



**Pacific Gas and  
Electric Company®**

**Curt Russell**  
Topock Site Manager  
Environmental Remediation

Topock Compressor Station  
145453 National Trails Hwy  
Needles, CA 92363

Mailing Address  
P.O. Box 337  
Needles, CA 92363

760.791.5884  
Fax: 760.326.5542  
Email: gcr4@pge.com

October 15, 2019

Pamela S. Innis  
Topock Remedial Project Manager  
CHF Remedial Project Manager  
Bureau of Land Management - Arizona State Office  
One North Central Avenue, Suite 800  
Phoenix, AZ 85004-4427  
Office Phone: 602.417.9578  
Cell: 303.501.5685

Scot Stormo  
California Regional Water Quality Control Board  
Colorado River Basin Region  
73-720 Fred Waring Drive, Suite 100  
Palm Desert, CA 92260

**Subject: Topock IM-3 Third Quarter 2019 Monitoring Report  
PG&E Topock Compressor Station, Needles, California  
Interim Measure No. 3 Groundwater Treatment System  
(Document ID: PGE20191015A)**

Dear Ms. Innis and Mr. Stormo:

Enclosed is the Third Quarter 2019 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 942,521,499 gallons of water and removed approximately 9,570 pounds of total chromium from August 1, 2005 through September 30, 2019.

Pamela S. Innis  
Scot Stormo  
October 15, 2019  
Page 2

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 blue ink, appearing to read "C. Russell", is positioned above the printed name and title.

Curt Russell  
Topock Site Manager

Enclosures:

Topock IM-3 Third Quarter 2019 Monitoring Report

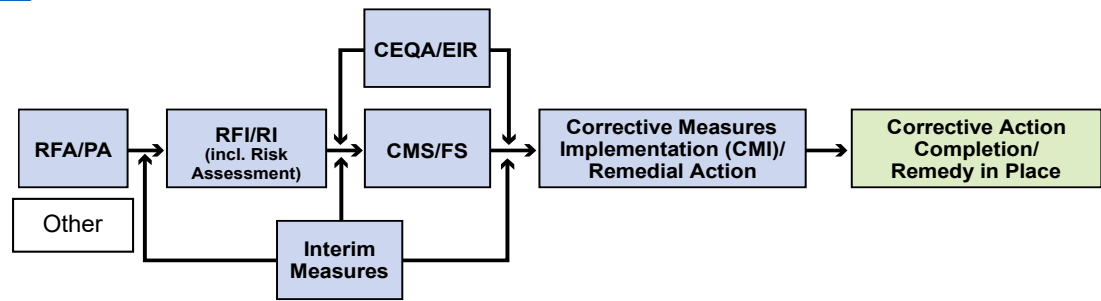
cc: Aaron Yue, California Department of Toxic Substances Control

## Topock Project Executive Abstract

<p>Document Title:</p> <p>Topock IM-3 Third Quarter 2019 Monitoring Report</p> <p>Submitting Agency/Author: U.S. Department of the Interior and Regional Water Quality Control Board</p> <p>Final Document? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Date of Document: October 15, 2019</p> <p>Who Created this Document?: (i.e. PG&amp;E, DTSC, DOI, Other)</p> <p>PG&amp;E</p> <p>Document ID Number:</p> <p>PGE20191015A</p>
<p>Priority Status: <input type="checkbox"/> <b>HIGH</b> <input type="checkbox"/> <b>MED</b> <input checked="" type="checkbox"/> <b>LOW</b></p> <p>Is this time critical? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Action Required:</p> <p><input checked="" type="checkbox"/> Information Only <input type="checkbox"/> Review &amp; Comment</p> <p>Return to: _____</p> <p>By Date: _____</p> <p><input type="checkbox"/> Other / Explain:</p>
<p>Type of Document:</p> <p><input type="checkbox"/> Draft <input checked="" type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Memo</p> <p><input type="checkbox"/> Other / Explain:</p>	<p>What does this information pertain to?</p> <p><input type="checkbox"/> Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA)</p> <p><input type="checkbox"/> RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment)</p> <p><input type="checkbox"/> Corrective Measures Study (CMS)/Feasibility Study (FS)</p> <p><input type="checkbox"/> Corrective Measures Implementation (CMI)/Remedial Action</p> <p><input type="checkbox"/> California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR)</p> <p><input checked="" type="checkbox"/> Interim Measures</p> <p><input type="checkbox"/> Other / Explain:</p>
<p>What is the consequence of NOT doing this item? What is the consequence of DOING this item?</p> <p>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.</p>	<p>Is this a Regulatory Requirement?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, why is the document needed?</p>
<p>Other Justification/s:</p> <p><input type="checkbox"/> Permit <input type="checkbox"/> Other / Explain:</p>	
<p>Brief Summary of attached document:</p> <p>This report covers the Interim Measures No. 3 (IM-3) groundwater treatment system monitoring activities during the Third Quarter 2019 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.</p> <p>Written by: PG&amp;E</p>	
<p>Recommendations:</p> <p>This report is for your information only.</p>	
<p>How is this information related to the Final Remedy or Regulatory Requirements?</p> <p>The Topock IM-3 Third Quarter 2019 Monitoring Report is related to the Interim Measure. PG&amp;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.</p>	
<p>Other requirements of this information?</p> <p>None.</p>	

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](http://www.dtsc-topock.com)).



**Legend**

RFA/PA – RCRA Facility Assessment/Preliminary Assessment

RFI/RI – RCRA Facility Investigation/CERCLA Remedial Investigation (including Risk Assessment)

CMS/FS – RCRA Corrective Measure Study/CERCLA Feasibility Study

CEQA/EIR – California Environmental Quality Act/Environmental Impact Report





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

### **Third Quarter 2019 Monitoring Report Interim Measure No. 3 Groundwater Treatment System**

October 15, 2019

Pacific Gas and Electric Company

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



Third Quarter 2019 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, 2019

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



Dennis Fink, P.E.  
Project Engineer



## Contents

<b>Acronyms and Abbreviations .....</b>	<b>iii</b>
<b>1. Introduction .....</b>	<b>1-1</b>
<b>2. Sampling Station Locations.....</b>	<b>2-1</b>
<b>3. Description of Activities .....</b>	<b>3-1</b>
<b>4. Groundwater Treatment System Flow Rates .....</b>	<b>4-1</b>
4.1 July 2019.....	4-1
4.2 August 2019.....	4-3
4.3 September 2019.....	4-4
<b>5. Sampling and Analytical Procedures.....</b>	<b>5-1</b>
<b>6. Analytical Results .....</b>	<b>6-1</b>
<b>7. Conclusions.....</b>	<b>7-1</b>
<b>8. Certification .....</b>	<b>8-1</b>

## Appendix

- A Third Quarter 2019 Laboratory Analytical Reports

## Tables

- |   |  |
|---|--|
| 1 | Sampling Station Descriptions  |
| 2 | Flow Monitoring Results  |
| 3 | Sample Collection Dates  |
| 4 | Topock IM-3 Waste Discharge ARARs Influent Monitoring Results                    |
| 5 | Topock IM-3 Waste Discharge ARARs Effluent Monitoring Results                    |
| 6 | Topock IM-3 Waste Discharge ARARs Reverse Osmosis Concentrate Monitoring Results |
| 7 | Topock IM-3 Waste Discharge ARARs Sludge Monitoring Results                      |
| 8 | Topock IM-3 Waste Discharge ARARs Monitoring Information                         |

## Figures

- |                |  |
|----------------|--|
| 1              | IM-3 Project Site Features   |
| TP-PR-10-10-04 | Raw Water Storage and Treated Water Storage Tanks and Sampling Locations |
| PR-10-03       | Reverse Osmosis System Sampling and Metering Locations (1 of 2)          |
| PR-10-04       | Reverse Osmosis System Sampling and Metering Locations (2 of 2)          |
| TP-PR-10-10-06 | Sludge Storage Tanks Sampling Locations                                  |
| TP-PR-10-10-03 | Extraction Wells - Influent Metering Locations                           |
| TP-PR-10-10-11 | Injection Wells - Effluent Metering Locations                            |

## Acronyms and Abbreviations

ARARs	Applicable or Relevant and Appropriate Requirements
ASSET	ASSET Laboratories
C/RAWP	Groundwater Remedy Construction/Remedial Action Work Plan
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
PLC	programmable logic controller
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

## 1. 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 2019.** 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.

## **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.

### 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 2019, extraction well TW-3D operated at a target pumping rate of 135 gallons per minute (gpm), excluding periods of planned and unplanned downtime. Extraction well PE-01 was only operated to collect a sample, and extraction wells TW-2D and TW-2S were not operated during the Third Quarter 2019. The recorded operational run time for the IM-3 groundwater extraction system (combined or individual pumping), by month, was approximately:

- 92.3 percent during July 2019
- 83.6 percent during August 2019
- 96.5 percent during September 2019

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 2019 are detailed in Section 4.

## 4. Groundwater Treatment System Flow Rates

The Third Quarter 2019 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 15,973,091 gallons of extracted groundwater during the Third Quarter 2019. Eight containers of solids (sludge) were transported offsite from the IM-3 facility during Third Quarter 2019.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 9.2 percent downtime during Third Quarter 2019) 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 2019

During July 2019, extraction well TW-3D operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during July 2019. Extraction well PE-01 was only operated to collect a sample. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 92.3 percent during the July 2019 reporting period.

The IM-3 facility treated approximately 5,506,761 gallons of extracted groundwater during July 2019. The IM-3 facility treated 0 gallons of purge water and 13,500 gallons of groundwater from injection well backwashing/re-development during July 2019. Three containers of solids from the IM-3 facility were transported offsite during July 2019.

Periods of planned and unplanned extraction system down time (that together resulted an approximately 7.7 percent downtime during July 2019) are summarized below.

- **July 1, 2019 (unplanned):** The extraction well system was offline from 3:44 p.m. to 5:22 p.m. because of a high level in T-100 due to backwashing of the injection wells. Extraction system downtime was 1 hour 38 minutes.
- **July 3, 2019 (planned):** The extraction well system was offline from 10:26 a.m. to 11:48 a.m. due to replacing microfilter modules and testing of the pipeline critical alarms and leak detection system. Extraction system downtime was 1 hour 22 minutes.
- **July 10, 2019 (unplanned):** The extraction well system was offline from 3:00 p.m. to 3:52 p.m. due to air compressor failure. The air compressor overheated due to extremely high weather temperatures and shutdown. Shading was placed in front of the compressor unit to block direct afternoon sunlight and the unit was returned to service. Extraction system downtime was 52 minutes.
- **July 10, 2019 (unplanned):** The extraction well system was offline from 9:36 p.m. to 10:50 p.m. due to a high-water level in Raw Water Storage Tank (T-100). The extraction wells were shut down so the tank could drain below the high level alarm setpoint. Extraction system downtime was 1 hour 14 minutes.
- **July 11-12, 2019 (unplanned):** The extraction well system was offline from 5:38 a.m. to 7:26 a.m. on July 11, 2019 and from 7:54 a.m. on July 11, 2019 to 1:46 p.m. on July 12, 2019 due to leaking microfilter modules and a failed air pressure regulator. The facility was down until a replacement regulator arrived and was installed. While the facility was down, a leak was fixed on the Feed Tank on the microfilter skid 4 (T-501). Extraction system downtime was 1 day, 7 hours 40 minutes.



