07/07/2015 13:05	07/10/2015 10:50
SC-700B-WDR-529	15G0196-02	Water	Grab	07/07/2015 13:00	07/10/2015 10:50

DEFINITIONS

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

Respectfully yours,

Lyn Phaerakkakit
Project Manager

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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IRVINE, CALIFORNIA 92612
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

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

Attention: Marlon Cartin

Sample: Two (2) Water Samples

Project Name: PG&E Topock Project

Project No.: N/A

Laboratory No.: 15G0196

Date: July 24, 2015

Collected: July 7, 2015

Received: July 10, 2015

ANALYST LIST

METHOD	PARAMETER	ANALYST
SM 4500-NH3 D	Ammonia	Alex Luna

Client: **Advanced Technology Laboratories-N**Project Name: **ATL-NV**

Printed: 07/24/2015

SC-100B-WDR-529**15G0196-01 (Water)**

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

Truesdail Laboratories, Inc**Wet Chemistry**

Ammonia	ND	0.0500	mg/L	1	1507320	07/21/2015 10:19	AL	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----	-----------------	--

SC-700B-WDR-529**15G0196-02 (Water)**

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

Truesdail Laboratories, Inc**Wet Chemistry**

Ammonia	ND	0.0500	mg/L	1	1507320	07/21/2015 10:23	AL	SM 4500-NH3 D M	
---------	----	--------	------	---	---------	------------------	----	-----------------	--

ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: SC-100B-WDR-529
Lab Sample ID: 15G0196-01
Project: ATL-NV

Date Sampled: 07/07/15 13:05 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	07/21/15 10:19	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: SC-700B-WDR-529
Lab Sample ID: 15G0196-02
Project: ATL-NV

Date Sampled: 07/07/15 13:00 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	07/21/15 10:23	SM 4500-NH3 D M

METHOD BLANK DATA SHEET

SM 4500-NH3 D M

Client: Advanced Technology Laboratories-NV

Project: ATL-NV

Laboratory ID: 1507320-BLK1

Prepared: 07/21/15 09:04

Preparation: SM 4500-NH3 B

Matrix: Water

Analyzed: 07/21/15 10:15

Instrument: TL01

File ID: 1507320-009

Batch: 1507320

Sequence: 5G21001

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: 15G0196

Matrix: Water
Prep Batch: 1507320

Prep Method: SM 4500-NH3 B
Lab Sample ID: 1507320-BS1

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia	0.400	0.372	93	90 - 110

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SC-700B-WDR-529

Client: Advanced Technology Laboratories-NV
 Project: ATL-NV
 Work Order: 15G0196

Matrix: Water
 Prep Batch: 1507320
 Analysis Method: SM 4500-NH3 D M
 Prep Method: SM 4500-NH3 B
 Laboratory ID: 1507320-MS1
 Source Sample ID: 15G0196-02

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Ammonia	0.400	0.0468	0.482	109	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	RPD	QC LIMITS REC.
Ammonia	0.400	0.453	102	6	20	75 - 125

* Values outside of QC limits

DUPLICATES

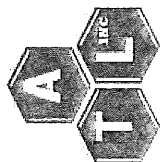
SC-100B-WDR-529

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

Matrix:	Water	Laboratory ID:	1507320-DUP1
Prep Batch:	1507320	Initial/Final:	50 mL / 50 mL
Prep Method:	SM 4500-NH3 B	Analysis:	SM 4500-NH3 D M

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

* Values outside of QC limits



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CHAIN-OF-CUSTODY RECORD

Page 1 of 1

15G-0196

QC Level: Level IV

Subcontractor:

Truesdail
14201 Franklin Ave.
Tustin, CA 92680

TEL: (714) 730-6239
FAX: (714) 730-6462
Acct #:

Field Sampler: SIGNED

08-Jul-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests	
				SM4500-NH3C	
N016188-001A / SC-100B-WDR-529	Water	7/7/2015 1:05:00 PM	32OZP	1	
N016188-002A / SC-700B-WDR-529	Water	7/7/2015 1:00:00 PM	32OZP	1	

ALERT!!
Level IV QC

General Comments:

Please email sample receipt acknowledgement to the PM.

Please use PO#: N16188A For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assellaboratories.com by:
Normal TAT

Please analyze for Ammonia. CH2MHill Samples.

Date/Time	
Relinquished by: <i>[Signature]</i> 07/08/15	Received by: GSO# 528524429
Relinquished by:	Received by: <i>[Signature]</i> 7-10-15 10:50

7-22-90

ALERT !!**Level IV QC**

Log-in check list For level III data package

Client: *ATL*Lab Number: *156 0196*Received Date: *7-10-15***Sample receiving review**

	Yes	No	N/A	Comment
Was special login form received by login personnel?			✓	
Was COC received and signed by client and login personnel?	✓			
Were all samples 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:

Luda

July 14, 2015

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.: N016226

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

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on July 09, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,



Glen Gesmundo
QA Manager

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"Serving Clients with Passion and Professionalism"

August 19, 2015

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.: N016515

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

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on August 04, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,



Glen Gesmundo
QA Manager

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CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N016515

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:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N016515-002E-MS and N016515-002E-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on Lead for sample N016515-002 due to associated internal standard not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and internal standard met method criteria. Affected analyte for this failed internal standard was reported at dilution that meet internal standard recovery limit.



ASSET Laboratories

Date: 19-Aug-15

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N016515
Contract No: IM3PLANT-AR

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N016515-001A	SC-100B-WDR-530	Water	8/4/2015 9:20:00 AM	8/4/2015	8/19/2015
N016515-001B	SC-100B-WDR-530	Water	8/4/2015 9:20:00 AM	8/4/2015	8/19/2015
N016515-001C	SC-100B-WDR-530	Water	8/4/2015 9:20:00 AM	8/4/2015	8/19/2015
N016515-002A	SC-700B-WDR-530	Water	8/4/2015 9:30:00 AM	8/4/2015	8/19/2015
N016515-002B	SC-700B-WDR-530	Water	8/4/2015 9:30:00 AM	8/4/2015	8/19/2015
N016515-002C	SC-700B-WDR-530	Water	8/4/2015 9:30:00 AM	8/4/2015	8/19/2015
N016515-002D	SC-700B-WDR-530	Water	8/4/2015 9:30:00 AM	8/4/2015	8/19/2015
N016515-002E	SC-700B-WDR-530	Water	8/4/2015 9:30:00 AM	8/4/2015	8/19/2015



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ASSET Laboratories**ANALYTICAL RESULTS**

Print Date: 19-Aug-15

CLIENT: CH2M HILL
Lab Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016515-001

Client Sample ID: SC-100B-WDR-530
Collection Date: 8/4/2015 9:20:00 AM
Matrix: WATER

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

SPECIFIC CONDUCTANCE**EPA 120.1**

RunID: WETCHEM_150805D	QC Batch: R101578			PrepDate		Analyst: LR
Specific Conductance	7000	0.10	0.10	umhos/cm	1	8/5/2015 03:35 PM

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



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ASSET Laboratories**ANALYTICAL RESULTS**

Print Date: 19-Aug-15

CLIENT: CH2M HILL
Lab Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016515-002

Client Sample ID: SC-700B-WDR-530
Collection Date: 8/4/2015 9:30:00 AM
Matrix: WATER

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

RunID: WETCHEM_150805D	QC Batch: R101578			PrepDate		Analyst: LR
Specific Conductance	7200	0.10	0.10	umhos/cm	1	8/5/2015 03:35 PM

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



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ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

CLIENT: CH2M HILL
Work Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00

Sample ID	N016514-002ADUP	SampType: DUP	TestCode: 120.1_WPGE	Units: umhos/cm	Prep Date:	RunNo: 101578					
Client ID: ZZZZZZ		Batch ID: R101578	TestNo: EPA 120.1		Analysis Date: 8/5/2015	SeqNo: 2057676					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7780.000	0.10						7770	0.129	10	

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

Print Date: 19-Aug-15

CLIENT: CH2M HILL
Lab Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016515-001

Client Sample ID: SC-100B-WDR-530
Collection Date: 8/4/2015 9:20:00 AM
Matrix: WATER

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

RunID: WETCHEM_150805E	QC Batch: 51129			PrepDate	8/5/2015	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4100	50	50	mg/L	1	8/5/2015 03:00 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Aug-15

CLIENT: CH2M HILL
Lab Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016515-002

Client Sample ID: SC-700B-WDR-530
Collection Date: 8/4/2015 9:30:00 AM
Matrix: WATER

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

TOTAL FILTERABLE RESIDUE
SM2540C

RunID: WETCHEM_150805E	QC Batch: 51129			PrepDate	8/5/2015	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4200	50	50	mg/L	1	8/5/2015 03:00 PM

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



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ASSET Laboratories

Date: 19-Aug-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N016515

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

TestCode: 160.1_2540C_W

Sample ID	MB-51129	SampType: MBLK	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 8/5/2015	RunNo: 101579					
Client ID:	PBW	Batch ID: 51129	TestNo: SM2540C		Analysis Date: 8/5/2015	SeqNo: 2057679					
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-51129	SampType: LCS	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 8/5/2015	RunNo: 101579					
Client ID:	LCSW	Batch ID: 51129	TestNo: SM2540C		Analysis Date: 8/5/2015	SeqNo: 2057680					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		992.000	10	1000	0	99.2	80	120			

Sample ID	N016514-002A-DUP	SampType: DUP	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 8/5/2015	RunNo: 101579					
Client ID:	ZZZZZZ	Batch ID: 51129	TestNo: SM2540C		Analysis Date: 8/5/2015	SeqNo: 2057688					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		4465.000	50					4620	3.41	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-Aug-15

CLIENT: CH2M HILL
Lab Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016515-002

Client Sample ID: SC-700B-WDR-530
Collection Date: 8/4/2015 9:30:00 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_150806B	QC Batch: 51122	PrepDate	8/5/2015	Analyst: CEI
Aluminum	ND 12	50	µg/L	1 8/6/2015 01:52 PM
Boron	870 11	100	µg/L	1 8/6/2015 01:52 PM
Iron	ND 17	20	µg/L	1 8/6/2015 01:52 PM

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



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ASSET Laboratories

Date: 19-Aug-15

CLIENT: CH2M HILL

Work Order: N016515

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WPGPPB

Sample ID	MB-51122	SampType: MBLK	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101597					
Client ID:	PBW	Batch ID: 51122	TestNo: EPA 200.7		Analysis Date: 8/6/2015	SeqNo: 2058067					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	LCS1-51122	SampType: LCS	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101597					
Client ID: LCSW		Batch ID: 51122	TestNo: EPA 200.7		Analysis Date: 8/6/2015	SeqNo: 2058068					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016514-001B-MS1	SampType: MS	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101597					
Client ID: ZZZZZZ	Batch ID: 51122	TestNo: EPA 200.7			Analysis Date: 8/6/2015	SeqNo: 2058074					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016514-001B-MSD	SampType: MSD	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101597					
Client ID: ZZZZZZ		Batch ID: 51122	TestNo: EPA 200.7		Analysis Date: 8/6/2015	SeqNo: 2058075					
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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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Aug-15

CLIENT: CH2M HILL
Lab Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016515-001

Client Sample ID: SC-100B-WDR-530
Collection Date: 8/4/2015 9:20:00 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_150818A	QC Batch: 51213	PrepDate	8/18/2015	Analyst: CEI
Manganese	14	0.023	0.50	µg/L
			1	8/18/2015 06:37 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Aug-15