- **July 12, 2019 (unplanned):** The extraction well system was offline from 4:20 p.m. to 5:42 p.m. due to a high-water level in T-100. The extraction wells were shut down so the tank could drain. Extraction system downtime was 1 hour 22 minutes.
- **July 13, 2019 (unplanned):** The extraction well system was offline from 12:20 p.m. to 12:30 p.m., from 12:54 p.m. to 7:36 p.m., and from 8:00 p.m. to 10:00 p.m. due to RO system problems. Incoming power from the City of Needles was adversely affecting the Primary RO system. The Plant Manager advised the plant operator to keep the facility down until the power became stable and/or temperatures dropped. Extraction system downtime was 8 hours 52 minutes.
- **July 14, 2019 (unplanned):** The extraction well system was offline from 7:56 a.m. to 8:00 a.m. due to a programmable logic controller (PLC) and human machine interface (HMI) connectivity issue. Extraction system downtime was 4 minutes.
- **July 14, 2019 (unplanned):** The extraction well system was offline from 1:42 p.m. to 1:46 p.m.; from 1:48 p.m. to 1:52 p.m.; from 1:54 p.m. to 1:56 p.m.; from 1:58 p.m. to 2:18 p.m.; from 2:20 p.m. to 2:22 p.m.; from 2:24 p.m. to 2:42 p.m.; and from 2:44 p.m. to 2:52 p.m. because of a high level in T-100 due to backwashing of the injection wells. Extraction system downtime was 58 minutes.
- **July 14, 2019 (unplanned):** The extraction well system was offline from 2:54 p.m. to 3:04 p.m. and from 3:06 p.m. to 3:10 p.m. due to a PLC and HMI connectivity issue. Extraction system downtime was 14 minutes.
- **July 15, 2019 (unplanned):** The extraction well system was offline from 8:44 a.m. to 9:34 a.m. due to City of Needles Utility Services being onsite to fix incoming voltage. Extraction system downtime was 50 minutes.
- **July 18, 2019 (unplanned):** The extraction well system was offline from 1:52 p.m. to 2:40 p.m. due to a high-water level in T-100. The extraction wells were shut down so the tank could drain below the high level alarm setpoint. Extraction system downtime was 48 minutes.
- **July 18, 2019 (unplanned):** The extraction well system was offline from 8:30 p.m. to 10:06 p.m. due to high weather temperatures causing a blower to shut down. A portable cooling unit was placed in front of the blower unit to help with temperatures. The blower unit was reset and returned to service. Extraction system downtime was 1 hour 36 minutes.
- **July 18, 2019 (unplanned):** The extraction well system was offline from 10:26 p.m. to 10:48 p.m. due to a low-flow ferrous chloride rate alarm. An adjustment was made to the backflow pressure valve and the facility was returned to service. Extraction system downtime was 22 minutes.
- **July 20, 2019 (unplanned):** The extraction well system was offline from 10:16 a.m. to 10:30 a.m. due to a high-water level in T-100 caused by rinsing the microfilter modules before the chemical cleaning. Extraction system downtime was 14 minutes.
- **July 21, 2019 (unplanned):** The extraction well system was offline from 5:08 a.m. to 6:18 a.m. to change out the microfilter modules. Extraction system downtime was 1 hour 10 minutes.
- **July 23, 2019 (unplanned):** The extraction well system was offline from 8:18 p.m. to 9:16 p.m. due to a high-water level in T-100. The extraction wells were shut down so the tank could drain below the high level alarm setpoint. Extraction system downtime was 58 minutes.
- **July 26, 2019 (unplanned):** The extraction well system was offline from 4:10 a.m. to 4:50 a.m. due to a high-water level in T-100. The extraction wells were shut down so the tank could drain below the high level alarm setpoint. Extraction system downtime was 40 minutes.
- **July 28, 2019 (unplanned):** The extraction well system was offline from 11:00 a.m. to 12:20 p.m. due to backwashing of the injection wells. Extraction system downtime was 1 hour 20 minutes.
- **July 30, 2019 (unplanned):** The extraction well system was offline from 6:46 p.m. to 7:26 p.m. due to a high-water level in T-100. The extraction wells were shut down so the tank could drain below the high level alarm setpoint. Extraction system downtime was 40 minutes.
- **July 31, 2019 (unplanned):** The extraction well system was offline from 6:14 p.m. to 6:58 p.m. due to a high-water level in T-100. The extraction wells were shut down so the tank could drain below the high level alarm setpoint. Extraction system downtime was 44 minutes.

## 4.2 August 2019

During August 2019, extraction well TW-3D operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during August 2019. Extraction well PE-01 was only operated to collect a sample. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 83.6 percent during the August 2019 reporting period.

The IM-3 facility treated approximately 4,940,564 gallons of extracted groundwater during August 2019. The IM-3 facility also treated 38,350 gallons of Groundwater Remedy wastewater and sampling purge water from well construction activities, pursuant to the approved Groundwater Remedy Construction/Remedial Action Work Plan (C/RAWP) and the IM-3 ARARs. The IM-3 facility also treated 11,600 gallons of groundwater from injection well backwashing/re-development during August 2019. No containers of solids from the IM-3 facility were transported offsite during August 2019.

Periods of planned and unplanned extraction system down time (that together resulted an approximately 16.4 percent downtime during August 2019) are summarized below.

- **August 2, 2019 (unplanned):** The extraction well system was offline from 10:40 a.m. to 12:06 p.m. and from 4:26 p.m. to 4:50 p.m. because of a high level in Raw Water Storage Tank (T-100) due to backwashing of the injection wells. Extraction system downtime was 1 hour 50 minutes.
- **August 2-3, 2019 (unplanned):** The extraction well system was offline from 11:36 p.m. on August 2, 2019 to 12:22 a.m. on August 3, 2019 due to a high-water level in T-100. The facility was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 46 minutes.
- **August 4, 2019 (unplanned):** The extraction well system was offline from 5:40 p.m. to 5:56 p.m. due to a blower failure. The blower overheated due to severe temperatures and shut down. A cooling unit was placed in front of the blower to lower the internal blower temperature and the unit was returned to service. Extraction system downtime was 16 minutes.
- **August 5, 2019 (unplanned):** The extraction well system was offline from 4:30 a.m. to 5:32 a.m. due to a high-water level in T-100. The extraction wells were shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 1 hour 2 minutes.
- **August 7, 2019 (unplanned):** The extraction well system was offline from 12:18 a.m. to 1:16 a.m. due to a high water level in T-100. The extraction wells were shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 58 minutes.
- **August 8, 2019 (unplanned):** The extraction well system was offline from 5:16 p.m. to 5:22 p.m. due to a City of Needles power outage. Extraction system downtime was 6 minutes.
- **August 8, 2019 (unplanned):** The extraction well system was offline from 7:08 p.m. to 7:52 p.m. due to a high water level in T-100. The extraction wells were shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 44 minutes.
- **August 9, 2019 (unplanned):** The extraction well system was offline from 6:36 a.m. to 8:00 a.m. due to replacing microfilter modules. Extraction system downtime was 1 hour 24 minutes.
- **August 10, 2019 (unplanned):** The extraction well system was offline from 4:10 a.m. to 4:42 a.m. due to a high water level in T-100. The extraction wells were shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 32 minutes.
- **August 10, 2019 (planned):** The extraction well system was offline from 8:06 a.m. to 8:40 a.m. due to testing of the pipeline critical alarms and leak detection system. Extraction system downtime was 34 minutes.
- **August 12-16, 2019 (planned):** The extraction well system was offline from 5:52 a.m. on August 12, 2019 to 8:40 a.m. on August 15, 2019; from 10:02 a.m. to 12:44 p.m. August 15, 2019; and from 1:58 p.m. on August 15, 2019 to 2:44 p.m. on August 16, 2019 for the semiannual scheduled maintenance. Extraction system downtime was 4 days 6 hours 16 minutes.

- **August 17, 2019 (unplanned):** The extraction well system was offline from 9:56 a.m. to 10:28 a.m. and from 6:54 p.m. to 7:28 p.m. due to a high water level in T-100. The extraction wells were shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 1 hour 22 minutes.
- **August 18, 2019 (unplanned):** The extraction well system was offline from 10:10 p.m. to 10:58 p.m. due to a high water level in T-100. The extraction wells were shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 48 minutes.
- **August 20, 2019 (unplanned):** The extraction well system was offline from 3:16 p.m. to 4:38 p.m. due to a high water level in T-100. The extraction wells were shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 1 hour 22 minutes.
- **August 22, 2019 (unplanned):** The extraction well system was offline from 7:18 a.m. to 7:24 a.m. due to a PLC and HMI connectivity issue. Extraction system downtime was 6 minutes.
- **August 22-23, 2019 (unplanned):** The extraction well system was offline from 9:20 a.m. to 11:14 a.m. and from 11:26 a.m. to 12:02 p.m. on August 22, 2019; and from 6:00 a.m. to 8:04 a.m. and from 9:56 a.m. to 10:30 a.m. August 23, 2019. Pursuant to the approved Groundwater Remedy C/RAWP and the IM-3 ARARs, the facility treated remedy wastewater generated from well construction activities. The additional water caused high water levels in T-100. The extraction wells were shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 5 hours 8 minutes.
- **August 29, 2019 (unplanned):** The extraction well system was offline from 4:42 a.m. to 5:18 a.m. due to a high water level in T-100. The extraction wells were shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 36 minutes.
- **August 30, 2019 (unplanned):** The extraction well system was offline from 5:18 a.m. to 7:22 a.m. due to replacing microfilter modules. Extraction system downtime was 2 hours 4 minutes.
- **August 30, 2019 (unplanned):** The extraction well system was offline from 7:24 a.m. to 7:34 a.m. due to a PLC and HMI connectivity issue. Extraction system downtime was 10 minutes.

### 4.3 September 2019

During September 2019, extraction well TW-3D operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during September 2019. Extraction well PE-01 was only operated to collect a sample. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 96.5 percent during the September 2019 reporting period.

The IM-3 facility treated approximately 5,525,766 gallons of extracted groundwater during September 2019. The IM-3 facility also treated no gallons of Final Groundwater Remedy wastewater, 400 gallons of sampling purge water, and no groundwater from injection well backwashing/re-development during September 2019. Five containers of solids from the IM-3 facility were transported offsite during September 2019.

Periods of planned and unplanned extraction system down time (that together resulted an approximately 3.5 percent downtime during September 2019) are summarized below.

- **September 1, 2019 (unplanned):** The extraction well system was offline from 9:46 p.m. to 11:24 p.m. due to a City of Needles power outage. Extraction system downtime was 1 hour 38 minutes.
- **September 3, 2019 (unplanned):** The extraction well system was offline from 5:18 p.m. to 5:20 p.m. due to a PLC and HMI connectivity issue. Extraction system downtime was 2 minutes.
- **September 3, 2019 (unplanned):** The extraction well system was offline from 6:42 p.m. to 7:32 p.m. due to a high water level in T-100. The extraction wells were shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 50 minutes.

- **September 4, 2019 (unplanned):** The extraction well system was offline from 7:54 p.m. to 8:14 p.m. to switch the facility to generator power due to storms and lightning in the area. Extraction system downtime was 20 minutes.
- **September 5, 2019 (unplanned):** The extraction well system was offline from 12:20 a.m. to 12:28 a.m. to switch the facility back to power from the City of Needles. Extraction system downtime was 8 minutes.
- **September 5, 2019 (unplanned):** The extraction well system was offline from 1:10 a.m. to 1:50 a.m. due to a high water level in T-100. The extraction wells were shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 40 minutes.
- **September 7, 2019 (unplanned):** The extraction well system was offline from 7:08 a.m. to 7:16 a.m. and from 7:18 a.m. to 7:20 a.m. due to a PLC and HMI connectivity issue. Extraction system downtime was 10 minutes.
- **September 7, 2019 (unplanned):** The extraction well system was offline from 7:22 a.m. to 8:56 a.m. due to replacing the microfilter modules. Extraction system downtime was 1 hour 34 minutes.
- **September 10, 2019 (unplanned):** The extraction well system was offline from 7:54 p.m. to 8:22 p.m. due to replacing the RO system filter. Extraction system downtime was 28 minutes.
- **September 17, 2019 (planned):** The extraction well system was offline from 8:08 a.m. to 2:04 p.m. to remove sludge from the clarifier. Extraction system downtime was 5 hours 56 minutes.
- **September 18, 2019 (planned):** The extraction well system was offline from 4:10 a.m. to 2:34 p.m. to remove the failed clarifier rake. During that downtime the Process Drain Pump (P-900) was replaced due to age and likelihood of impending failure. Extraction system downtime was 10 hours 24 minutes.
- **September 19, 2019 (unplanned):** The extraction well system was offline from 3:34 a.m. to 3:44 a.m., from 3:46 a.m. to 4:00 a.m., and from 4:06 a.m. to 4:32 a.m. due to a City of Needles power outage. The facility operator had difficulty getting the RO system to start, which caused several brief outages. Extraction system downtime was 50 minutes.
- **September 23, 2019 (unplanned):** The extraction well system was offline from 9:10 a.m. to 10:16 a.m. due to replacing microfilter modules. Extraction system downtime was 1 hour 6 minutes.
- **September 25, 2019 (unplanned):** The extraction well system was offline from 12:20 p.m. to 12:22 p.m., from 4:52 p.m. to 4:58 p.m., and from 5:06 p.m. to 5:12 p.m. due to a PLC and HMI connectivity issue. Extraction system downtime was 14 minutes.
- **September 25, 2019 (unplanned):** The extraction well system was offline from 5:16 p.m. to 5:50 p.m. due to switching the facility to generator power due to storms and lightning in the area. Extraction system downtime was 34 minutes.
- **September 25, 2019 (unplanned):** The extraction well system was offline from 8:48 p.m. to 8:54 p.m. due to switching the facility back to power from the City of Needles. Extraction system downtime was 6 minutes.

## 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 2019, 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.

## 6. Analytical Results

Laboratory reports for samples collected in the Third Quarter 2019 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

## **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.

## 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, 2019



## Tables

**Table 1. Sampling Station Descriptions***Third Quarter 2019 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System*

Sample Station	Sample ID <sup>a</sup>	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.

<sup>a</sup> 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 2019 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System*

Parameter	System Influent <sup>a,b</sup> (gpm)	System Effluent <sup>b</sup> (gpm)	Reverse Osmosis Concentrate <sup>b</sup> (gpm)
July 2019 Average Monthly Flowrate	123.4	123.0	0.0
August 2019 Average Monthly Flowrate	110.7	112.6	0.0
September 2019 Average Monthly Flowrate	127.9	128.9	0.0

**Notes:**

gpm: gallons per minute

<sup>a</sup> Extraction well TW-3D was operated during the Third Quarter 2019. PE-01 was only operated to collect a sample. Extraction wells TW-2D and TW2S were not operated during Third Quarter 2019.

<sup>b</sup> The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during the Third Quarter 2019 is approximately 9.2 percent.

**Table 3. Sample Collection Dates**

*Third Quarter 2019 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System*

Parameter	Sample Collection Dates	Results
Influent	July 3, 2019 August 6, 2019 September 4, 2019	See Table 4
Effluent	July 3, 2019 August 6, 2019 August 16, 2019 September 4, 2019	See Table 5
Reverse Osmosis Concentrate	July 3, 2019	See Table 6
Sludge <sup>a</sup>	July 3, 2019	See Table 7

**Notes:**

<sup>a</sup> 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. Influent Monitoring Results<sup>a</sup>  
Third Quarter 2019 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Monthly						Quarterly																		
Sample ID	Date	Analytes Units <sup>b</sup>	MDL	TDS	Turbidity	Specific Conductance	Field <sup>c</sup> pH	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate/Nitrite (as N)	Sulfate	Iron	Zinc	
				mg/L	NTU	µmhos/cm	pH units	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L
				50.0	0.100	0.100	---	0.650	1.70	40.0	0.0670	0.160	0.0810	0.150	0.0740	0.550	0.0480	0.130	0.260	0.210	0.260	0.160	2.00	18.0	2.30	
SC-100B-WDR-590	7/3/2019			4100	ND (0.100)	7200	7.4	450	450	ND (50.0)	ND (0.200)	ND (0.500)	3.10	30.0	1.10	ND (1.00)J	3.00	ND (1.00)	ND (0.500)J	23.0	ND (1.00)	2.70	470	ND (20.0)	26.0 J	
	RL			50.0	0.100	0.100	---	5.00	20.0	50.0	0.200	0.500	0.100	1.00	0.100	1.00	0.500	1.00	0.500	0.500	1.00	0.250	25.0	20.0	10.0	
SC-100B-WDR-591	8/6/2019			4200	0.130	6800	7.0	410	430	---	---	---	---	---	---	---	---	---	ND (0.500)	---	---	---	---	ND (20.0)	---	
	RL			50.0	0.100	0.100	---	5.00	20.0	---	---	---	---	---	---	---	---	---	0.500	---	---	---	---	20.0	---	
SC-100B-WDR-593	9/4/2019			4200	0.280	6900	7.2	450	440	---	---	---	---	---	---	---	---	---	ND (0.500)	---	---	---	---	ND (20.0)J	---	
	RL			50.0	0.100	0.100	---	5.00	10.0	---	---	---	---	---	---	---	---	---	0.500	---	---	---	---	20.0	---	

Notes:  
(---) = not required by the ARARs Monitoring and Reporting Program  
J = concentration or reporting limits estimated by laboratory or validation  
MDL = method detection limit  
mg/L = milligrams per liter  
N = nitrogen  
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

<sup>a</sup> 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).  
<sup>b</sup> Units reported in this table are those units required in the ARARs.  
<sup>c</sup> Starting 11/20/2007, analysis of pH was switched from California certified laboratory analysis to field method pursuant to the Water Board letter dated October 16, 2007 – Clarification of Monitoring and Reporting Program Requirements, stating that pH measurements may be conducted in the field.

Table 5. Effluent Monitoring Results <sup>a</sup>  
Third Quarter 2019 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Effluent Limits <sup>b</sup>	Ave. Monthly	NA	NA	NA	6.5-8.4	25	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Max Daily	NA	NA	NA	6.5-8.4	50	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Sampling Frequency		Monthly																						
Sample ID	Date	Analytes Units <sup>c</sup>  MDL <sup>d</sup>	TDS	Turbidity	Specific Conductance	Field pH <sup>e</sup>	Chromium	Hexavalent Chromium	Aluminiur	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenurr	Nickel	Nitrate/Nitrite (as N)	Sulfate	Iron	Zinc
			mg/L	NTU	µmhos/cm	pH units	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L
			50.0	0.100	0.100	---	0.130	0.0330	40.0	0.0086	0.160	0.0810	0.150	0.0740	0.550	0.0480	0.130	0.260	0.210	0.260	0.160	2.00	18.0	2.30
SC-700B-WDR-590 7/3/2019		4000	ND (0.100)	7200	7.0	ND (1.00)	ND (0.200)	ND (50.0)	ND (0.200)	ND (0.500)	ND (0.100)	14.0	0.990	ND (1.00)	2.60	ND (1.00)	ND (0.500)	23.0	1.20	2.70	480	75.0	ND (10.0)	
RL		50.0	0.100	0.100	---	1.00	0.200	50.0	0.200	0.500	0.100	1.00	0.100	1.00	0.500	1.00	0.500	0.500	1.00	0.250	25.0	20.0	10.0	
SC-700B-WDR-591 8/6/2019		4100	0.100	7000	7.0	ND (1.00)	ND (0.200)	ND (50.0)	ND (0.200)	ND (0.500)	0.100	15.0	0.970	ND (1.00)	2.50	ND (1.00)	ND (0.500)	25.0	1.50	2.80	480	ND (20.0)	ND (10.0)	
RL		50.0	0.100	0.100	---	1.00	0.200	50.0	0.200	0.500	0.100	1.00	0.100	1.00	0.500	1.00	0.500	0.500	1.00	0.250	25.0	20.0	10.0	
SC-700B-WDR-592 8/16/2019		4100	0.120	7100	7.6	ND (1.00)	0.250	ND (50.0)	ND (0.0500)	ND (0.500)	ND (0.100)	15.0	1.00	ND (1.00)	2.60	ND (1.00)	ND (0.500)	24.0	2.40	2.80	480	ND (20.0)	ND (10.0)	
RL		50.0	0.100	0.100	---	1.00	0.200	50.0	0.0500	0.500	0.100	1.00	0.100	1.00	1.00	1.00	0.500	0.500	1.00	0.250	25.0	20.0	10.0	
SC-700B-WDR-593 9/4/2019		4100	0.210	7100	7.1	ND (1.00)	ND (0.200)	ND (50.0)	0.200	ND (0.500)	ND (0.100)	19.0	1.10	ND (1.00)	2.40	ND (1.00)	ND (0.500)	23.0	1.50	2.70	480	ND (20.0)J	ND (10.0)	
RL		50.0	0.100	0.100	---	1.00	0.200	50.0	0.100	0.500	0.100	1.00	0.100	1.00	0.500	1.00	0.500	0.500	1.00	0.250	25.0	20.0	10.0	

Notes:

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

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

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

<sup>c</sup> Units reported in this table are those units required in the ARARs.

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

<sup>e</sup> 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. Reverse Osmosis Concentrate Monitoring Results<sup>a</sup>  
Third Quarter 2019 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Quarterly																						
Sample ID	Date	Analytes	TDS	Specific Conductance	Field <sup>c</sup> pH	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		Units <sup>b</sup>	mg/L	µmhos/cm	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		MDL	500	0.100	---	0.00013	0.00017	0.00078	0.000081	0.00075	0.0011	0.00026	0.000042	0.00055	0.190	0.00064	0.0011	0.00013	0.00026	0.0018	0.0012	0.00096	0.00028	0.0023
SC-701-WDR-590	7/3/2019		31000	45000	7.8	0.00180	ND (0.0010)	ND (0.0025)	0.00350	0.120	ND (0.0120)	ND (0.0025)	0.000680	0.00380	20.0	ND (0.0050)	0.190	ND (0.00020)	0.0190	0.0310	ND (0.0025)	ND (0.0025)	0.00560	ND (0.0100)
RL			500	0.100	---	0.0010	0.0010	0.0025	0.00010	0.0050	0.0120	0.0025	0.00050	0.0010	2.00	0.0050	0.0025	0.00020	0.0010	0.0025	0.0025	0.0025	0.0010	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

<sup>a</sup> Sampling location for all reverse osmosis samples is tap on pipe T-701 (see attached P&ID PR-10-04).  
<sup>b</sup> Units reported in this table are those units required in the ARARs.  
<sup>c</sup> 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. Sludge Monitoring Results<sup>a</sup>**  
*Third Quarter 2019 Monitoring Report for Interim Measure No.3 Groundwater Treatment System*

Sampling Frequency		Quarterly																			Annually	
Sample ID	Date	Analytes	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Bioassay
		Units <sup>b</sup>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% Survival
		MDL	0.540	0.480	0.540	0.890	0.510	0.360	0.440	0.470	1.50	0.120	0.490	0.490	0.0440	0.560	0.990	1.00	0.580	0.370	0.490	at 750 mg/L <sup>c</sup>
Phase Separator-590-Sludge	7/3/2019		3000	32.0 J	14.0	19.0	81.0	ND (1.70)	2.90	3.90	170	13.0	ND (1.70)	3.40	ND (0.160)	37.0	ND (1.70)	ND (1.70)	ND (3.30)	54.0	42.0	100
																						100
	RL		1.70	1.70	3.30	1.70	1.70	1.70	1.70	1.70	3.30	1.70	1.70	1.70	0.160	1.70	1.70	1.70	3.30	1.70	1.70	100