CLIENT: CH2M HILL
Lab Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016515-002

Client Sample ID: SC-700B-WDR-530
Collection Date: 8/4/2015 9:30:00 AM
Matrix: WATER

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

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_150806A	QC Batch: 51121	PrepDate	8/5/2015	Analyst: CEI		
Antimony	ND	0.026	0.50	µg/L	1	8/6/2015 12:53 PM
Arsenic	ND	0.016	0.10	µg/L	1	8/6/2015 12:53 PM
Barium	16	0.072	1.0	µg/L	1	8/13/2015 11:32 AM
Copper	ND	0.26	1.0	µg/L	1	8/12/2015 12:27 PM
Lead	ND	0.27	5.0	µg/L	5	8/6/2015 12:58 PM
Manganese	120	0.023	0.50	µg/L	1	8/18/2015 06:42 PM
Molybdenum	21	0.029	0.50	µg/L	1	8/6/2015 12:53 PM
Nickel	7.8	0.038	1.0	µg/L	1	8/6/2015 12:53 PM
Zinc	ND	0.039	10	µg/L	1	8/6/2015 12:53 PM

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



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ASSET Laboratories

Date: 19-Aug-15

CLIENT: CH2M HILL

Work Order: N016515

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	MB-51121	SampType:	MBLK	TestCode:	200.8_W	Units:	µg/L	Prep Date:	8/5/2015	RunNo:	101607
Client ID:	PBW	Batch ID:	51121	TestNo:	EPA 200.8			Analysis Date:	8/6/2015	SeqNo:	2058695
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	0.087	0.50									
Arsenic	ND	0.10									
Lead	ND	1.0									
Molybdenum	0.180	0.50									
Nickel	0.041	1.0									
Zinc	0.156	10									

Sample ID	LCS-51121	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	8/5/2015	RunNo:	101607
Client ID:	LCSW	Batch ID:	51121	TestNo:	EPA 200.8			Analysis Date:	8/6/2015	SeqNo:	2058696
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	10.089	0.50	10.00	0	101	85	115				
Arsenic	9.812	0.10	10.00	0	98.1	85	115				
Lead	10.224	1.0	10.00	0	102	85	115				
Molybdenum	9.687	0.50	10.00	0	96.9	85	115				
Nickel	9.765	1.0	10.00	0	97.7	85	115				
Zinc	97.820	10	100.0	0	97.8	85	115				

Sample ID	N016515-002E-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	8/5/2015	RunNo:	101607
Client ID:	ZZZZZZ	Batch ID:	51121	TestNo:	EPA 200.8			Analysis Date:	8/6/2015	SeqNo:	2058707
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	12.058	0.50	10.00	0.03241	120	75	125				
Arsenic	12.026	0.10	10.00	0.05903	120	75	125				
Molybdenum	33.362	0.50	10.00	20.776	126	75	125				S
Nickel	18.300	1.0	10.00	7.827	105	75	125				
Zinc	103.896	10	100.0	0	104	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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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	N016515-002E-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101607					
Client ID:	ZZZZZZ	Batch ID: 51121	TestNo: EPA 200.8		Analysis Date: 8/6/2015	SeqNo: 2058708					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	12.037	0.50	10.00	0.03241	120	75	125	12.06	0.180	20	
Arsenic	11.866	0.10	10.00	0.05903	118	75	125	12.03	1.34	20	
Molybdenum	33.599	0.50	10.00	20.776	128	75	125	33.36	0.710	20	S
Nickel	18.351	1.0	10.00	7.827	105	75	125	18.30	0.275	20	
Zinc	104.020	10	100.0	0	104	75	125	103.9	0.120	20	

Sample ID	N016515-002E-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101607					
Client ID:	ZZZZZZ	Batch ID: 51121	TestNo: EPA 200.8		Analysis Date: 8/6/2015	SeqNo: 2058711					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	13.352	5.0	10.00	0	134	75	125				S

Lead	13.352	5.0	10.00	0	134	75	125				S
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Sample ID	N016515-002E-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101607					
Client ID: ZZZZZZ		Batch ID: 51121	TestNo: EPA 200.8		Analysis Date: 8/6/2015	SeqNo: 2058712					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	13.380	5.0	10.00	0	134	75	125	13.35	0.211	20	S
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Sample ID	MB-51121	SampleType: MBLK	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101680					
Client ID:	PBW	Batch ID: 51121	TestNo: EPA 200.8		Analysis Date: 8/12/2015	SeqNo: 2062157					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	ND	1.0									
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Sample ID	LCS-51121	SampleType: LCS	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101680						
Client ID: LCSW		Batch ID: 51121	TestNo: EPA 200.8		Analysis Date: 8/12/2015	SeqNo: 2062158						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	9.890	1.0	10.00	0	98.9	85	115				
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Qualifiers:

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



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"Serving Clients with Passion and Professionalism"

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N016515

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

TestCode: 200.8_W

Sample ID	N016515-002E-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101680
Client ID:	ZZZZZZ	Batch ID: 51121	TestNo: EPA 200.8		Analysis Date: 8/12/2015	SeqNo: 2062162
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper		9.179	1.0	10.00	0	91.8 75 125

Sample ID	N016515-002E-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101680
Client ID:	ZZZZZZ	Batch ID: 51121	TestNo: EPA 200.8		Analysis Date: 8/12/2015	SeqNo: 2062163
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper		9.130	1.0	10.00	0	91.3 75 125 9.179 0.536 20

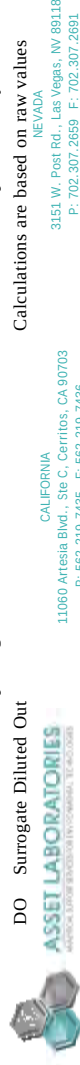
Sample ID	MB-51121	SampleType: MBLK	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101696
Client ID:	PBW	Batch ID: 51121	TestNo: EPA 200.8		Analysis Date: 8/13/2015	SeqNo: 2062219
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Barium		ND	1.0			

Sample ID	LCS-51121	SampleType: LCS	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101696
Client ID:	LCSW	Batch ID: 51121	TestNo: EPA 200.8		Analysis Date: 8/13/2015	SeqNo: 2062220
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Barium		94.205	1.0	100.0	0	94.2 85 115

Sample ID	N016515-002E-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101696
Client ID:	ZZZZZZ	Batch ID: 51121	TestNo: EPA 200.8		Analysis Date: 8/13/2015	SeqNo: 2062224
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Barium		122.895	1.0	100.0	16.09	107 75 125

Qualifiers:

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

N016515

Project:

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	N016515-002E-MSD	SampType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/5/2015	RunNo: 101696					
Client ID: ZZZZZZ	Batch ID: 51121		TestNo: EPA 200.8		Analysis Date: 8/13/2015	SeqNo: 2062225					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	122.562	1.0	100.0	16.09	106	75	125	122.9	0.271	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

R

Value above quantitation range

RPD outside accepted recovery limits

Calculations are based on raw values

H

S

Holding times for preparation or analysis exceeded

Spike/Surrogate outside of limits due to matrix interference

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19

CLIENT: CH2M HILL
Work Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	MB-51213	MBLK	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/18/2015	RunNo: 101762
Client ID:	PBW	Batch ID: 51213	TestNo: EPA 200.8		Analysis Date: 8/18/2015	SeqNo: 2065001
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Manganese ND 0.50

Sample ID	LCS-51213	LCS	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/18/2015	RunNo: 101762
Client ID:	LCSW	Batch ID: 51213	TestNo: EPA 200.8		Analysis Date: 8/18/2015	SeqNo: 2065002
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Manganese 108.228 0.50 100.0 0 108 85 115

Sample ID	N016515-001C-MS	MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/18/2015	RunNo: 101762
Client ID:	ZZZZZZ	Batch ID: 51213	TestNo: EPA 200.8		Analysis Date: 8/18/2015	SeqNo: 2065014
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Manganese 122.346 0.50 100.0 13.63 109 75 125

Sample ID	N016515-001C-MSD	MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/18/2015	RunNo: 101762
Client ID:	ZZZZZZ	Batch ID: 51213	TestNo: EPA 200.8		Analysis Date: 8/18/2015	SeqNo: 2065015
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Manganese 122.716 0.50 100.0 13.63 109 75 125 122.3 0.302 2.0

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- 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-Aug-15

CLIENT: CH2M HILL
Lab Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016515-001

Client Sample ID: SC-100B-WDR-530
Collection Date: 8/4/2015 9:20:00 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_150807A	QC Batch: R101594				PrepDate		Analyst: RB
Hexavalent Chromium	530	0.75	10		µg/L	50	8/7/2015 01:08 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_150806A	QC Batch: 51121				PrepDate	8/5/2015	Analyst: CEI
Chromium	540	0.43	5.0		µg/L	5	8/6/2015 01:55 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Aug-15

CLIENT: CH2M HILL
Lab Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016515-002

Client Sample ID: SC-700B-WDR-530
Collection Date: 8/4/2015 9:30:00 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_150807A	QC Batch: R101594				PrepDate		Analyst: RB
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	8/7/2015 01:27 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_150806A	QC Batch: 51121				PrepDate	8/5/2015	Analyst: CEI
Chromium	ND	0.086	1.0		µg/L	1	8/6/2015 12:53 PM

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



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ASSET Laboratories

Date: 19-Aug-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N016515

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

TestCode: 200.8_W_CRPGE

Sample ID	MB-51121	SampType:	MBLK	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	8/5/2015	RunNo:	101607
Client ID:	PBW	Batch ID:	51121	TestNo:	EPA 200.8			Analysis Date:	8/6/2015	SeqNo:	2058663
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium ND 1.0

Sample ID	LCS-51121	SampType:	LCS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	8/5/2015	RunNo:	101607
Client ID:	LCSW	Batch ID:	51121	TestNo:	EPA 200.8			Analysis Date:	8/6/2015	SeqNo:	2058664
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium 9.620 1.0 10.00 0 96.2 85 115

Sample ID	N016515-002E-MS	SampType:	MS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	8/5/2015	RunNo:	101607
Client ID:	ZZZZZZ	Batch ID:	51121	TestNo:	EPA 200.8			Analysis Date:	8/6/2015	SeqNo:	2058675
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium 11.281 1.0 10.00 0.9105 104 75 125

Sample ID	N016515-002E-MSD	SampType:	MSD	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	8/5/2015	RunNo:	101607
Client ID:	ZZZZZZ	Batch ID:	51121	TestNo:	EPA 200.8			Analysis Date:	8/6/2015	SeqNo:	2058676
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium 11.215 1.0 10.00 0.9105 103 75 125 11.28 0.584 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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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	MB-R101594	SampleType: MBLK	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 101594
Client ID:	PBW	Batch ID: R101594	TestNo: EPA 218.6		Analysis Date: 8/7/2015	SeqNo: 2059960
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-R101594	SampleType: LCS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 101594
Client ID:	LCSW	Batch ID: R101594	TestNo: EPA 218.6		Analysis Date: 8/7/2015	SeqNo: 2059961
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		4.877	0.20	5.000	0	97.5 90 110

Sample ID	N016535-001EDUP	SampleType: DUP	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 101594
Client ID:	ZZZZZZ	Batch ID: R101594	TestNo: EPA 218.6		Analysis Date: 8/7/2015	SeqNo: 2059963
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		ND	0.20			0 0 0 20

Sample ID	N016521-013AMS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 101594
Client ID:	ZZZZZZ	Batch ID: R101594	TestNo: EPA 218.6		Analysis Date: 8/7/2015	SeqNo: 2059965
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		43.714	1.0	25.00	19.65	96.2 90 110

Sample ID	N016521-013AMSD	SampleType: MSD	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 101594
Client ID:	ZZZZZZ	Batch ID: R101594	TestNo: EPA 218.6		Analysis Date: 8/7/2015	SeqNo: 2059966
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		44.152	1.0	25.00	19.65	98.0 90 110 43.71 0.996 20



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Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference

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P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	N016514-001CMS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 101594						
Client ID:	ZZZZZZ	Batch ID: R101594	TestNo: EPA 218.6		Analysis Date: 8/7/2015	SeqNo: 2059974						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016515-001BMS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 101594					
Client ID:	ZZZZZZ	Batch ID: R101594	TestNo: EPA 218.6		Analysis Date: 8/7/2015	SeqNo: 2060655					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016515-002CMS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 101594						
Client ID:	ZZZZZZ	Batch ID: R101594	TestNo: EPA 218.6		Analysis Date: 8/7/2015	SeqNo: 2060657						
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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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Aug-15

CLIENT: CH2M HILL
Lab Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016515-001

Client Sample ID: SC-100B-WDR-530
Collection Date: 8/4/2015 9:20:00 AM
Matrix: WATER

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

RunID: WETCHEM_150805C	QC Batch: R101577			PrepDate		Analyst: LR
Turbidity	0.27	0.10	0.10	NTU	1	8/5/2015 04:45 PM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Aug-15

CLIENT: CH2M HILL
Lab Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016515-002

Client Sample ID: SC-700B-WDR-530
Collection Date: 8/4/2015 9:30:00 AM
Matrix: WATER

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

RunID: WETCHEM_150805C	QC Batch: R101577			PrepDate		Analyst: LR
Turbidity	0.35	0.10	0.10	NTU	1	8/5/2015 04:45 PM

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



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

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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL

Work Order: N016515

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 2130_W

Sample ID	MB-R101577	SampType: MBLK	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 101577					
Client ID:	PBW	Batch ID: R101577	TestNo: SM 2130B		Analysis Date: 8/5/2015	SeqNo: 2057669					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity		ND	0.10								

Sample ID	N016515-001ADUP	SampType: DUP	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 101577					
Client ID:	ZZZZZZ	Batch ID: R101577	TestNo: SM 2130B		Analysis Date: 8/5/2015	SeqNo: 2057671					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity		0.280	0.10					0.2700	3.64	30	

Sample ID	N016515-002BDUP	SampType: DUP	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 101577					
Client ID:	ZZZZZZ	Batch ID: R101577	TestNo: SM 2130B		Analysis Date: 8/5/2015	SeqNo: 2057673					
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	

ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Aug-15

CLIENT: CH2M HILL
Lab Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016515-002

Client Sample ID: SC-700B-WDR-530
Collection Date: 8/4/2015 9:30:00 AM
Matrix: WATER

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

ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_150811A	QC Batch: R101659				PrepDate		Analyst: QBM
Fluoride	2.4	0.12	1.0		mg/L	10	8/11/2015 01:42 PM

ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_150811A	QC Batch: R101659				PrepDate		Analyst: QBM
Sulfate	450	1.6	25		mg/L	50	8/11/2015 01:56 PM

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



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ASSET Laboratories

Date: 19-Aug-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N016515

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

TestCode: 300_W_FPGE

Sample ID	LCS-R101659_F	SampleType: LCS	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 101659					
Client ID: LCSW	Batch ID: R101659	TestNo: EPA 300.0	Analysis Date: 8/11/2015	SeqNo: 2060883							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	MB-R101659_F	SampleType: MBLK	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 101659					
Client ID: PBW		Batch ID: R101659	TestNo: EPA 300.0		Analysis Date: 8/11/2015	SeqNo: 2060884					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016515-002BDUP	SampleType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	101659	
Client ID:	ZZZZZZ	Batch ID:	R101659	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2060888	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016515-002BMS	SampleType: MS	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 101659					
Client ID: ZZZZZZ	Batch ID: R101659	TestNo: EPA 300.0	Analysis Date: 8/11/2015	SeqNo: 2060889							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016515-002BMSD	SampleType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:	RunNo:	101659	
Client ID:	ZZZZZZ	Batch ID:	R101659	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2060890	
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: N016515
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	LCS-R101659_SO4	SampleType: LCS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 101659
Client ID:	LCSW	Batch ID: R101659	TestNo: EPA 300.0		Analysis Date: 8/11/2015	SeqNo: 2060938
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		4.932	0.50	5.000	0	98.6 90 110

Sample ID	MB-R101659_SO4	SampleType: MBLK	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 101659
Client ID:	PBW	Batch ID: R101659	TestNo: EPA 300.0		Analysis Date: 8/11/2015	SeqNo: 2060939
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		ND	0.50			

Sample ID	N016522-015CMS	SampleType: MS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 101659
Client ID:	ZZZZZZ	Batch ID: R101659	TestNo: EPA 300.0		Analysis Date: 8/11/2015	SeqNo: 2060953
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		285.660	10	100.0	189.9	95.7 80 120

Sample ID	N016522-015CMSD	SampleType: MSD	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 101659
Client ID:	ZZZZZZ	Batch ID: R101659	TestNo: EPA 300.0		Analysis Date: 8/11/2015	SeqNo: 2060954
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		286.360	10	100.0	189.9	96.4 80 120 285.7 0.245 20

Sample ID	N016523-001CDUP	SampleType: DUP	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 101659
Client ID:	ZZZZZZ	Batch ID: R101659	TestNo: EPA 300.0		Analysis Date: 8/11/2015	SeqNo: 2060956
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		49.870	5.0			51.27 2.77 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: N016515

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N016523-007CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:	RunNo:	101659			
Client ID:	ZZZZZZ	Batch ID:	R101659	TestNo:	EPA 300.0			Analysis Date:	8/11/2015	SeqNo:	2060963		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		128.790		5.0	50.00	79.55	98.5	80	120				



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Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference

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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 19-Aug-15

CLIENT: CH2M HILL
Lab Order: N016515
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016515-002

Client Sample ID: SC-700B-WDR-530
Collection Date: 8/4/2015 9:30:00 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_150817D	QC Batch: R101745			PrepDate		Analyst: RB
Nitrate/Nitrite as N	2.6	0.11	0.25	mg/L	5	8/17/2015

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



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Date: 19-Aug-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N016515

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

TestCode: 4500N03F_W

Sample ID	MB-R101745	SampleType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	101745			
Client ID:	PBW	Batch ID:	R101745	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2064236			
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-R101745	SampleType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	101745			
Client ID:	LCSW	Batch ID:	R101745	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2064237			
AnalYTE		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 0.487 0.050 0.5000 0 97.3 85 115

Sample ID	N016514-001DDUP	SampleType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	101745			
Client ID:	ZZZZZZ	Batch ID:	R101745	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2064239			
AnalYTE		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N ND 0.050 0 0 0 20

Sample ID	N016514-001DMS	SampleType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	101745			
Client ID:	ZZZZZZ	Batch ID:	R101745	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2064240			
AnalYTE		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 0.536 0.050 0.5000 0 107 75 125

Sample ID	N016514-001DMSD	SampleType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	101745			
Client ID:	ZZZZZZ	Batch ID:	R101745	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2064241			
AnalYTE		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 0.520 0.050 0.5000 0 104 75 125 0.5356 2.94 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: 8/4/2015

Workorder: N016515

Rep sample Temp (Deg C): 3.1

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? | Yes ☐ | No ☐ | NA ☒ |
| Was Client notified? | Yes ☐ | No ☐ | NA ☒ |

Comments Samples were lab preserved.

Checklist Completed B

JPG

 08/05/15

Reviewed By:

 08/13/15



ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118

www.asset-labs.com

TEL: 7023072659

FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Truesdail

3337 Michelson Drive, Suite CN750

Irvine, CA 92612

TEL: (714) 730-6239

FAX: (714) 730-6462

Acct #:

Field Sampler: SIGNED

05-Aug-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests	
				SM4500-NH3C	
N016515-002A / SC-700B-WDR-530	Water	8/4/2015 9:30:00 AM	32OZP	1	

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

Please use PO#: N16515A 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. Ch2MHill Samples.

Date/Time	
Relinquished by:  08/05/15	Received by: GSO# 528827130
Relinquished by: _____	Received by: _____

WORKORDER: N016515

ANALYST LIST

NAME	TEST METHOD
Quennie Manimtim	EPA 300.0
Ryan Balilu	EPA 218.6, SM4500-NO3F
Claire Ignacio	EPA 200.7, EPA 200.8
Lilia Ramit	EPA 120.1, SM 2540C, SM 2130B



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REPORT

3337 MICHELSON DRIVE, SUITE CN 750
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(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.: 15H0102

Printed: 08/17/2015

CASE NARRATIVE

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Ammonia results. 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 August 6, 2015, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter will be kept in warm storage for additional 2 months before disposal.

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

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
SC-700B-WDR-530	15H0102-01	Water	Grab	08/04/2015 09:30	08/06/2015 09:30

DEFINITIONS

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

Respectfully yours,

Lyn Phaerakkakit
Project Manager

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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(714) 730-6239 • FAX (714) 730-6462
www.truesdail.com

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

Attention: Marlon Cartin

Sample: One (1) Water Sample

Project Name: PG&E Topock Project

Project No.: N/A

Laboratory No.: 15H0102

Date: August 17, 2015

Collected: August 4, 2015

Received: August 6, 2015

ANALYST LIST

METHOD	PARAMETER	ANALYST
SM 4500-NH3 D	Ammonia	Alex Luna



Client: Advanced Technology Laboratories-N

Project Name: ATL-NV

Printed: 08/17/2015

SC-700B-WDR-530

15H0102-01 (Water)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
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Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	0.0636	0.0500	mg/L	1	1508163	08/10/2015 18:34	AL	SM 4500-NH3 D M	
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ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: SC-700B-WDR-530
Lab Sample ID: 15H0102-01
Project: ATL-NV

Date Sampled: 08/04/15 09:30 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	0.0636	0.0318	0.0500	1		AL	08/10/15 18:34	SM 4500-NH3 D M

METHOD BLANK DATA SHEET

SM 4500-NH3 D M

Client: Advanced Technology Laboratories-NV

Project: ATL-NV

Laboratory ID: 1508163-BLK1

Prepared: 08/10/15 16:25

Preparation: SM 4500-NH3 B

Matrix: Water

Analyzed: 08/10/15 18:20

Instrument: TL01

File ID: 1508163-011

Batch: 1508163

Sequence: 5H10002

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: 15H0102

Matrix: Water
Prep Batch: 1508163
Prep Method: SM 4500-NH3 B
Lab Sample ID: 1508163-BS1

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia	0.400	0.393	98	90 - 110

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: Advanced Technology Laboratories-NV
Project: ATL-NV
Work Order: 15H0102

Matrix: Water
Prep Batch: 1508163

Analysis Method: SM 4500-NH3 D M
Prep Method: SM 4500-NH3 B
Laboratory ID: 1508163-MS1
Source Sample ID: 15H0030-02

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Ammonia	0.400	0.0714	0.467	99	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	REC.
Ammonia	0.400	0.495	106	6	20	75 - 125

DUPLICATES

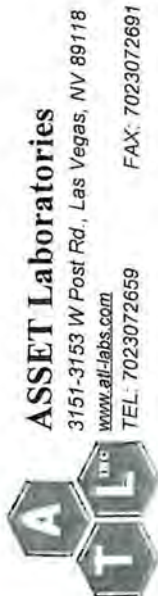
SC-700B-WDR-530

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

Matrix:	Water	Laboratory ID:	1508163-DUP1
Prep Batch:	1508163	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	0.0636	0.0681	7		20

* Values outside of QC limits



ASSET Laboratories

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www.asset-labs.com

TEL: 7023072659

FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

15H0102

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

05-Aug-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests
N016515-002A / SC-700B-WDR-530	Water	8/4/2015 9:30:00 AM	32OZP	SM4500-NH3C 1

ALERT!!
Level IV/QC

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

Please use PO#: N16515A Please email Invoices and Account Receivable Statements to AssetAP@assellaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assellaboratories.com by: Normal TAT

Please analyze for Ammonia. Ch2MHill Samples.