**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

<sup>a</sup> Sampling location for all sludge samples is the sludge collection bin (see attached P&ID TP-PR-10-10-06).  
<sup>b</sup> Units reported in this table are those units required in the ARARs.  
<sup>c</sup> 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. Monitoring Information***Third Quarter 2019 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-590	Ryan Phelps	7/3/2019	11:20:00 AM	ASSET	EPA 120.1	SC	7/3/2019	Quennie Manimtim
					ASSET	EPA 200.7	AL	7/16/2019	Claire Ignacio
					ASSET	EPA 200.7	B	7/16/2019	Claire Ignacio
					ASSET	EPA 200.7	FE	7/16/2019	Claire Ignacio
					ASSET	EPA 200.8	AS	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	BA	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	CR	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	CU	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	MN	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	MO	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	NI	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	PB	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	SB	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	ZN	7/18/2019	Claire Ignacio
					ASSET	EPA 218.6	CR6	7/5/2019	Ria Abes
					ASSET	EPA 300.0	FL	7/5/2019	Ria Abes
					ASSET	EPA 300.0	SO4	7/5/2019	Ria Abes
					Field	HACH	PH	7/3/2019	Ryan Phelps
					ASSET	SM 2540C	TDS	7/8/2019	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	7/8/2019	Ria Abes
SC-100B	SC-100B-WDR-591	Ryan Phelps	8/6/2019	10:35:00 AM	ASSET	SM2130B	TRB	7/3/2019	Quennie Manimtim
					BCLabs	SM4500NH3G	NH3N	7/10/2019	Ria Abes
					ASSET	EPA 120.1	SC	8/7/2019	Lilia Ramit
					ASSET	EPA 200.7	FE	8/12/2019	Claire Ignacio
					ASSET	EPA 200.8	CR	8/8/2019	Claire Ignacio
					ASSET	EPA 200.8	MN	8/8/2019	Claire Ignacio
					ASSET	EPA 218.6	CR6	8/7/2019	Hanah Glodoviza
					Field	HACH	PH	8/6/2019	Ryan Phelps
SC-100B	SC-100B-WDR-593	Ryan Phelps	9/4/2019	12:25:00 PM	ASSET	SM 2540C	TDS	8/7/2019	Lilia Ramit
					ASSET	SM2130B	TRB	8/8/2019	Lilia Ramit
					ASSET	EPA 120.1	SC	9/5/2019	Lilia Ramit
					ASSET	EPA 200.7	FE	9/10/2019	Claire Ignacio
					ASSET	EPA 200.8	CR	9/10/2019	Claire Ignacio
					ASSET	EPA 200.8	MN	9/10/2019	Claire Ignacio
					ASSET	EPA 218.6	CR6	9/11/2019	Hanah Glodoviza
SC-100B	SC-100B-WDR-593	Ryan Phelps	9/4/2019	12:25:00 PM	Field	HACH	PH	9/4/2019	Ryan Phelps
					ASSET	SM 2540C	TDS	9/5/2019	Lilia Ramit
					ASSET	SM2130B	TRB	9/5/2019	Lilia Ramit
					ASSET	SM2130B	TRB	9/5/2019	Lilia Ramit

**Table 8. Monitoring Information***Third Quarter 2019 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-590	Ryan Phelps	7/3/2019	11:10:00 AM	ASSET	EPA 120.1	SC	7/3/2019	Quennie Manimtim
					ASSET	EPA 200.7	AL	7/17/2019	Claire Ignacio
					ASSET	EPA 200.7	B	7/17/2019	Claire Ignacio
					ASSET	EPA 200.7	FE	7/17/2019	Claire Ignacio
					ASSET	EPA 200.8	AS	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	BA	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	CR	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	CU	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	MN	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	MO	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	NI	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	PB	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	SB	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	ZN	7/18/2019	Claire Ignacio
					ASSET	EPA 218.6	CR6	7/5/2019	Ria Abes
					ASSET	EPA 300.0	FL	7/5/2019	Ria Abes
					ASSET	EPA 300.0	SO4	7/5/2019	Ria Abes
					Field	HACH	PH	7/3/2019	Ryan Phelps
					ASSET	SM 2540C	TDS	7/8/2019	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	7/8/2019	Ria Abes
SC-700B	SC-700B-WDR-591	Ryan Phelps	8/6/2019	10:30:00 AM	ASSET	SM2130B	TRB	7/3/2019	Quennie Manimtim
					BCLabs	SM4500NH3G	NH3N	7/10/2019	Ria Abes
					ASSET	EPA 120.1	SC	8/7/2019	Lilia Ramit
					ASSET	EPA 200.7	AL	8/12/2019	Claire Ignacio
					ASSET	EPA 200.7	B	8/12/2019	Claire Ignacio
					ASSET	EPA 200.7	FE	8/12/2019	Claire Ignacio
					ASSET	EPA 200.8	AS	8/8/2019	Claire Ignacio
					ASSET	EPA 200.8	BA	8/8/2019	Claire Ignacio
					ASSET	EPA 200.8	CR	8/8/2019	Claire Ignacio
					ASSET	EPA 200.8	CU	8/8/2019	Claire Ignacio
					ASSET	EPA 200.8	MN	8/8/2019	Claire Ignacio
					ASSET	EPA 200.8	MO	8/8/2019	Claire Ignacio
					ASSET	EPA 200.8	NI	8/8/2019	Claire Ignacio
					ASSET	EPA 200.8	PB	8/8/2019	Claire Ignacio
					ASSET	EPA 200.8	SB	8/8/2019	Claire Ignacio
					ASSET	EPA 200.8	ZN	8/8/2019	Claire Ignacio
					ASSET	EPA 218.6	CR6	8/7/2019	Hanah Glodoviza
					ASSET	EPA 300.0	FL	8/9/2019	Ria Abes

**Table 8. Monitoring Information***Third Quarter 2019 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-591	Ryan Phelps	8/6/2019	10:30:00 AM	ASSET	EPA 300.0	SO4	8/9/2019	Ria Abes
					Field	HACH	PH	8/6/2019	Ryan Phelps
					ASSET	SM 2540C	TDS	8/7/2019	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	8/19/2019	Ria Abes
					ASSET	SM2130B	TRB	8/8/2019	Lilia Ramit
					BCLabs	SM4500NH3G	NH3N	8/15/2019	Ria Abes
SC-700B	SC-700B-WDR-592	Ryan Phelps	8/16/2019	1:05:00 PM	ASSET	EPA 120.1	SC	8/16/2019	Lilia Ramit
					ASSET	EPA 200.7	AL	8/30/2019	Claire Ignacio
					ASSET	EPA 200.7	B	8/30/2019	Claire Ignacio
					ASSET	EPA 200.7	FE	8/30/2019	Claire Ignacio
					ASSET	EPA 200.8	AS	8/24/2019	Claire Ignacio
					ASSET	EPA 200.8	BA	8/23/2019	Claire Ignacio
					ASSET	EPA 200.8	CR	9/3/2019	Claire Ignacio
					ASSET	EPA 200.8	CU	9/4/2019	Claire Ignacio
					ASSET	EPA 200.8	MN	9/3/2019	Claire Ignacio
					ASSET	EPA 200.8	MO	8/23/2019	Claire Ignacio
					ASSET	EPA 200.8	NI	9/4/2019	Claire Ignacio
					ASSET	EPA 200.8	PB	8/23/2019	Claire Ignacio
					ASSET	EPA 200.8	SB	8/23/2019	Claire Ignacio
					ASSET	EPA 200.8	ZN	9/3/2019	Claire Ignacio
					ASSET	EPA 218.6	CR6	8/21/2019	Hanah Glodoviza
					ASSET	EPA 300.0	FL	8/20/2019	Hanah Glodoviza
					ASSET	EPA 300.0	SO4	8/20/2019	Hanah Glodoviza
					Calscience	EPA 350.1	NH3N	9/3/2019	Wen-Shiang Chang
					Field	HACH	PH	8/16/2019	Ryan Phelps
					ASSET	SM 2540C	TDS	8/20/2019	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	9/4/2019	Ria Abes
					ASSET	SM2130B	TRB	8/16/2019	Lilia Ramit
SC-700B	SC-700B-WDR-593	Ryan Phelps	9/4/2019	12:30:00 PM	ASSET	EPA 120.1	SC	9/5/2019	Lilia Ramit
					ASSET	EPA 200.7	AL	9/10/2019	Claire Ignacio
					ASSET	EPA 200.7	B	9/10/2019	Claire Ignacio
					ASSET	EPA 200.7	FE	9/10/2019	Claire Ignacio
					ASSET	EPA 200.8	AS	9/11/2019	Claire Ignacio
					ASSET	EPA 200.8	BA	9/10/2019	Claire Ignacio
					ASSET	EPA 200.8	CR	9/10/2019	Claire Ignacio
					ASSET	EPA 200.8	CU	9/10/2019	Claire Ignacio
					ASSET	EPA 200.8	MN	9/10/2019	Claire Ignacio
					ASSET	EPA 200.8	MO	9/10/2019	Claire Ignacio
					ASSET	EPA 200.8	MO	9/10/2019	Claire Ignacio

**Table 8. Monitoring Information***Third Quarter 2019 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-593	Ryan Phelps	9/4/2019	12:30:00 PM	ASSET	EPA 200.8	NI	9/10/2019	Claire Ignacio
					ASSET	EPA 200.8	PB	9/10/2019	Claire Ignacio
					ASSET	EPA 200.8	SB	9/10/2019	Claire Ignacio
					ASSET	EPA 200.8	ZN	9/10/2019	Claire Ignacio
					ASSET	EPA 218.6	CR6	9/11/2019	Hanah Glodoviza
					ASSET	EPA 300.0	FL	9/10/2019	Hanah Glodoviza
					ASSET	EPA 300.0	SO4	9/10/2019	Hanah Glodoviza
					Field	HACH	PH	9/4/2019	Ryan Phelps
					ASSET	SM 2540C	TDS	9/5/2019	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	9/16/2019	Nancy Sibucan
					ASSET	SM2130B	TRB	9/5/2019	Lilia Ramit
					CTBERK	SM4500NH3D	NH3N	9/12/2019	Nancy Sibucan
SC-701	SC-701-WDR-590	Ryan Phelps	7/3/2019	11:13:00 AM	ASSET	EPA 120.1	SC	7/3/2019	Quennie Manimtim
					ASSET	EPA 200.8	AG	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	AS	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	BA	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	BE	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	CD	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	CO	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	CR	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	CU	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	MN	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	MO	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	NI	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	PB	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	SB	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	SE	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	TL	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	V	7/18/2019	Claire Ignacio
					ASSET	EPA 200.8	ZN	7/18/2019	Claire Ignacio
					ASSET	EPA 218.6	CR6	7/5/2019	Ria Abes
					ASSET	EPA 245.1	HG	7/18/2019	Mark Gesmundo
					ASSET	EPA 300.0	FL	7/5/2019	Ria Abes
					Field	HACH	PH	7/3/2019	Ryan Phelps
					ASSET	SM 2540C	TDS	7/8/2019	Lilia Ramit
Phase Separator	Phase Separator-590-Sludge	Ryan Phelps	7/3/2019	10:30:00 AM	ASSET	EPA 300.0	FL	7/9/2019	Ria Abes
					ASSET	EPA 6010B	AG	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	AS	7/16/2019	Claire Ignacio

**Table 8. Monitoring Information***Third Quarter 2019 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-590-Sludge	Ryan Phelps	7/3/2019	10:30:00 AM	ASSET	EPA 6010B	BA	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	BE	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	CD	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	CO	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	CR	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	CU	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	MN	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	MO	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	NI	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	PB	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	SB	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	SE	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	TL	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	V	7/16/2019	Claire Ignacio
					ASSET	EPA 6010B	ZN	7/16/2019	Claire Ignacio
					ASSET	EPA 7471A	HG	7/11/2019	Mark Gesmundo
					ASSET	SW 7199	CR6	7/9/2019	Ria Abes