Date/Time	Date/Time
Relinquished by:  08/05/15	Received by: GSO# 528827130
Relinquished by:	Received by:  08/06/15 9:30 AM

ALERT !!**Level IV QC**

Log-in check list For level III data package

Client: ATLLab Number: 15H0102Received Date: 08/06/15**Sample receiving review**

	Yes	No	N/A	Comment
Was special login form received by login personnel?	☒			
Was COC received and signed by client and login personnel?	☒			
Were all 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:

grat

September 16, 2015

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.: N016780

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

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on September 01, 2015 by ASSET Laboratories .
The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in
accordance with the applicable laboratory certifications.

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

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

Sincerely,



Glen Gesmundo
QA Manager

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"Serving Clients with Passion and Professionalism"

ASSET Laboratories

Date: 16-Sep-15

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N016780
Contract No: IM3PLANT-AR

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N016780-001A	SC-100B-WDR-531	Water	9/1/2015 12:30:00 PM	9/1/2015	9/16/2015
N016780-001B	SC-100B-WDR-531	Water	9/1/2015 12:30:00 PM	9/1/2015	9/16/2015
N016780-001C	SC-100B-WDR-531	Water	9/1/2015 12:30:00 PM	9/1/2015	9/16/2015
N016780-002A	SC-700B-WDR-531	Water	9/1/2015 12:30:00 PM	9/1/2015	9/16/2015
N016780-002B	SC-700B-WDR-531	Water	9/1/2015 12:30:00 PM	9/1/2015	9/16/2015
N016780-002C	SC-700B-WDR-531	Water	9/1/2015 12:30:00 PM	9/1/2015	9/16/2015
N016780-002D	SC-700B-WDR-531	Water	9/1/2015 12:30:00 PM	9/1/2015	9/16/2015
N016780-002E	SC-700B-WDR-531	Water	9/1/2015 12:30:00 PM	9/1/2015	9/16/2015



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N016780

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 200.7:

Dilution was necessary on sample N016780-002 due to matrix.

Analytical Comments for EPA 200.8:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Copper on QC samples N016780-002E-MS and N016780-002E-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on Copper due to matrix interference.



ASSET Laboratories**ANALYTICAL RESULTS**

Print Date: 16-Sep-15

CLIENT:	CH2M HILL	Client Sample ID:	SC-100B-WDR-531
Lab Order:	N016780	Collection Date:	9/1/2015 12:30:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N016780-001		

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

RunID: WETCHEM_150902F	QC Batch: R102000			PrepDate			Analyst: LR
Specific Conductance	7000	0.10	0.10		umhos/cm	1	9/2/2015 11:15 AM

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

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ANALYTICAL RESULTS

Print Date: 16-Sep-15

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-531
Lab Order:	N016780	Collection Date:	9/1/2015 12:30:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N016780-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE

EPA 120.1

RunID: WETCHEM_150902F	QC Batch: R102000	PrepDate	Analyst: LR
Specific Conductance	7100	0.10	0.10
		umhos/cm	1
			9/2/2015 11:15 AM

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



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ASSET Laboratories

Date: 16-Sep-15

CLIENT: CH2M HILL
Work Order: N016780
Project: PG&E Topock, 658274.01.IM.OP.00
ANALYTICAL QC SUMMARY REPORT
TestCode: 120.1_WPGE

Sample ID	N016778-002ADUP	SampType: DUP	TestCode: 120.1_WPGE	Units: umhos/cm	Prep Date:	RunNo: 102000					
Client ID: ZZZZZZ	Batch ID: R102000	TestNo: EPA 120.1	Analysis Date: 9/2/2015		SeqNo: 2078060						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7720.000	0.10						7700	0.259	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: 16-Sep-15

CLIENT: CH2M HILL
Lab Order: N016780
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016780-001

Client Sample ID: SC-100B-WDR-531
Collection Date: 9/1/2015 12:30:00 PM
Matrix: WATER

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

RunID: WETCHEM_150902D	QC Batch: 51350			PrepDate	9/2/2015	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4200	50	50	mg/L	1	9/2/2015 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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ASSET Laboratories**ANALYTICAL RESULTS**

Print Date: 16-Sep-15

CLIENT: CH2M HILL
Lab Order: N016780
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016780-002

Client Sample ID: SC-700B-WDR-531
Collection Date: 9/1/2015 12:30:00 PM
Matrix: WATER

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

TOTAL FILTERABLE RESIDUE**SM2540C**

RunID: WETCHEM_150902D	QC Batch: 51350			PrepDate	9/2/2015	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4200	50	50	mg/L	1	9/2/2015 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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ASSET Laboratories

Date: 16-Sep-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL
Work Order: N016780

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

TestCode: 160.1_2540C_W

Sample ID	MB-51350	SampType: MBLK	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 9/2/2015	RunNo: 101995						
Client ID:	PBW	Batch ID: 51350	TestNo: SM2540C		Analysis Date: 9/2/2015	SeqNo: 2078009						
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-51350	SampType: LCS	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 9/2/2015	RunNo: 101995						
Client ID:	LCSW	Batch ID: 51350	TestNo: SM2540C		Analysis Date: 9/2/2015	SeqNo: 2078010						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		990.000	10	1000	0	99.0	80	120				

Sample ID	N016778-002A DUP	SampType: DUP	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 9/2/2015	RunNo: 101995						
Client ID:	ZZZZZZ	Batch ID: 51350	TestNo: SM2540C		Analysis Date: 9/2/2015	SeqNo: 2078013						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		4500.000	50						4390	2.47	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: 16-Sep-15

CLIENT: CH2M HILL
Lab Order: N016780
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016780-002

Client Sample ID: SC-700B-WDR-531
Collection Date: 9/1/2015 12:30:00 PM
Matrix: WATER

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

RunID: ICP2_150903B	QC Batch: 51352	PrepDate	9/2/2015	Analyst: CEI
Aluminum	ND 62	250	µg/L	5 9/3/2015 04:46 PM
Boron	1000 53	500	µg/L	5 9/3/2015 04:46 PM
Iron	ND 86	100	µg/L	5 9/3/2015 04:46 PM

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



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ASSET Laboratories

Date: 16-Sep-15

CLIENT: CH2M HILL

Work Order: N016780

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WPGEPBB

Sample ID	MB-51352	SampType:	MBLK	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	9/2/2015	RunNo:	102005
Client ID:	PBW	Batch ID:	51352	TestNo:	EPA 200.7			Analysis Date:	9/3/2015	SeqNo:	2078517
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Aluminum		ND		50							
Boron		15.542		100							
Iron		ND		20							

Sample ID	LCS1-51352	SampType:	LCS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	9/2/2015	RunNo:	102005
Client ID:	LCSW	Batch ID:	51352	TestNo:	EPA 200.7			Analysis Date:	9/3/2015	SeqNo:	2078518
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Aluminum		9591.678		50	10000	0	95.9	85	115		
Boron		4653.247		100	5000	0	93.1	85	115		
Iron		94.716		20	100.0	0	94.7	85	115		

Sample ID	N016778-001B-MS1	SampType:	MS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	9/2/2015	RunNo:	102005
Client ID:	ZZZZZZ	Batch ID:	51352	TestNo:	EPA 200.7			Analysis Date:	9/3/2015	SeqNo:	2078525
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Aluminum		10981.372		250	10000	0	110	75	125		
Boron		5591.408		500	5000	692.5	98.0	75	125		
Iron		90.332		100	100.0	0	90.3	75	125		

Sample ID	N016778-001B-MSD	SampType:	MSD	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	9/2/2015	RunNo:	102005
Client ID:	ZZZZZZ	Batch ID:	51352	TestNo:	EPA 200.7			Analysis Date:	9/3/2015	SeqNo:	2078528
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Aluminum		10990.676		250	10000	0	110	75	125	10980	0.0847 20
Boron		5636.910		500	5000	692.5	98.9	75	125	5591	0.810 20
Iron		89.799		100	100.0	0	89.8	75	125	90.33	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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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 16-Sep-15

CLIENT: CH2M HILL
Lab Order: N016780
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016780-001

Client Sample ID: SC-100B-WDR-531
Collection Date: 9/1/2015 12:30:00 PM
Matrix: WATER

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

RunID: ICP7_150904A	QC Batch: 51346			PrepDate	9/2/2015	Analyst: CEI
Manganese	4.8	0.023	0.50	µg/L	1	9/4/2015 10:00 AM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 16-Sep-15

CLIENT: CH2M HILL
Lab Order: N016780
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016780-002

Client Sample ID: SC-700B-WDR-531
Collection Date: 9/1/2015 12:30:00 PM
Matrix: WATER

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

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_150904A	QC Batch: 51346	PrepDate	9/2/2015	Analyst: CEI		
Antimony	ND	0.026	0.50	µg/L	1	9/4/2015 10:06 AM
Arsenic	ND	0.016	0.10	µg/L	1	9/14/2015 08:15 PM
Barium	18	0.072	1.0	µg/L	1	9/4/2015 10:06 AM
Copper	ND	1.3	5.0	µg/L	5	9/9/2015 02:46 AM
Lead	ND	0.053	1.0	µg/L	1	9/4/2015 10:06 AM
Manganese	74	0.023	0.50	µg/L	1	9/4/2015 10:06 AM
Molybdenum	20	0.029	0.50	µg/L	1	9/4/2015 10:06 AM
Nickel	3.8	0.038	1.0	µg/L	1	9/4/2015 10:06 AM
Zinc	ND	0.039	10	µg/L	1	9/4/2015 10:06 AM

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



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ASSET Laboratories

Date: 16-Sep-15

CLIENT: CH2M HILL

Work Order: N016780

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	MB-51346	SampType:	MBLK	TestCode:	200.8_W	Units:	µg/L	Prep Date:	9/2/2015	RunNo:	102018
Client ID:	PBW	Batch ID:	51346	TestNo:	EPA 200.8			Analysis Date:	9/4/2015	SeqNo:	2079112
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony ND 0.50
Barium ND 1.0
Lead ND 1.0
Manganese ND 0.50
Molybdenum ND 0.50
Nickel ND 1.0
Zinc 0.192 10

Sample ID	LCS-51346	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	9/2/2015	RunNo:	102018
Client ID:	LCSW	Batch ID:	51346	TestNo:	EPA 200.8			Analysis Date:	9/4/2015	SeqNo:	2079113
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony 9.902 0.50 10.00 0 99.0 85 115
Barium 101.701 1.0 100.0 0 102 85 115
Lead 10.030 1.0 10.00 0 100 85 115
Manganese 104.856 0.50 100.0 0 105 85 115
Molybdenum 9.809 0.50 10.00 0 98.1 85 115
Nickel 10.030 1.0 10.00 0 100 85 115
Zinc 101.631 10 100.0 0 102 85 115

Sample ID	N016778-001B-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	9/2/2015	RunNo:	102018
Client ID:	ZZZZZZ	Batch ID:	51346	TestNo:	EPA 200.8			Analysis Date:	9/4/2015	SeqNo:	2079122
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony 10.175 0.50 10.00 0.04298 101 75 125
Barium 115.852 1.0 100.0 14.56 101 75 125
Lead 10.021 1.0 10.00 0 100 75 125
Manganese 181.522 0.50 100.0 80.77 101 75 125

Qualifiers:

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



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL

Work Order: N016780

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	N016778-001B-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 9/2/2015	RunNo: 102018					
Client ID: ZZZZZZ	Batch ID: 51346		TestNo: EPA 200.8		Analysis Date: 9/4/2015	SeqNo: 2079122					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016778-001B-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 9/2/2015	RunNo: 102018					
Client ID: ZZZZZZ		Batch ID: 51346	TestNo: EPA 200.8		Analysis Date: 9/4/2015	SeqNo: 2079123					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual



Qualifiers:

B

ND

DO

Analyte detected in the associated Method Blank

Not Detected at the Reporting Limit

Surrogate Diluted Out

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E

R

Value above quantitation range

RPD outside accepted recovery limits

Calculations are based on raw values

H

S

Holding times for preparation or analysis exceeded

Spike/Surrogate outside of limits due to matrix interference

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ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N016780

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

TestCode: 200.8_W

Sample ID	MB-51382	SampleType: MBLK	TestCode: 200.8_W	Units: µg/L	Prep Date: 9/8/2015	RunNo: 102052
Client ID:	PBW	Batch ID: 51382	TestNo: EPA 200.8		Analysis Date: 9/9/2015	SeqNo: 2080720
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper		ND	1.0			

Sample ID	LCS-51382	SampleType: LCS	TestCode: 200.8_W	Units: µg/L	Prep Date: 9/8/2015	RunNo: 102052
Client ID:	LCSW	Batch ID: 51382	TestNo: EPA 200.8		Analysis Date: 9/9/2015	SeqNo: 2080721
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper		10.255	1.0	10.00	0	103 85 115

Sample ID	N016780-002E-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 9/8/2015	RunNo: 102052
Client ID:	ZZZZZZ	Batch ID: 51382	TestNo: EPA 200.8		Analysis Date: 9/9/2015	SeqNo: 2080732
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper		4.766	5.0	10.00	0	47.7 75 125

Sample ID	N016780-002E-MSD	SampleType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 9/8/2015	RunNo: 102052
Client ID:	ZZZZZZ	Batch ID: 51382	TestNo: EPA 200.8		Analysis Date: 9/9/2015	SeqNo: 2080733
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper		4.955	5.0	10.00	0	49.6 75 125 4.766 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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CLIENT: CH2M HILL
Work Order: N016780
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	MB-51419	SampleType: MBLK	TestCode: 200.8_W	Units: µg/L	Prep Date: 9/14/2015	RunNo: 102134						
Client ID: PBW	Batch ID: 51419	TestNo: EPA 200.8			Analysis Date: 9/14/2015	SeqNo: 2084045						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	LCS-51419	SampleType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102134		
Client ID:	LCSW	Batch ID:	51419	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2084046		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016780-002E-MS	SampleType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 9/14/2015	RunNo: 102134					
Client ID: ZZZZZZ	Batch ID: 51419	TestNo: EPA 200.8	Analysis Date: 9/14/2015	SeqNo: 2084050							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016780-002E-MSD	SampleType:	MSD	TestCode:	200.8_W	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102134		
Client ID:	ZZZZZZ	Batch ID:	51419	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2084051		
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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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 16-Sep-15

CLIENT: CH2M HILL
Lab Order: N016780
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016780-001

Client Sample ID: SC-100B-WDR-531
Collection Date: 9/1/2015 12:30:00 PM
Matrix: WATER

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

RunID: IC7_150904C	QC Batch: R102040				PrepDate		Analyst: RB
Hexavalent Chromium	620	0.75	10		µg/L	50	9/4/2015 03:49 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_150904A	QC Batch: 51346				PrepDate	9/2/2015	Analyst: CEI
Chromium	690	0.43	5.0		µg/L	5	9/4/2015 10:39 AM

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 16-Sep-15

CLIENT: CH2M HILL
Lab Order: N016780
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016780-002

Client Sample ID: SC-700B-WDR-531
Collection Date: 9/1/2015 12:30:00 PM
Matrix: WATER

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

RunID: IC7_150904A	QC Batch: R102019				PrepDate		Analyst: RB
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	9/4/2015 01:37 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: ICP7_150914C	QC Batch: 51419				PrepDate	9/14/2015	Analyst: CEI
Chromium	ND	0.086	1.0		µg/L	1	9/14/2015 08:15 PM

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



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ASSET Laboratories

Date: 16-Sep-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

N016780

Work Order:

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

TestCode: 200.8_W_CRPGE

Sample ID	MB-51346	SampType:	MBLK	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	9/2/2015	RunNo:	102018
Client ID:	PBW	Batch ID:	51346	TestNo:	EPA 200.8			Analysis Date:	9/4/2015	SeqNo:	2079081
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium ND 1.0

Sample ID	LCS-51346	SampType:	LCS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	9/2/2015	RunNo:	102018
Client ID:	LCSW	Batch ID:	51346	TestNo:	EPA 200.8			Analysis Date:	9/4/2015	SeqNo:	2079082
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium 10.361 1.0 10.00 0 104 85 115

Sample ID	N016778-001B-MS	SampType:	MS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	9/2/2015	RunNo:	102018
Client ID:	ZZZZZZ	Batch ID:	51346	TestNo:	EPA 200.8			Analysis Date:	9/4/2015	SeqNo:	2079091
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium 11.621 1.0 10.00 1.445 102 75 125

Sample ID	N016778-001B-MSD	SampType:	MSD	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	9/2/2015	RunNo:	102018
Client ID:	ZZZZZZ	Batch ID:	51346	TestNo:	EPA 200.8			Analysis Date:	9/4/2015	SeqNo:	2079092
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Chromium 11.425 1.0 10.00 1.445 99.8 75 125 11.62 1.70 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: N016780
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID	MB-51419	SampleType: MBLK	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 9/14/2015	RunNo: 102134						
Client ID: PBW		Batch ID: 51419	TestNo: EPA 200.8		Analysis Date: 9/14/2015	SeqNo: 2084090						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		ND		1.0								

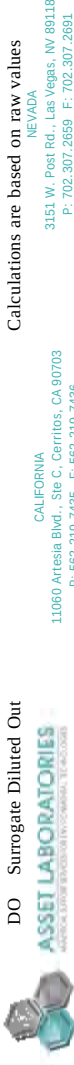
Sample ID	LCS-51419	SampleType:	LCS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102134		
Client ID:	LCSW	Batch ID:	51419	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2084091		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		9.412		1.0	10.00	0	94.1	85	115				

Sample ID	N016780-002E-MS	SampleType:	MS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102134		
Client ID:	ZZZZZZ	Batch ID:	51419	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2084095		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		9.121		1.0	10.00	0	91.2	75	125				

Sample ID	N016780-002E-MSD	SampleType:	MSD	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102134		
Client ID:	ZZZZZZ	Batch ID:	51419	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2084096		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		9.055		1.0	10.00	0	90.6	75	125	9.121	0.716	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: N016780
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	MB-R102019	SampleType: MBLK	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 102019
Client ID:	PBW	Batch ID: R102019	TestNo: EPA 218.6		Analysis Date: 9/4/2015	SeqNo: 2079898
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-R102019	SampleType: LCS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 102019
Client ID:	LCSW	Batch ID: R102019	TestNo: EPA 218.6		Analysis Date: 9/4/2015	SeqNo: 2079899
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		4.865	0.20	5.000	0	97.3 90 110

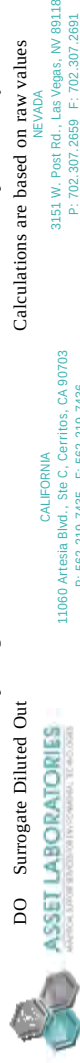
Sample ID	N016781-001ADUP	SampleType: DUP	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 102019
Client ID:	ZZZZZZ	Batch ID: R102019	TestNo: EPA 218.6		Analysis Date: 9/4/2015	SeqNo: 2079921
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		166.338	4.0			163.5 1.72 20

Sample ID	N016781-001AMS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 102019
Client ID:	ZZZZZZ	Batch ID: R102019	TestNo: EPA 218.6		Analysis Date: 9/4/2015	SeqNo: 2079922
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		263.218	4.0	100.0	163.5	99.7 90 110

Sample ID	N016781-001AMSD	SampleType: MSD	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 102019
Client ID:	ZZZZZZ	Batch ID: R102019	TestNo: EPA 218.6		Analysis Date: 9/4/2015	SeqNo: 2079923
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		266.732	4.0	100.0	163.5	103 90 110 263.2 1.33 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



"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL

Work Order: N016780

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	N016778-001CMS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 102019						
Client ID: ZZZZZZ		Batch ID: R102019	TestNo: EPA 218.6		Analysis Date: 9/4/2015	SeqNo: 2079926						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016780-002CMS	SampleType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 102019						
Client ID: ZZZZZZ		Batch ID: R102019	TestNo: EPA 218.6		Analysis Date: 9/4/2015	SeqNo: 2079927						
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

H

Holding times for preparation or analysis exceeded

S

Spike/Surrogate outside of limits due to matrix interference

25

CLIENT: CH2M HILL
Work Order: N016780
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	MB-R102040	SampleType: MBLK	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 102040						
Client ID:	PBW	Batch ID: R102040	TestNo: EPA 218.6	Analysis Date: 9/4/2015	SeqNo: 2079936							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	LCS-R102040	SampleType: LCS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 102040						
Client ID: LCSW		Batch ID: R102040	TestNo: EPA 218.6		Analysis Date: 9/4/2015	SeqNo: 2079937						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

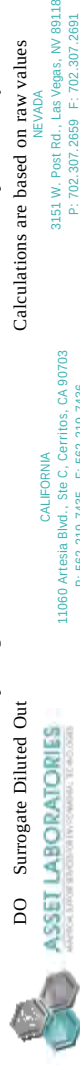
Sample ID	N016780-001BDUP	SampleType:	DUP	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:	RunNo:	102040			
Client ID:	ZZZZZZ	Batch ID:	R102040	TestNo:	EPA 218.6			Analysis Date:	SeqNo:	2079941			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016780-001BMS	SampleType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:	RunNo:	102040			
Client ID:	ZZZZZZ	Batch ID:	R102040	TestNo:	EPA 218.6			Analysis Date:	SeqNo:	2079942			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N016780-001BMSD	SampleType: MSD	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 102040					
Client ID: ZZZZZZ	Batch ID: R102040	TestNo: EPA 218.6	Analysis Date: 9/4/2015	SeqNo: 2079943							
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: 16-Sep-15