## Table 8. Monitoring Information

### Third Quarter 2019 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

#### 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).

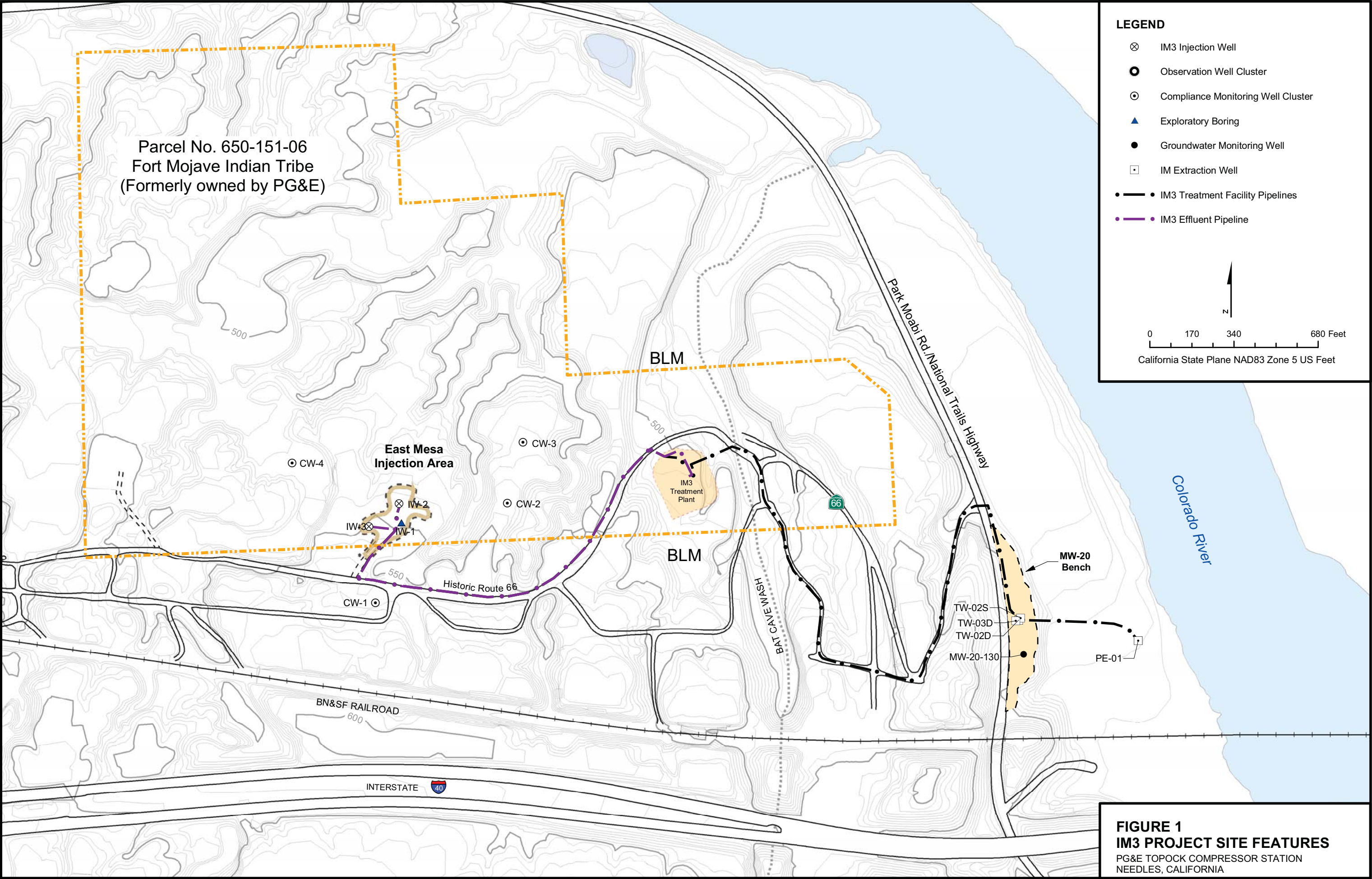
SC-701 = Sampling location for all reverse osmosis samples is tap on pipe T-701 (see attached P&ID PR-10-04).

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.

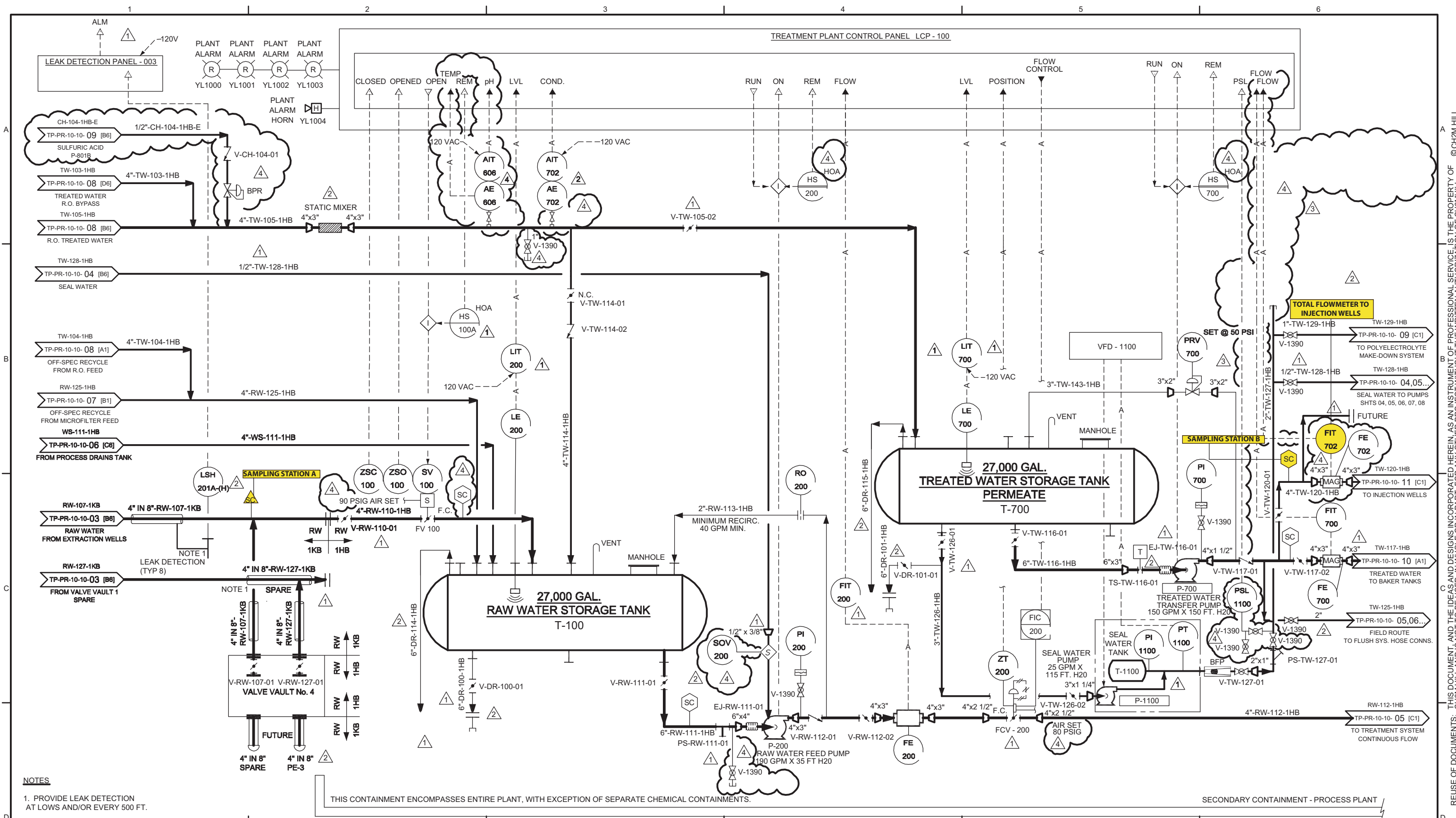
ALKB =	alkalinity, bicarb as CaCO <sub>3</sub>	MO =	molybdenum
ALKC =	alkalinity, carb as CaCO <sub>3</sub>	MOIST =	moisture
AL =	aluminum	NH <sub>3</sub> N =	ammonia (as N)
Ag =	silver	NI =	nickel
AS =	arsenic	NO <sub>3</sub> NO <sub>2</sub> N =	nitrate/nitrite (as N)
B =	boron	PB =	lead
BA =	barium	PH =	pH
BE =	beryllium	SB =	antimony
CD =	cadmium	SC =	specific conductance
CO =	cobalt	SE =	selenium
CR =	chromium	SO <sub>4</sub> =	sulfate
CR <sub>6</sub> =	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







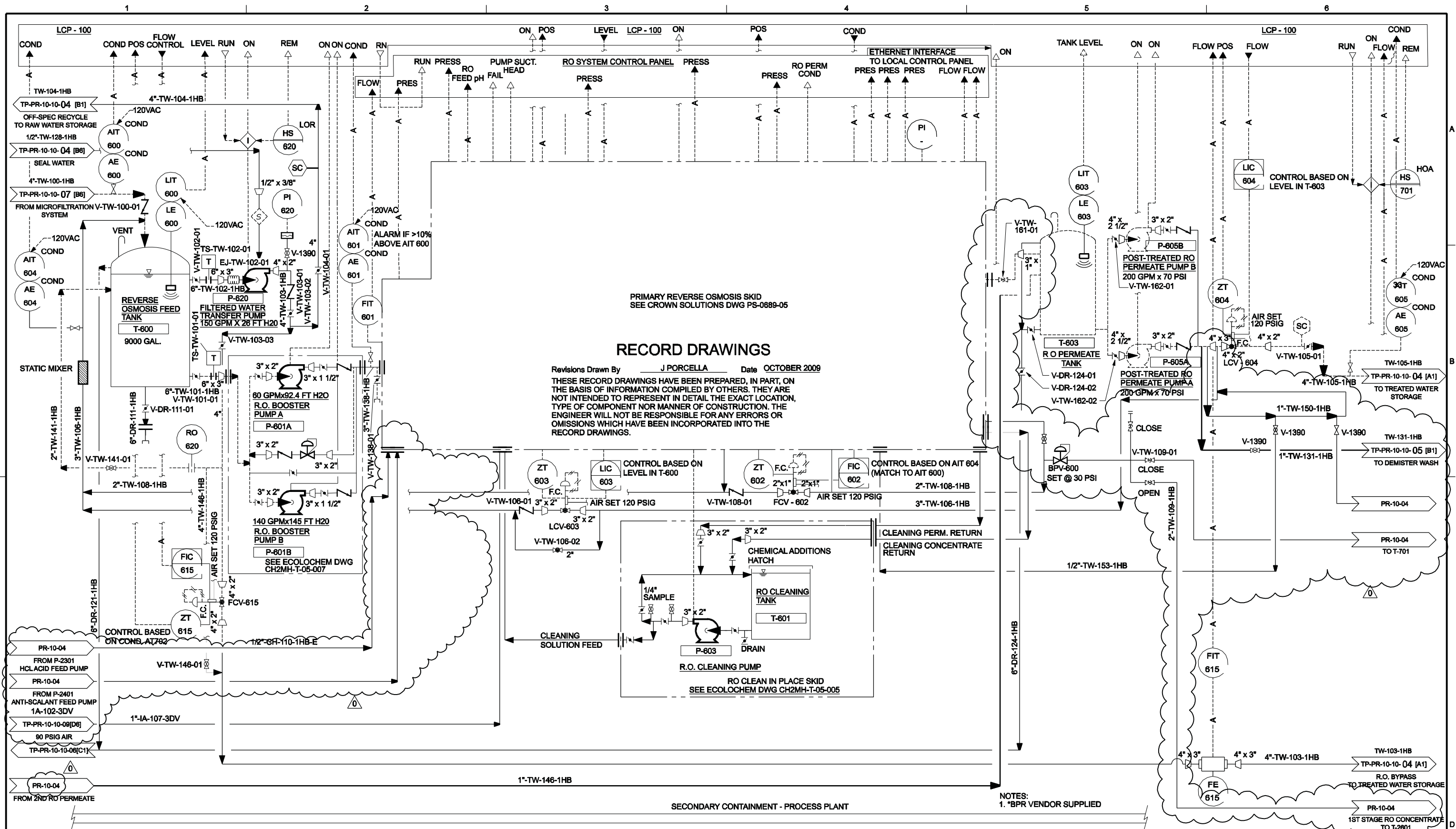


NOTES  
1. PROVIDE LEAK DETECTION AT LOWS AND/OR EVERY 500 FT.

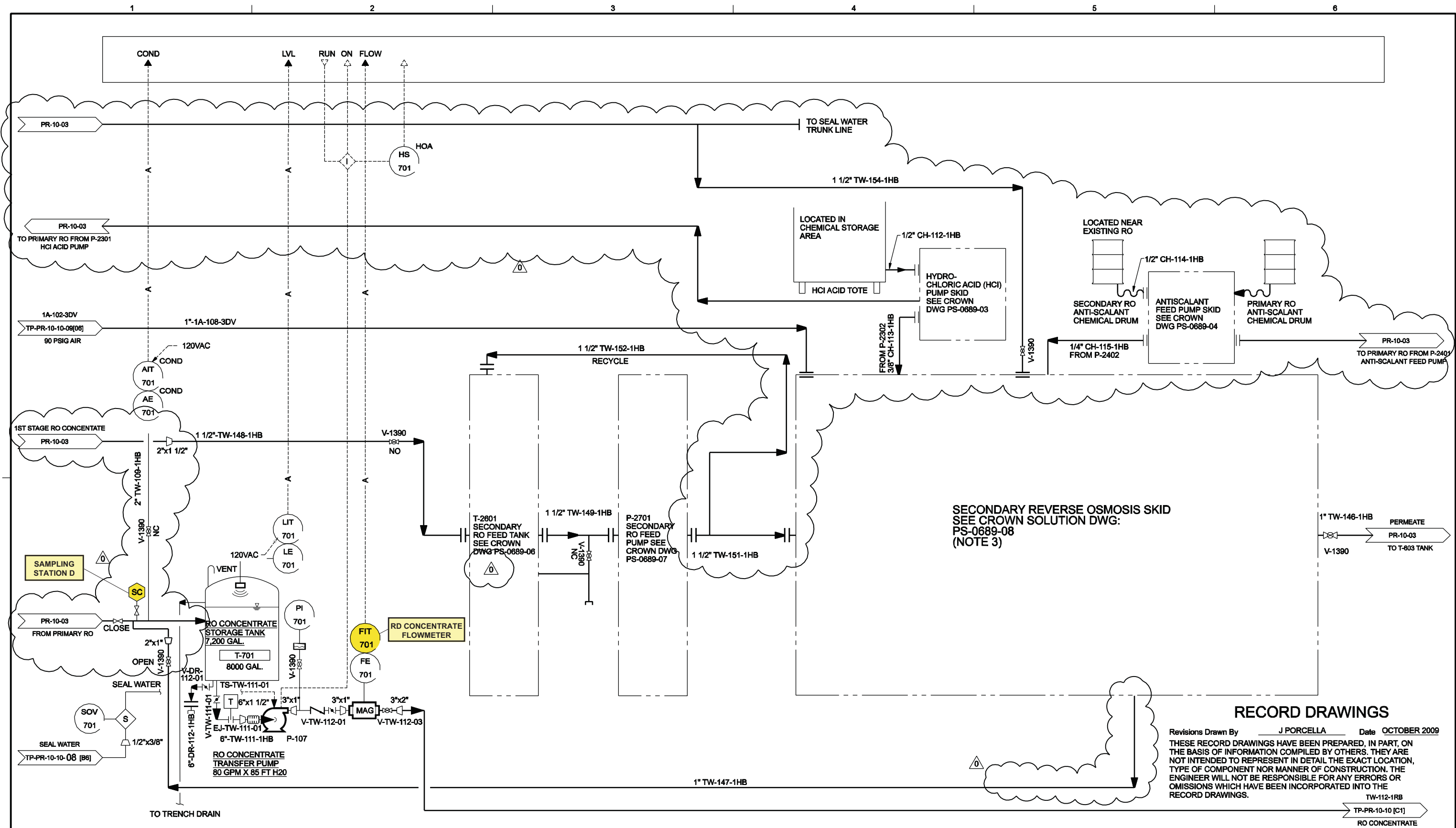
THIS CONTAINMENT ENCOMPASSES ENTIRE PLANT, WITH EXCEPTION OF SEPARATE CHEMICAL CONTAINMENTS.

SECONDARY CONTAINMENT - PROCESS PLANT

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



** ORIGINALLY STAMPED AND SIGNED BY: JOHN PORCELLA CALIFORNIA PE NO. C70145 ON 04-01-2009 **	RESPONSIBLE ENGINEER: John Porcella C70145 Exp. 8-30-10  PE#	NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL		REV 0	DATE 10/02/09	PRINT DISTRIBUTION	STATUS					PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 PLANT PERFORMANCE IMPROVEMENTS	PROCESS AND INSTRUMENTATION DIAGRAM REVERSE OSMOSIS SYSTEM SHEET ONE OF TWO				
		A	2/12/09	INTERNAL REVIEW			DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE		ISSUED	REV	DATE	SDE					PEM	
		B	2/12/09	CLIENT REVIEW			CIVIL	SJ	ELECTRICAL	FH	STATUS		PRELIMINARY	A	2/12/09	JP					JP	
		C	4/01/09	FOR REVIEW AND APPROVAL	JR	JP	STRUCTURAL		INST & CONTROL	JG	REV.		FOR REVIEW AND APPROVAL	C	4/01/09	JP					JP	
		D	11/17/09	FINAL RECORD ISSUE	JR	JP	MECHANICAL	SJ	ARCHITECTURAL		CLIENT		APPROVED FOR CONSTRUCTION									
									PROCESS	DF	ENVIRONMENTAL		FIELD	REVISED & APPROVED FOR CONSTRUCTION	0	10/02/09	JP	JP	PROJ NO. 362032			
									PIPING	SJ	GEN. ARRANG.	SJ	INTRA CO.									
												SCALE NONE					CH2MHILL		DWG. NO.	PR-10-03	REV.	0



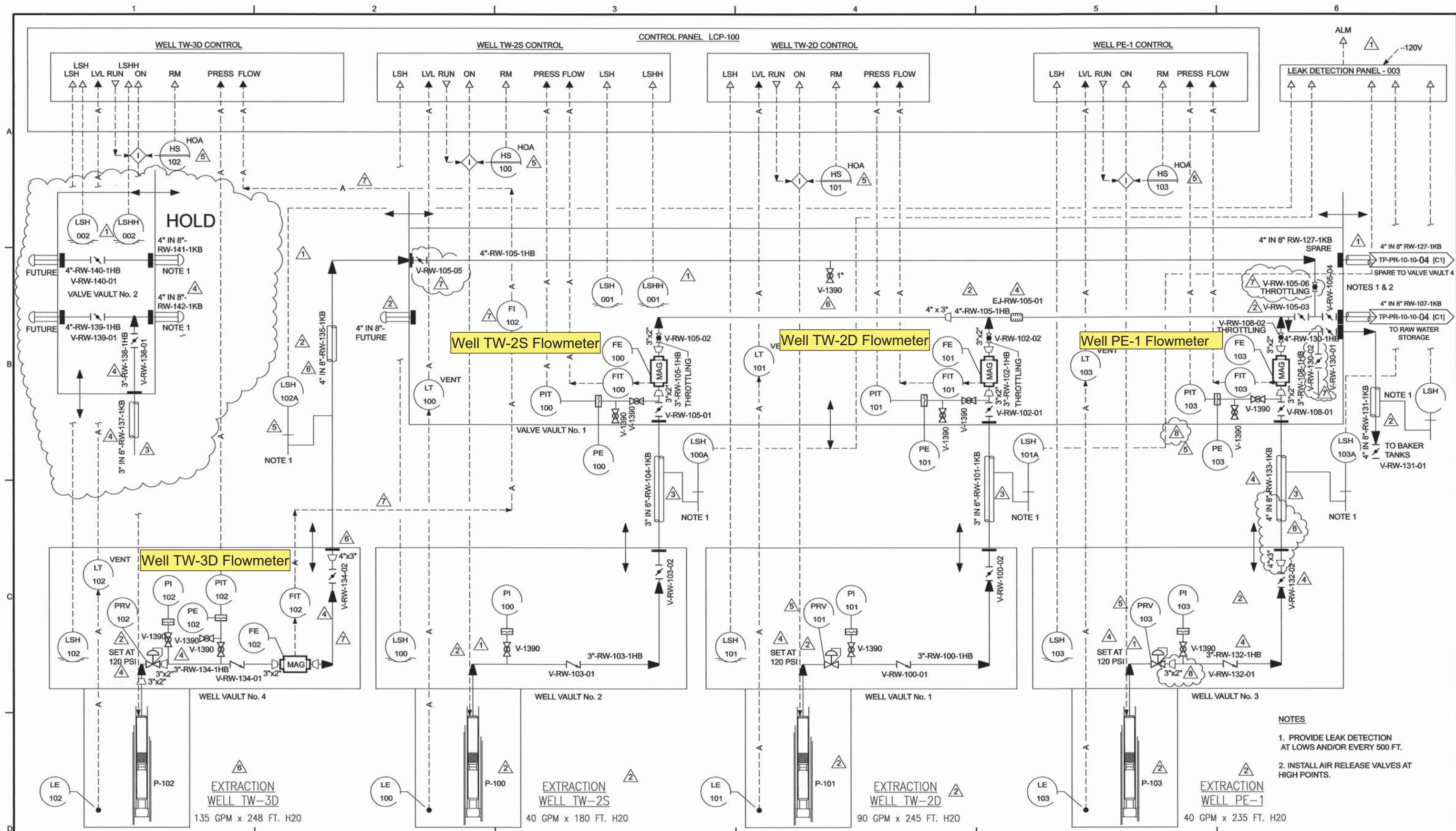
<div><div>***</div><div>ORIGINALLY STAMPED</div><div>AND SIGNED BY:</div><div>JOHN PORCELLA</div><div>CALIFORNIA PE NO. C70145</div><div>ON 04-01-2009</div><div>***</div></div>		NO.		DATE	REVISION	BY	CHK	REVISION APPROVAL		REV 0	DATE 10/02/09	PRINT DISTRIBUTION	STATUS				PACIFIC GAS & ELECTRIC CO. TOPOCK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

THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL. REUSE OF DOCUMENTS: CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.