CLIENT:	CH2M HILL	Client Sample ID:	SC-100B-WDR-531
Lab Order:	N016780	Collection Date:	9/1/2015 12:30:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N016780-001		

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

RunID: WETCHEM_150902E	QC Batch: R101999	PrepDate	Analyst: LR
Turbidity	0.18 0.10 0.10	NTU	1 9/2/2015 12:10 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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3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691**"Serving Clients with Passion and Professionalism"**

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 16-Sep-15

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-531
Lab Order:	N016780	Collection Date:	9/1/2015 12:30:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N016780-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY

SM 2130B

RunID: WETCHEM_150902E	QC Batch: R101999	PrepDate	Analyst: LR
Turbidity	0.14	0.10	0.10
			NTU
			1
			9/2/2015 12:10 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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Date: 16-Sep-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL
Work Order: N016780
Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 2130_W

Sample ID	MB-R101999	SampType: MBLK	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 101999					
Client ID:	PBW	Batch ID: R101999	TestNo: SM 2130B		Analysis Date: 9/2/2015	SeqNo: 2078054					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	ND		0.10								

Sample ID	N016780-001ADUP	SampType: DUP	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 101999					
Client ID:	ZZZZZZ	Batch ID: R101999	TestNo: SM 2130B		Analysis Date: 9/2/2015	SeqNo: 2078056					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	0.180		0.10					0.1800	0	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: 16-Sep-15

CLIENT: CH2M HILL
Lab Order: N016780
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N016780-002

Client Sample ID: SC-700B-WDR-531
Collection Date: 9/1/2015 12:30:00 PM
Matrix: WATER

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

RunID: IC2_150902A	QC Batch: R101980				PrepDate		Analyst: QBM
Fluoride	2.3	0.12	1.0		mg/L	10	9/2/2015 06:39 PM

ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: IC2_150902A	QC Batch: R101980				PrepDate		Analyst: QBM
Sulfate	440	1.6	25		mg/L	50	9/2/2015 05:14 PM

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



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ASSET Laboratories

Date: 16-Sep-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N016780

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

TestCode: 300_W_FPGE

Sample ID	MB-R101980_F	SampleType: MBLK	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 101980					
Client ID:	PBW	Batch ID: R101980	TestNo: EPA 300.0		Analysis Date: 9/2/2015	SeqNo: 2077427					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride ND 0.10

Sample ID	LCS-R101980_F	SampleType: LCS	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 101980					
Client ID:	LCSW	Batch ID: R101980	TestNo: EPA 300.0		Analysis Date: 9/2/2015	SeqNo: 2077428					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 2.326 0.10 2.500 0 93.0 90 110

Sample ID	N016780-002BDUP	SampleType: DUP	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 101980					
Client ID:	ZZZZZZ	Batch ID: R101980	TestNo: EPA 300.0		Analysis Date: 9/2/2015	SeqNo: 2077434					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 2.430 1.0 2.340 3.77 20

Sample ID	N016780-002BMS	SampleType: MS	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 101980					
Client ID:	ZZZZZZ	Batch ID: R101980	TestNo: EPA 300.0		Analysis Date: 9/2/2015	SeqNo: 2077435					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 25.940 1.0 25.00 2.340 94.4 80 120

Sample ID	N016780-002BMSD	SampleType: MSD	TestCode: 300_W_FPG	Units: mg/L	Prep Date:	RunNo: 101980					
Client ID:	ZZZZZZ	Batch ID: R101980	TestNo: EPA 300.0		Analysis Date: 9/2/2015	SeqNo: 2077436					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 25.890 1.0 25.00 2.340 94.2 80 120 25.94 0.193 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: N016780

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R101980_SO4	SampleType: MBLK	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 101980
Client ID:	PBW	Batch ID: R101980	TestNo: EPA 300.0		Analysis Date: 9/2/2015	SeqNo: 2077461
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		ND	0.50			

Sample ID	LCS-R101980_SO4	SampleType: LCS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 101980
Client ID:	LCSW	Batch ID: R101980	TestNo: EPA 300.0		Analysis Date: 9/2/2015	SeqNo: 2077462
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		4.873	0.50	5.000	0	97.5 90 110

Sample ID	N016778-001ADUP	SampleType: DUP	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 101980
Client ID:	ZZZZZZ	Batch ID: R101980	TestNo: EPA 300.0		Analysis Date: 9/2/2015	SeqNo: 2077466
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		369.400	25			368.3 0.298 20

Sample ID	N016778-002AMS	SampleType: MS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 101980
Client ID:	ZZZZZZ	Batch ID: R101980	TestNo: EPA 300.0		Analysis Date: 9/2/2015	SeqNo: 2077467
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		995.100	50	500.0	506.2	97.8 80 120

Sample ID	N016778-002AMSD	SampleType: MSD	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 101980
Client ID:	ZZZZZZ	Batch ID: R101980	TestNo: EPA 300.0		Analysis Date: 9/2/2015	SeqNo: 2077468
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate		1010.100	50	500.0	506.2	101 80 120 995.1 1.50 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: 16-Sep-15

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-531
Lab Order:	N016780	Collection Date:	9/1/2015 12:30:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	WATER
Lab ID:	N016780-002		

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

RunID: WETCHEM_150911D	QC Batch: R102103	PrepDate	Analyst: RB
Nitrate/Nitrite as N	3.6 0.11	0.25 mg/L	5 9/11/2015

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected 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: 16-Sep-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N016780

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

TestCode: 4500N03F_W

Sample ID	MB-R102103	SampleType: MBLK	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 102103					
Client ID: PBW	Batch ID: R102103	TestNo: SM4500-NO3	Analysis Date: 9/11/2015	SeqNo: 2083106							
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-R102103	SampleType: LCS	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 102103					
Client ID: LCSW	Batch ID: R102103	TestNo: SM4500-NO3	Analysis Date: 9/11/2015	SeqNo: 2083107							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 0.494 0.050 0.5000 0 98.8 85 115

Sample ID	N016778-002DDUP	SampleType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:	RunNo:	102103			
Client ID:	ZZZZZZ	Batch ID:	R102103	TestNo:	SM4500-NO3			Analysis Date:	SeqNo:	2083111			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 3.370 0.25 3.496 3.69 20

Sample ID	N016778-002DMS	SampleType: MS	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 102103					
Client ID: ZZZZZZ	Batch ID: R102103	TestNo: SM4500-NO3	Analysis Date: 9/11/2015	SeqNo: 2083112							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 6.344 0.25 2.500 3.496 114 75 125

Sample ID	N016778-002DMSD	SampleType: MSD	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 102103					
Client ID: ZZZZZZ	Batch ID: R102103	TestNo: SM4500-NO3	Analysis Date: 9/11/2015	SeqNo: 2083113							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 6.217 0.25 2.500 3.496 109 75 125 2.02 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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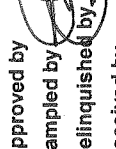
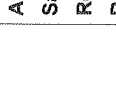
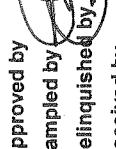
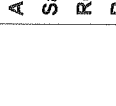
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CH2MHILL

CHAIN OF CUSTODY RECORD

Page 1 OF 1

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: 1 Liter Poly 4°C Lab H2SO4 Preservatives: 1 Liter Poly 4°C Lab H2SO4 Filtered: 1 Liter Poly 4°C Lab H2SO4 Holding Time: 28	DATE 9-1-15 TIME 1230 MATRIX Water	AMMONIA (SM4500NH3D) X	Anions (E300.0) F, SO4 X	CONDUCTIVITY (E120.1) X	E218.6 Lab Filtered X	Nitrate/Nitrite (SM4500NO3-E) X	TDS (SM2540C) X	Total Metals(E200.7 and E200.8) X	Total Metals(E200.8) Cr & Mn X	Turbidity (SM2130) X	1 Liter Poly 4°C X	500 ml Poly 4°C X	1 Liter Poly 4°C X	Number of Containers 3	COMMENTS 10016780 -1 10016780 -2
Task Order Project IM3PLANT-ARAR-WDR-531 Turnaround Time 10 Days Shipping Date: COC Number: 531													TOTAL NUMBER OF CONTAINERS 7	COMMENTS 10016780 -1 10016780 -2			

Approved by  Sampled by  Relinquished by  Received by Relinquished by Received by 	Signatures    	Date/Time 9-1-15 1300 9-1-15 1300 9-1-15 1300 9-1-15 1300 9-1-15 1300	Shipping Details Method of Shipment: FedEx On Ice: Yes / no 2-100 Airbill No: 1000 Lab Name: ASSET Laboratories Lab Phone: (702) 307-2659	ATTN: Sample Custody and Glen Gesmundo	Special Instructions: Total metals include: Cr,Al,Sb,As,Ba,B,Cu,Pb,Mn,Mo,Ni,Fe,Zn Report Copy to Shawn Duffy (530) 229-3303
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ASSET Laboratories

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

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

Cooler Received/Opened On: 9/1/2015 Workorder: N016780
 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? | Yes ☐ | No ☐ | NA ☒ |
| Was Client notified? | Yes ☐ | No ☐ | NA ☒ |

Comments:

Checklist Completed By: MBC for YRJ 9/2/2015

Reviewed By:  09/08/15



ASSET Laboratories

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www.ad-labs.com

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FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Truesdail

3337 Michelson Drive, Suite CN750

Irvine, CA 92612

TEL: (714) 730-6239

FAX: (714) 730-6462

Acct #:

Field Sampler:

02-Sep-15

Sample ID	Matrix	Date Collected	Bottle Type	SM4500-NH3D	Requested Tests
N016780-002A / SC-700B-WDR-531	Water	9/1/2015 12:30:00 PM	32OZP	1	

General Comments:

Please email sample receipt acknowledgement to the PM.

Please use PO#:N16780APlease 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

Date/Time	Date/Time
Relinquished by: YRJ	Received by: GSO TRK#: 529148477
Relinquished by:	Received by:

List of Analysts

ASSET Laboratories Work Order: N016780

Item	Pages
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.: 15I0076

Printed: 09/17/2015

CASE NARRATIVE

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

The samples were received and delivered with the chain of custody on September 3, 2015, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter will be kept in warm storage for additional 2 months before disposal.

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

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
SC-700B-WDR-531	15I0076-01	Water	Grab	09/01/2015 12:30	09/03/2015 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: 09/17/2015

SC-700B-WDR-531

15I0076-01 (Water)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
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Truesdail Laboratories, Inc

Wet Chemistry

Ammonia	0.0731	0.0500	mg/L	1	1509262	09/15/2015 09:42	AL	SM 4500-NH3 D M	
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Client: Advanced Technology Laboratories - NV
3151 W Post Road
Las Vegas, NV 89118

Attention: Marlon Cartin

Sample: One (1) Water Sample

Project Name: PG&E Topock Project

Project No.: N/A

Laboratory No.: 15I0076

Date: September 17, 2015

Collected: September 1, 2015

Received: September 3, 2015

ANALYST LIST

METHOD	PARAMETER	ANALYST
SM 4500-NH3 D	Ammonia	Alex Luna

ANALYSIS DATA SHEET

Inorganics

Client: Advanced Technology Laboratories-NV
Client Sample ID: SC-700B-WDR-531
Lab Sample ID: 15I0076-01
Project: ATL-NV

Date Sampled: 09/01/15 12:30 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	0.0731	0.0318	0.0500	1		AL	09/15/15 09:42	SM 4500-NH3 D M

METHOD BLANK DATA SHEET

SM 4500-NH3 D M

Client: Advanced Technology Laboratories-NV

Project: ATL-NV

Laboratory ID: 1509262-BLK1

Prepared: 09/14/15 10:27

Preparation: SM 4500-NH3 B

Matrix: Water

Analyzed: 09/15/15 09:19

Instrument: TL01

File ID: 5114002-010

Batch: 1509262

Sequence: 5114002

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: 15I0076

Matrix: Water
Prep Batch: 1509262
Prep Method: SM 4500-NH3 B
Lab Sample ID: 1509262-BS1

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia	0.400	0.420	105	90 - 110

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SC-700B-WDR-531

Client: Advanced Technology Laboratories-NV
 Project: ATL-NV
 Work Order: 15I0076

Matrix: Water
 Prep Batch: 1509262
 Analysis Method: SM 4500-NH3 D M
 Prep Method: SM 4500-NH3 B
 Laboratory ID: 1509262-MS1
 Source Sample ID: 15I0076-01

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Ammonia	0.400	0.0731	0.466	98	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	REC.
Ammonia	0.400	0.445	93	5	20	75 - 125

* Values outside of QC limits

DUPLICATES

Duplicate

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

Matrix: Water Laboratory ID: 1509262-DUP1
 Prep Batch: 1509262 Initial/Final: 10 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	15.5	15.6	0.2		20

* Values outside of QC limits



ASSET Laboratories

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www.asset-labs.com

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Subcontractor:

Truesdail

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Irvine, CA 92612

TEL: (714) 730-6239

FAX: (714) 730-6462

Acct #:

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

1510076

QC Level: Level IV

Field Sampler:

02-Sep-15

ALERT !!
Level IV QC

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests	
				SM4500-NH3D	
N016780-002A / SC-700B-WDR-531	Water	9/1/2015 12:30:00 PM	32OZP	1	

General Comments:

Please email sample receipt acknowledgement to the PM.

Please use PO# N16780A 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

Date/Time		Date/Time	
Relinquished by: YRJ	9/2/2015 3:12 PM	Received by: GSO TRK# 529148477	09/03/15 9:30 AM
Relinquished by:		Received by:	

ALERT !!
Level IV QC

Log-in check list
For level III data package

Client: ATLLab Number: 15I0076Received Date: 09/03/15**Sample receiving review**

	Yes	No	N/A	Comment
Was special login form received by login personnel?	✓			
Was COC received and signed by client and login personnel?	✓			
Were all 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: Dorelli

October 09, 2015

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.: N017131

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

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on October 06, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

 Nancy Libucano For

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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3151 W. Post Rd., Las Vegas, NV 89118
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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N017131

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 Chromium on QC samples N017131-001A-MS and N017131-001A-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N017131-001A-MS and N017131-001A-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 7199:

Matrix Spike Duplicate (MSD) is outside recovery criteria on QC sample N017131-001A-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.



ASSET Laboratories

Date: 09-Oct-15

CLIENT: CH2M HILL
Project: PG&E Topock, 658274.01.IM.OP.00
Lab Order: N017131
Contract No: IM3PLANT-AR

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N017131-001A	Phase Separator-Sludge-529	Soil	10/6/2015 2:00:00 PM	10/6/2015	10/9/2015



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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 09-Oct-15

CLIENT: CH2M HILL
Lab Order: N017131
Project: PG&E Topock, 658274.01.IM.OP.00
Lab ID: N017131-001

Client Sample ID: Phase Separator-Sludge-529
Collection Date: 10/6/2015 2:00:00 PM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PERCENT MOISTURE							
				D2216			
RunID: WETCHEM_151007F	QC Batch: R103458			PrepDate	Analyst: LR		
Percent Moisture	67.65	0.1000	0.1000	wt%	1	10/7/2015 12:00 PM	
HEXAVALENT CHROMIUM BY IC							
EPA 3060A				EPA 7199			
RunID: IC1_151008A	QC Batch: 52635			PrepDate	10/7/2015	Analyst: RB	
Hexavalent Chromium	74	0.16	3.1	mg/Kg-dry	5	10/8/2015 03:51 PM	
ANIONS BY ION CHROMATOGRAPHY							
				EPA 300.0			
RunID: IC2_151008B	QC Batch: R103486			PrepDate	Analyst: QBM		
Fluoride	28	0.74	3.1	mg/Kg-dry	1	10/8/2015 02:41 PM	
TOTAL MERCURY BY COLD VAPOR TECHNIQUE							
				EPA 7471A			
RunID: AA1_151009A	QC Batch: 52627			PrepDate	10/8/2015	Analyst: CEI	
Mercury	ND	0.0095	0.31	mg/Kg-dry	1	10/9/2015 09:42 AM	
TOTAL METALS BY ICP							
EPA 3050B				EPA 6010B			
RunID: ICP2_151008B	QC Batch: 52625			PrepDate	10/7/2015	Analyst: CEI	
Antimony	ND	0.21	6.2	mg/Kg-dry	1	10/8/2015 03:39 PM	
Arsenic	14	0.16	3.1	mg/Kg-dry	1	10/8/2015 03:39 PM	
Barium	58	0.024	3.1	mg/Kg-dry	1	10/8/2015 03:39 PM	
Beryllium	ND	0.050	3.1	mg/Kg-dry	1	10/8/2015 03:39 PM	
Cadmium	ND	0.16	3.1	mg/Kg-dry	1	10/8/2015 03:39 PM	
Chromium	3400	0.20	3.1	mg/Kg-dry	1	10/8/2015 03:39 PM	
Cobalt	6.6	0.078	3.1	mg/Kg-dry	1	10/8/2015 03:39 PM	
Copper	150	0.12	6.2	mg/Kg-dry	1	10/8/2015 03:39 PM	
Lead	ND	0.11	3.1	mg/Kg-dry	1	10/8/2015 03:39 PM	
Manganese	400	0.18	3.1	mg/Kg-dry	1	10/8/2015 03:39 PM	
Molybdenum	9.0	0.056	3.1	mg/Kg-dry	1	10/8/2015 03:39 PM	
Nickel	39	0.040	3.1	mg/Kg-dry	1	10/8/2015 03:39 PM	
Selenium	ND	0.21	3.1	mg/Kg-dry	1	10/8/2015 03:39 PM	
Silver	ND	0.047	3.1	mg/Kg-dry	1	10/8/2015 03:39 PM	
Thallium	ND	0.15	6.2	mg/Kg-dry	1	10/8/2015 03:39 PM	
Vanadium	33	0.24	3.1	mg/Kg-dry	1	10/8/2015 03:39 PM	

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



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 09-Oct-15

CLIENT:	CH2M HILL	Client Sample ID:	Phase Separator-Sludge-529
Lab Order:	N017131	Collection Date:	10/6/2015 2:00:00 PM
Project:	PG&E Topock, 658274.01.IM.OP.00	Matrix:	SOIL
Lab ID:	N017131-001		

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

TOTAL METALS BY ICP
EPA 3050B
EPA 6010B

RunID: ICP2_151008B	QC Batch: 52625	PrepDate: 10/7/2015	Analyst: CEI
Zinc	18 0.26	3.1	mg/Kg-dry 1 10/8/2015 03:39 PM

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


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ASSET Laboratories

Date: 09-Oct-15

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N017131

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

TestCode: 300_S

Sample ID	MB-R103486	SampleType:	MBLK	TestCode:	300_S	Units:	mg/Kg	Prep Date:	RunNo:	103486
Client ID:	PBS	Batch ID:	R103486	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2102053
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual

Fluoride ND 1.0

Sample ID	LCS-R103486	SampleType:	LCS	TestCode:	300_S	Units:	mg/Kg	Prep Date:	RunNo:	103486
Client ID:	LCSS	Batch ID:	R103486	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2102054
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual

Fluoride 26.440 1.0 25.00 0 106 90 110

Sample ID	N017131-001ADUP	SampleType:	DUP	TestCode:	300_S	Units:	mg/Kg-dry	Prep Date:	RunNo:	103486
Client ID:	ZZZZZZ	Batch ID:	R103486	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2102058
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual

Fluoride 27.601 3.1 27.60 0 20

Sample ID	N017146-001AMS	SampleType:	MS	TestCode:	300_S	Units:	mg/Kg-dry	Prep Date:	RunNo:	103486
Client ID:	ZZZZZZ	Batch ID:	R103486	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2102060
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual

Fluoride 81.395 2.6 64.07 27.63 83.9 80 120

Sample ID	N017146-001AMSD	SampleType:	MSD	TestCode:	300_S	Units:	mg/Kg-dry	Prep Date:	RunNo:	103486
Client ID:	ZZZZZZ	Batch ID:	R103486	TestNo:	EPA 300.0			Analysis Date:	SeqNo:	2102061
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual

Fluoride 82.420 2.6 64.07 27.63 85.5 80 120 81.39 1.25 20

Qualifiers:

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



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CLIENT: CH2M HILL
Work Order: N017131
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPGE

Sample ID	MB-52625	SampType: MBLK	TestCode: 6010_SPGE	Units: mg/Kg	Prep Date: 10/7/2015	RunNo: 103477					
Client ID:	PBS	Batch ID: 52625	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 10/8/2015	SeqNo: 2102017					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	0.546	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									
Manganese	ND	1.0									
Molybdenum	0.093	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	0.547	1.0									
Thallium	0.189	2.0									
Vanadium	ND	1.0									
Zinc	ND	1.0									

Sample ID	LCS-52625	SampType: LCS	TestCode: 6010_SPGE	Units: mg/Kg	Prep Date: 10/7/2015	RunNo: 103477					
Client ID: LCSS	Batch ID: 52625	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 10/8/2015	SeqNo: 2102019						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	24.040	2.0	25.00	0	96.2	85	115				
Arsenic	24.428	1.0	25.00	0	97.7	85	115				
Barium	24.684	1.0	25.00	0	98.7	85	115				
Beryllium	24.843	1.0	25.00	0	99.4	85	115				
Cadmium	24.483	1.0	25.00	0	97.9	85	115				
Chromium	24.626	1.0	25.00	0	98.5	85	115				
Cobalt	25.432	1.0	25.00	0	102	85	115				
Copper	24.200	2.0	25.00	0	96.8	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

E Value above quantitation range

R RPD outside accepted recovery limits

Calculations are based on raw values

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL

Work Order: N017131

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPGE

Sample ID	LCS-52625	SampleType: LCS	TestCode: 6010_SPGE	Units: mg/kg	Prep Date: 10/7/2015	RunNo: 103477					
Client ID: LCSS		Batch ID: 52625	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 10/8/2015	SeqNo: 2102019					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	24.542	1.0	25.00	0	98.2	85	115				
Manganese	50.060	1.0	50.00	0	100	85	115				
Molybdenum	24.344	1.0	25.00	0	97.4	85	115				
Nickel	25.728	1.0	25.00	0	103	85	115				
Selenium	24.522	1.0	25.00	0	98.1	85	115				
Silver	24.329	1.0	25.00	0	97.3	85	115				
Thallium	24.155	2.0	25.00	0	96.6	85	115				
Vanadium	24.437	1.0	25.00	0	97.7	85	115				
Zinc	25.405	1.0	25.00	0	102	85	115				