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

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

SCALE NONE

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

**CH2MHILL**

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

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

FILENAME: tpr101003.dwg

PLOT DATE: 19-OCT-2005

PLOT TIME:

THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

D

A

B

C

D

© CH2M HILL

REUSE OF DOCUMENTS:

TP-PR-10-10-03

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

© CH2M HILL

REUSE OF DOCUMENTS:

TP-PR-10-10-03

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

© CH2M HILL

REUSE OF DOCUMENTS:

TP-PR-10-10-03

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

© CH2M HILL

REUSE OF DOCUMENTS:

TP-PR-10-10-03

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

© CH2M HILL

REUSE OF DOCUMENTS:

TP-PR-10-10-03

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

© CH2M HILL

REUSE OF DOCUMENTS:

TP-PR-10-10-03

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

© CH2M HILL

REUSE OF DOCUMENTS:

TP-PR-10-10-03

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

© CH2M HILL

REUSE OF DOCUMENTS:

TP-PR-10-10-03

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

© CH2M HILL

REUSE OF DOCUMENTS:

TP-PR-10-10-03

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

© CH2M HILL

REUSE OF DOCUMENTS:

TP-PR-10-10-03

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

© CH2M HILL

REUSE OF DOCUMENTS:

TP-PR-10-10-03

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

© CH2M HILL

REUSE OF DOCUMENTS:

TP-PR-10-10-03

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

© CH2M HILL

REUSE OF DOCUMENTS:

TP-PR-10-10-03

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]

© CH2M HILL

REUSE OF DOCUMENTS:

TP-PR-10-10-03

TP-PR-10-10-04 [C1]

TP-PR-10-10-04 [C1]





**Appendix A**  
**Third Quarter 2019 Laboratory**  
**Analytical Reports**

July 18, 2019

Doug Scott  
CH2M HILL  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

TEL: (970) 731-0636

FAX: (510) 622-9129

Workorder No.: N036395

RE: PG&E Topock, 680375CH.02.IM.OP.00

Attention: Doug Scott

Enclosed are the results for sample(s) received on July 03, 2019 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 Libunco-Tor*

Quennie Manimtim  
Laboratory Director

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



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

CALIFORNIA | P:562.219.7435 F:562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046



**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 680375CH.02.IM.OP.00  
**Lab Order:** N036395

**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\_Soil:**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N036397-001A-MS and N036397-001A-MSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N036397-001A-MS and N036397-001A-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) passed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

RPD for Matrix Spike(MS) and Matrix Spike Duplicate(MSD) is outside criteria for some analytes ; however, the associated Laboratory Control Sample (LCS) recovery was acceptable.

**Analytical Comments for EPA 7199:**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N036395-001A-MS and N036395-001A-MSD since the analyte concentration in the sample is disproportionate to the spike level. Matrix Spike Insoluble and Post Spike passed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was also acceptable.



## ASSET Laboratories

Date: 18-Jul-19

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 680375CH.02.IM.OP.00  
**Lab Order:** N036395  
**Contract No:** IM3PLANT-AR

### Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N036395-001A	Phase Separator-590-Sludge	Soil	7/3/2019 10:30:00 AM	7/3/2019	7/18/2019
N036395-001B	Phase Separator-590-Sludge	Soil	7/3/2019 10:30:00 AM	7/3/2019	7/18/2019
N036395-001C	Phase Separator-590-Sludge	Soil	7/3/2019 10:30:00 AM	7/3/2019	7/18/2019



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

CALIFORNIA | P:562.219.7435 F:562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 18-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	Phase Separator-590-Sludge
<b>Lab Order:</b>	N036395	<b>Collection Date:</b>	7/3/2019 10:30:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.02.IM.OP.00	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N036395-001		

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

**ANIONS BY ION CHROMATOGRAPHY**
**EPA 300.0**

RunID: <b>NV00922-IC8_190709A</b>	QC Batch: <b>R134970</b>	PrepDate:	Analyst: <b>RAB</b>
Fluoride	13 0.12	1.7	mg/Kg-dry 1 7/9/2019 08:53 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036395  
**Project:** PG&E Topock, 680375CH.02.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 300\_S**

Sample ID	MB-R134970	SampType:	MBLK	TestCode:	300_S	Units:	mg/Kg	Prep Date:		RunNo:	134970		
Client ID:	PBS	Batch ID:	R134970	TestNo:	EPA 300.0			Analysis Date:	7/9/2019	SeqNo:	3432707		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		ND		1.0									

Sample ID	LCS-R134970	SampType:	LCS	TestCode:	300_S	Units:	mg/Kg	Prep Date:		RunNo:	134970		
Client ID:	LCSS	Batch ID:	R134970	TestNo:	EPA 300.0			Analysis Date:	7/9/2019	SeqNo:	3432708		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		13.612		1.0	12.50	0	109	90	110				

Sample ID	N036395-001AMS	SampType:	MS	TestCode:	300_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	134970		
Client ID:	ZZZZZZ	Batch ID:	R134970	TestNo:	EPA 300.0			Analysis Date:	7/9/2019	SeqNo:	3432709		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		29.093		1.7	20.67	12.52	80.2	80	120				

Sample ID	N036395-001ADUP	SampType:	DUP	TestCode:	300_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	134970		
Client ID:	ZZZZZZ	Batch ID:	R134970	TestNo:	EPA 300.0			Analysis Date:	7/9/2019	SeqNo:	3432711		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		12.870		1.7						12.52	2.74	20	

Sample ID	N036395-001AMSD	SampType:	MSD	TestCode:	300_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	134970		
Client ID:	ZZZZZZ	Batch ID:	R134970	TestNo:	EPA 300.0			Analysis Date:	7/9/2019	SeqNo:	3432712		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		29.218		1.7	20.67	12.52	80.8	80	120	29.09	0.425	20	

**Qualifiers:**

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS
**CALIFORNIA** | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL  
Work Order: N036395  
Project: PG&E Topock, 680375CH.02.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

TestCode: 300\_S

Sample ID	N036395-001APS	SampType:	MS	TestCode:	300_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	134970	
Client ID:	ZZZZZZ	Batch ID:	R134970	TestNo:	EPA 300.0			Analysis Date:	7/9/2019	SeqNo:	3432713	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		32.715	1.7	20.67	12.52	97.7	80	120				

### Qualifiers:

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



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 18-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	Phase Separator-590-Sludge
<b>Lab Order:</b>	N036395	<b>Collection Date:</b>	7/3/2019 10:30:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.02.IM.OP.00	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N036395-001		

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

**TOTAL METALS BY ICP**
**EPA 3050B**
**EPA 6010B**

RunID: <b>NV00922-ICP2_190716A</b>	QC Batch: <b>74546</b>	PrepDate: <b>7/11/2019</b>	Analyst: <b>CEI</b>			
Antimony	14	0.54	3.3	mg/Kg-dry	1	7/16/2019 05:13 AM
Arsenic	19	0.89	1.7	mg/Kg-dry	1	7/16/2019 05:13 AM
Barium	81	0.51	1.7	mg/Kg-dry	1	7/16/2019 05:13 AM
Beryllium	ND	0.36	1.7	mg/Kg-dry	1	7/16/2019 05:13 AM
Cadmium	2.9	0.44	1.7	mg/Kg-dry	1	7/16/2019 05:13 AM
Chromium	3000	0.54	1.7	mg/Kg-dry	1	7/16/2019 05:13 AM
Cobalt	3.9	0.47	1.7	mg/Kg-dry	1	7/16/2019 05:13 AM
Copper	170	1.5	3.3	mg/Kg-dry	1	7/16/2019 05:13 AM
Lead	ND	0.49	1.7	mg/Kg-dry	1	7/16/2019 05:13 AM
Manganese	440	0.84	1.7	mg/Kg-dry	1	7/16/2019 05:13 AM
Molybdenum	3.4	0.49	1.7	mg/Kg-dry	1	7/16/2019 05:13 AM
Nickel	37	0.56	1.7	mg/Kg-dry	1	7/16/2019 05:13 AM
Selenium	ND	0.99	1.7	mg/Kg-dry	1	7/16/2019 05:13 AM
Silver	ND	1.0	1.7	mg/Kg-dry	1	7/16/2019 05:13 AM
Thallium	ND	0.58	3.3	mg/Kg-dry	1	7/16/2019 05:13 AM
Vanadium	54	0.37	1.7	mg/Kg-dry	1	7/16/2019 05:13 AM
Zinc	42	0.49	1.7	mg/Kg-dry	1	7/16/2019 05:13 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036395  
**Project:** PG&E Topock, 680375CH.02.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 6010\_SPGE**

Sample ID	MB-74546	SampType:	MBLK	TestCode:	6010_SPGE	Units:	mg/Kg	Prep Date:	7/11/2019	RunNo:	135116		
Client ID:	PBS	Batch ID:	74546	TestNo:	EPA 6010B	EPA 3050B		Analysis Date:	7/16/2019	SeqNo:	3441561		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		ND		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		ND		1.0									
Nickel		ND		1.0									
Selenium		ND		1.0									
Silver		ND		1.0									
Thallium		ND		2.0									
Vanadium		ND		1.0									
Zinc		ND		1.0									

Sample ID	LCS1-74546	SampType:	LCS	TestCode:	6010_SPGE	Units:	mg/Kg	Prep Date:	7/11/2019	RunNo:	135116
Client ID:	LCSS	Batch ID:	74546	TestNo:	EPA 6010B	EPA 3050B		Analysis Date:	7/16/2019	SeqNo:	3441562
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	25.304	2.0	25.00	0	101	85	115				
Arsenic	25.332	1.0	25.00	0	101	85	115				
Barium	25.481	1.0	25.00	0	102	85	115				
Beryllium	25.138	1.0	25.00	0	101	85	115				
Cadmium	25.821	1.0	25.00	0	103	85	115				
Chromium	25.674	1.0	25.00	0	103	85	115				

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036395  
**Project:** PG&E Topock, 680375CH.02.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 6010\_SPGE

Sample ID	<b>LCS1-74546</b>	SampType:	<b>LCS</b>	TestCode:	<b>6010_SPGE</b>	Units:	<b>mg/Kg</b>	Prep Date:	<b>7/11/2019</b>	RunNo:	<b>135116</b>
Client ID:	<b>LCSS</b>	Batch ID:	<b>74546</b>	TestNo:	<b>EPA 6010B EPA 3050B</b>			Analysis Date:	<b>7/16/2019</b>	SeqNo:	<b>3441562</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	25.385	1.0	25.00	0	102	85	115				
Copper	25.392	2.0	25.00	0	102	85	115				
Lead	25.670	1.0	25.00	0	103	85	115				
Manganese	50.186	1.0	50.00	0	100	85	115				
Molybdenum	25.606	1.0	25.00	0	102	85	115				
Nickel	25.547	1.0	25.00	0	102	85	115				
Selenium	25.324	1.0	25.00	0	101	85	115				
Silver	25.148	1.0	25.00	0	101	85	115				
Thallium	25.583	2.0	25.00	0	102	85	115				
Vanadium	26.013	1.0	25.00	0	104	85	115				
Zinc	25.598	1.0	25.00	0	102	85	115				

Sample ID	<b>N036397-001A-MS</b>	SampType:	<b>MS</b>	TestCode:	<b>6010_SPGE</b>	Units:	<b>mg/Kg</b>	Prep Date:	<b>7/11/2019</b>	RunNo:	<b>135116</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>74546</b>	TestNo:	<b>EPA 6010B EPA 3050B</b>			Analysis Date:	<b>7/16/2019</b>	SeqNo:	<b>3441574</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	30.411	2.0	24.90	6.646	95.4	75	125				
Arsenic	36.443	1.0	24.90	8.936	110	75	125				
Barium	69.568	1.0	24.90	38.35	125	75	125				S
Beryllium	21.570	1.0	24.90	0	86.6	75	125				
Cadmium	22.368	1.0	24.90	1.249	84.8	75	125				
Chromium	1790.761	1.0	24.90	1393	1600	75	125				S
Cobalt	22.776	1.0	24.90	1.664	84.8	75	125				
Copper	121.280	2.0	24.90	72.09	198	75	125				S
Lead	17.652	1.0	24.90	0	70.9	75	125				S
Manganese	271.111	1.0	49.80	179.9	183	75	125				S
Molybdenum	22.930	1.0	24.90	1.174	87.4	75	125				
Nickel	40.737	1.0	24.90	16.07	99.1	75	125				
Selenium	9.695	1.0	24.90	0	38.9	75	125				S
Silver	26.057	1.0	24.90	0	105	75	125				