Sample ID	N017131-001A-MS	SampleType: MS	TestCode: 6010_SPGE	Units: mg/Kg-dry	Prep Date: 10/7/2015	RunNo: 103477					
Client ID: ZZZZZZ		Batch ID: 52625	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 10/8/2015	SeqNo: 2102025					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	81.117	6.2	76.92	6.102	97.5	75	125				
Arsenic	89.536	3.1	76.92	14.48	97.6	75	125				
Barium	125.859	3.1	76.92	57.69	88.6	75	125				
Beryllium	68.243	3.1	76.92	0	88.7	75	125				
Cadmium	67.077	3.1	76.92	0	87.2	75	125				
Chromium	3351.385	3.1	76.92	3391	-52.0	75	125				S
Cobalt	80.186	3.1	76.92	6.629	95.6	75	125				
Copper	249.742	6.2	76.92	149.2	131	75	125				S
Lead	69.351	3.1	76.92	0	90.2	75	125				
Manganese	575.583	3.1	153.8	404.5	111	75	125				
Molybdenum	76.957	3.1	76.92	8.977	88.4	75	125				
Nickel	112.768	3.1	76.92	38.97	95.9	75	125				
Selenium	61.303	3.1	76.92	0	79.7	75	125				
Silver	57.758	3.1	76.92	0	75.1	75	125				
Thallium	69.872	6.2	76.92	0	90.8	75	125				
Vanadium	103.302	3.1	76.92	33.23	91.1	75	125				

Qualifiers:

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

CLIENT: CH2M HILL

Work Order: N017131

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPGE

Sample ID	N017131-001A-MS	SampType: MS	TestCode: 6010_SPGE	Units: mg/Kg-dry	Prep Date: 10/7/2015	RunNo: 103477					
Client ID: ZZZZZZ	Batch ID: 52625	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 10/8/2015	SeqNo: 2102025						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N017131-001A-MSD	SampleType: MSD	TestCode: 6010_SPGE	Units: mg/Kg-dry	Prep Date: 10/7/2015	RunNo: 103477					
Client ID: ZZZZZZ		Batch ID: 52625	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 10/8/2015	SeqNo: 2102026					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL

Work Order: N017131

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

TestCode: 7199_S_PGE

Sample ID	MB-52635	SampleType: MBLK	TestCode: 7199_S_PGE	Units: mg/Kg	Prep Date: 10/7/2015	RunNo: 103493
Client ID:	PBS	Batch ID: 52635	TestNo: EPA 7199	EPA 3060A	Analysis Date: 10/8/2015	SeqNo: 2102439
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-52635	SampleType: LCS	TestCode: 7199_S_PGE	Units: mg/Kg	Prep Date: 10/7/2015	RunNo: 103493
Client ID:	LCSS	Batch ID: 52635	TestNo: EPA 7199	EPA 3060A	Analysis Date: 10/8/2015	SeqNo: 2102440
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		3.923	0.20	4.000	0	98.1 80 120

Sample ID	N017131-001A-MS_I	SampleType: MS	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 10/7/2015	RunNo: 103493
Client ID:	ZZZZZZ	Batch ID: 52635	TestNo: EPA 7199	EPA 3060A	Analysis Date: 10/8/2015	SeqNo: 2102441
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		2459.388	31	2153	74.48	111 75 125

Sample ID	N017131-001A-REP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 10/7/2015	RunNo: 103493
Client ID:	ZZZZZZ	Batch ID: 52635	TestNo: EPA 7199	EPA 3060A	Analysis Date: 10/8/2015	SeqNo: 2102445
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		76.035	3.1			74.48 2.06 20

Sample ID	N017131-001A-DUP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 10/7/2015	RunNo: 103493
Client ID:	ZZZZZZ	Batch ID: 52635	TestNo: EPA 7199	EPA 3060A	Analysis Date: 10/8/2015	SeqNo: 2102446
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium		85.477	3.1			74.48 13.7 20

Qualifiers:

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



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ANALYTICAL QC SUMMARY REPORT

CLIENT: CH2M HILL
Work Order: N017131
Project: PG&E Topock, 658274.01.IM.OP.00

TestCode: 7199_S_PGE

Sample ID	N017146-001AREP	SampleType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 10/7/2015	RunNo: 103493						
Client ID:	ZZZZZZ	Batch ID: 52635	TestNo: EPA 7199	EPA 3060A	Analysis Date: 10/8/2015	SeqNo: 2102448						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N017131-001A-MS	SampleType: MS	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 10/7/2015	RunNo: 103493						
Client ID:	ZZZZZZ	Batch ID: 52635	TestNo: EPA 7199	EPA 3060A	Analysis Date: 10/8/2015	SeqNo: 2102449						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N017131-001A-MSD	SampleType: MSD	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 10/7/2015	RunNo: 103493						
Client ID: ZZZZZZ		Batch ID: 52635	TestNo: EPA 7199	EPA 3060A	Analysis Date: 10/8/2015	SeqNo: 2102450						
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: N017131
Project: PG&E Topock, 658274.01.IM.OP.00

ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S_PGE

Sample ID	MB-52627	SampleType: MBLK	TestCode: 7471_S_PGE	Units: mg/Kg	Prep Date: 10/8/2015	RunNo: 103495
Client ID:	PBS	Batch ID: 52627	TestNo: EPA 7471A		Analysis Date: 10/9/2015	SeqNo: 2102474
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury		0.005	0.10			

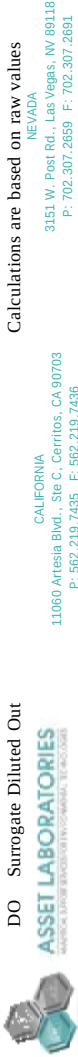
Sample ID	LCS-52627	SampleType: LCS	TestCode: 7471_S_PGE	Units: mg/Kg	Prep Date: 10/8/2015	RunNo: 103495
Client ID:	LCSS	Batch ID: 52627	TestNo: EPA 7471A		Analysis Date: 10/9/2015	SeqNo: 2102475
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury		0.381	0.10	0.4167	0	91.4 75 125

Sample ID	N017131-001A-MS	SampleType: MS	TestCode: 7471_S_PGE	Units: mg/Kg-dry	Prep Date: 10/8/2015	RunNo: 103495
Client ID:	ZZZZZZ	Batch ID: 52627	TestNo: EPA 7471A		Analysis Date: 10/9/2015	SeqNo: 2102476
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury		1.255	0.31	1.288	0.06808	92.2 75 125

Sample ID	N017131-001A-MSD	SampleType: MSD	TestCode: 7471_S_PGE	Units: mg/Kg-dry	Prep Date: 10/8/2015	RunNo: 103495
Client ID:	ZZZZZZ	Batch ID: 52627	TestNo: EPA 7471A		Analysis Date: 10/9/2015	SeqNo: 2102477
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury		1.218	0.31	1.279	0.06808	89.8 75 125 1.255 3.04 20

Qualifiers:

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



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CLIENT: CH2M HILL

Work Order: N017131

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

ANALYTICAL QC SUMMARY REPORT

TestCode: PMOIST

Sample ID	MB-R103458	SampleType: MBLK	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 103458						
Client ID:	PBS	Batch ID: R103458	TestNo: D2216		Analysis Date: 10/7/2015	SeqNo: 2100662						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	N017131-001ADUP	SampType: DUP	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 103458						
Client ID: ZZZZZZ		Batch ID: R103458	TestNo: D2216		Analysis Date: 10/7/2015	SeqNo: 2100664						
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

13 of 13

CHAIN OF CUSTODY RECORD

Approved by 	Signatures 	Date/Time 10-6-15 1500	Shipping Details Method of Shipment: FedEx On Ice: Yes ☒ no ☐ 1.1, 1.2°C Airbill No: 10661501708 Lab Name: Lab Phone: 10/6/15 1911	ATTN: Sample Custody	Special Instructions: Samples composited from April, May, and June
Sampled by 		10-6-15 1500			
Relinquished by 		10-6-17 1200			
Received by 		10/6/15 1708			
Relinquished by 					
Received by 					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: 10/6/2015

Workorder: N017131

Rep sample Temp (Deg C): 1.1/1.8

IR Gun ID: 1

Temp Blank: ☒ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA

Packing Material Used: None

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

Sample Receipt Checklist

- | | | | |
|---|---|-----------------------------|---|
| 1. Shipping container/cooler in good condition? | Yes ☒ | 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 B forMBC PA 10/7/2015

Reviewed By:

gog 10/8/15

List of Analysts

ASSET Laboratories Work Order: N017131

Item	Pages
Quennie Manimtim	EPA 300.0
Claire Ignacio	EPA 6010, EPA 7471A
Ryan Balilu	EPA 7199
Lilia Ramit	D2216



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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
1 SL-100-B	7-7-15	13:05	7-7-15	13:12	HQ4400D	7-7-15	0011	-57.74	Ryan Phelps	7.26
Notes:										
2 SL-700-B	7-7-16	13:00	7-7-15	13:12	HQ4400D	7-7-15	0011	-57.74	Ryan Phelps	7.20
Notes:										
3 SL-700	7-7-15	13:03	7-7-15	13:12	HQ4400D	7-7-15	0011	-57.74	Ryan Phelps	8.22
Notes:										
Notes:										
Notes:										
Notes:										
Notes:										

Reminder: WDR Required pH Range for the Effluent (SC-700B) is: 6.5 - 8.4

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
1000	8-4-15	9:20	8-4-15	9:24	HQ440D	8-4-15	7:45	57.84	Ryan Phelps	7.37

507

8:4-15	8:4-15	8:4-15	8:4-15	7:45	-57-84	Ryan Phelps	7-15
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Notes:

SR-DE-1	8-1-15	9:05	8-4-15	9:42	HQ440D	8-4-15	7:45	-57.84	Ryan Phelps	7.63
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Notes:

"Sc-TN-3D	8-4-15	9:10	8-4-15	9:49	HQ44017	8-4-15	7:45	-57.84	Ryan Phelps	7.64
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Notes:

[illegible]

Notes:

[illegible]

Notes:

Notes:

Reminder: WDR Required pH Range for the Effluent (SC-700B) is: 6.5 - 8.4

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
TW-026	9-1-15	1230	9-1-15	1245	HQ440D	9-1-15	0800	-57.87	Tom Phelps	7.68

Notes:

TW-03D	9-1-15	1230	9-1-15	1246	HQ440D	9-1-15	0800	-57.87	Tom Phelps	7.52
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Notes:

SC-700B	9-1-15	1230	9-1-15	1247	HQ440D	9-1-15	0800	-57.87	Tom Phelps	7.22
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Notes:

SC-100B	9-1-15	1230	9-1-15	1248	HQ440D	9-1-15	0800	-57.87	Tom Phelps	7.38
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Notes:

PE-1	9-1-15	1235	9-1-15	1249	HQ440D	9-1-15	0800	-57.87	Tom Phelps	7.62
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Notes:

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Notes:

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Notes:

Reminder: WDR Required pH Range for the Effluent (SC-700B) is: 6.5 - 8.4