### Qualifiers:

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



**ASSET LABORATORIES**  
ANALYTICAL SERVICES PROVIDER FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

**CALIFORNIA** | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

**NEVADA** | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**CLIENT:** CH2M HILL  
**Work Order:** N036395  
**Project:** PG&E Topock, 680375CH.02.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 6010\_SPGE

Sample ID	N036397-001A-MS	SampType: MS	TestCode: 6010_SPGE	Units: mg/Kg	Prep Date: 7/11/2019	RunNo: 135116					
Client ID: ZZZZZZ	Batch ID: 74546	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 7/16/2019	SeqNo: 3441574						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	20.196	2.0	24.90	1.654	74.5	75	125				S
Vanadium	55.890	1.0	24.90	25.89	120	75	125				
Zinc	42.358	1.0	24.90	18.50	95.8	75	125				

Sample ID	N036397-001A-MSD	SampType: MSD	TestCode: 6010_SPGE	Units: mg/Kg	Prep Date: 7/11/2019	RunNo: 135116					
Client ID:	ZZZZZZ	Batch ID: 74546	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 7/16/2019	SeqNo: 3441576					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	29.632	2.0	24.90	6.646	92.3	75	125	30.41	2.60	20	
Arsenic	34.301	1.0	24.90	8.936	102	75	125	36.44	6.05	20	
Barium	60.808	1.0	24.90	38.35	90.2	75	125	69.57	13.4	20	
Beryllium	22.398	1.0	24.90	0	90.0	75	125	21.57	3.77	20	
Cadmium	22.886	1.0	24.90	1.249	86.9	75	125	22.37	2.29	20	
Chromium	1439.343	1.0	24.90	1393	187	75	125	1791	21.8	20	SR
Cobalt	23.272	1.0	24.90	1.664	86.8	75	125	22.78	2.16	20	
Copper	101.038	2.0	24.90	72.09	116	75	125	121.3	18.2	20	
Lead	18.581	1.0	24.90	0	74.6	75	125	17.65	5.13	20	S
Manganese	227.520	1.0	49.80	179.9	95.6	75	125	271.1	17.5	20	
Molybdenum	22.922	1.0	24.90	1.174	87.3	75	125	22.93	0.0370	20	
Nickel	37.565	1.0	24.90	16.07	86.3	75	125	40.74	8.10	20	
Selenium	13.171	1.0	24.90	0	52.9	75	125	9.695	30.4	20	SR
Silver	26.344	1.0	24.90	0	106	75	125	26.06	1.09	20	
Thallium	21.122	2.0	24.90	1.654	78.2	75	125	20.20	4.48	20	
Vanadium	49.733	1.0	24.90	25.89	95.8	75	125	55.89	11.7	20	
Zinc	38.744	1.0	24.90	18.50	81.3	75	125	42.36	8.91	20	

### Qualifiers:

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



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL  
 Work Order: N036395  
 Project: PG&E Topock, 680375CH.02.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

TestCode: 6010\_SPGE

Sample ID	N036397-001A-PS	SampType:	PS	TestCode:	6010_SPGE	Units:	mg/Kg	Prep Date:		RunNo:	135116
Client ID:	ZZZZZZ	Batch ID:	74546	TestNo:	EPA 6010B EPA 3050B			Analysis Date:	7/16/2019	SeqNo:	3441570
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	34.229	2.0	24.93	6.646	111	80	120				
Arsenic	37.296	1.0	24.93	8.936	114	80	120				
Barium	63.307	1.0	24.93	38.35	100	80	120				
Beryllium	25.682	1.0	24.93	0	103	80	120				
Cadmium	25.814	1.0	24.93	1.249	98.6	80	120				
Chromium	1417.363	1.0	24.93	1393	98.7	80	120				
Cobalt	26.436	1.0	24.93	1.664	99.4	80	120				
Copper	102.292	2.0	24.93	72.09	121	80	120				S
Lead	21.541	1.0	24.93	0	86.4	80	120				
Manganese	234.162	1.0	49.85	179.9	109	80	120				
Molybdenum	25.922	1.0	24.93	1.174	99.3	80	120				
Nickel	40.671	1.0	24.93	16.07	98.7	80	120				
Selenium	16.469	1.0	24.93	0	66.1	80	120				S
Silver	29.334	1.0	24.93	0	118	80	120				
Thallium	23.131	2.0	24.93	1.654	86.2	80	120				
Vanadium	52.254	1.0	24.93	25.89	106	80	120				
Zinc	41.473	1.0	24.93	18.50	92.2	80	120				

## Qualifiers:

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

Calculations are based on raw values



ASSET LABORATORIES

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 18-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	Phase Separator-590-Sludge
<b>Lab Order:</b>	N036395	<b>Collection Date:</b>	7/3/2019 10:30:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.02.IM.OP.00	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N036395-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>HEXAVALENT CHROMIUM BY IC</b>							
	<b>EPA 3060A</b>			<b>EPA 7199</b>			
RunID: <b>NV00922-IC6_190709A</b>	QC Batch: <b>74480</b>			PrepDate:	<b>7/8/2019</b>	Analyst: <b>RAB</b>	
Hexavalent Chromium	32	0.48	1.7		mg/Kg-dry	5	7/9/2019 11:08 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036395  
**Project:** PG&E Topock, 680375CH.02.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 7199\_S\_PGE**

Sample ID <b>MB-74480</b>	SampType: <b>MBLK</b>	TestCode: <b>7199_S_PGE</b>	Units: <b>mg/Kg</b>	Prep Date: <b>7/8/2019</b>	RunNo: <b>134962</b>
Client ID: <b>PBS</b>	Batch ID: <b>74480</b>	TestNo: <b>EPA 7199</b>	<b>EPA 3060A</b>	Analysis Date: <b>7/9/2019</b>	SeqNo: <b>3432247</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium	ND	0.20			

Sample ID <b>LCS-74480</b>	SampType: <b>LCS</b>	TestCode: <b>7199_S_PGE</b>	Units: <b>mg/Kg</b>	Prep Date: <b>7/8/2019</b>	RunNo: <b>134962</b>
Client ID: <b>LCSS</b>	Batch ID: <b>74480</b>	TestNo: <b>EPA 7199</b>	<b>EPA 3060A</b>	Analysis Date: <b>7/9/2019</b>	SeqNo: <b>3432248</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium	3.930	0.20	3.997	0	98.3 80 120

Sample ID <b>N036395-001A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>7199_S_PGE</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>7/8/2019</b>	RunNo: <b>134962</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>74480</b>	TestNo: <b>EPA 7199</b>	<b>EPA 3060A</b>	Analysis Date: <b>7/9/2019</b>	SeqNo: <b>3432250</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium	31.564	1.7			31.78 0.679 20

Sample ID <b>N036395-001A-REP</b>	SampType: <b>DUP</b>	TestCode: <b>7199_S_PGE</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>7/8/2019</b>	RunNo: <b>134962</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>74480</b>	TestNo: <b>EPA 7199</b>	<b>EPA 3060A</b>	Analysis Date: <b>7/9/2019</b>	SeqNo: <b>3432252</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium	31.740	1.7			31.78 0.123 20

Sample ID <b>N036396-001B-REP</b>	SampType: <b>DUP</b>	TestCode: <b>7199_S_PGE</b>	Units: <b>mg/Kg</b>	Prep Date: <b>7/8/2019</b>	RunNo: <b>134962</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>74480</b>	TestNo: <b>EPA 7199</b>	<b>EPA 3060A</b>	Analysis Date: <b>7/9/2019</b>	SeqNo: <b>3432254</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium	6.277	0.20			6.094 2.95 20

**Qualifiers:**

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


**ASSET LABORATORIES**  
ANALYTICAL QUALITY SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS
**CALIFORNIA** | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036395  
**Project:** PG&E Topock, 680375CH.02.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 7199\_S\_PGE

Sample ID	<b>N036397-001B-REP</b>	SampType:	<b>DUP</b>	TestCode:	<b>7199_S_PGE</b>	Units:	<b>mg/Kg</b>	Prep Date:	<b>7/8/2019</b>	RunNo:	<b>134962</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>74480</b>	TestNo:	<b>EPA 7199</b>	<b>EPA 3060A</b>		Analysis Date:	<b>7/9/2019</b>	SeqNo:	<b>3432255</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Hexavalent Chromium	13.210	1.0								13.28	0.550	20
---------------------	--------	-----	--	--	--	--	--	--	--	-------	-------	----

Sample ID	<b>N036395-001A-MS</b>	SampType:	<b>MS</b>	TestCode:	<b>7199_S_PGE</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>7/8/2019</b>	RunNo:	<b>134962</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>74480</b>	TestNo:	<b>EPA 7199</b>	<b>EPA 3060A</b>		Analysis Date:	<b>7/9/2019</b>	SeqNo:	<b>3432260</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Hexavalent Chromium	43.917	1.7	82.65	31.78	14.7	75	125					S
---------------------	--------	-----	-------	-------	------	----	-----	--	--	--	--	---

Sample ID	<b>N036395-001A-MSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>7199_S_PGE</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>7/8/2019</b>	RunNo:	<b>134962</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>74480</b>	TestNo:	<b>EPA 7199</b>	<b>EPA 3060A</b>		Analysis Date:	<b>7/9/2019</b>	SeqNo:	<b>3432261</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Hexavalent Chromium	46.237	1.7	82.55	31.78	17.5	75	125	43.92	5.15	20	S
---------------------	--------	-----	-------	-------	------	----	-----	-------	------	----	---

Sample ID	<b>N036395-001A-MS I</b>	SampType:	<b>MS</b>	TestCode:	<b>7199_S_PGE</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>7/8/2019</b>	RunNo:	<b>134962</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>74480</b>	TestNo:	<b>EPA 7199</b>	<b>EPA 3060A</b>		Analysis Date:	<b>7/9/2019</b>	SeqNo:	<b>3432262</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Hexavalent Chromium	1067.502	17	1105	31.78	93.8	75	125				
---------------------	----------	----	------	-------	------	----	-----	--	--	--	--

Sample ID	<b>N036395-001APS</b>	SampType:	<b>MS</b>	TestCode:	<b>7199_S_PGE</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:		RunNo:	<b>134962</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>74480</b>	TestNo:	<b>EPA 7199</b>	<b>EPA 3060A</b>		Analysis Date:	<b>7/9/2019</b>	SeqNo:	<b>3432263</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Hexavalent Chromium	64.918	1.7	33.01	31.78	100	75	125				
---------------------	--------	-----	-------	-------	-----	----	-----	--	--	--	--

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 18-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	Phase Separator-590-Sludge
<b>Lab Order:</b>	N036395	<b>Collection Date:</b>	7/3/2019 10:30:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.02.IM.OP.00	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N036395-001		

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

**TOTAL MERCURY BY COLD VAPOR TECHNIQUE**
**EPA 7471A**

RunID: <b>NV00922-AA1_190711A</b>	QC Batch: <b>74457</b>	PrepDate: <b>7/5/2019</b>	Analyst: <b>MG</b>
Mercury	ND	0.044	0.16
		mg/Kg-dry	1
			7/11/2019 10:27 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036395  
**Project:** PG&E Topock, 680375CH.02.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 7471\_S\_PGE**

Sample ID	MB-74457	SampType:	MBLK	TestCode:	7471_S_PGE	Units:	mg/Kg	Prep Date:	7/5/2019	RunNo:	135015		
Client ID:	PBS	Batch ID:	74457	TestNo:	EPA 7471A			Analysis Date:	7/11/2019	SeqNo:	3434498		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND		0.10									

Sample ID	LCS-74457	SampType:	LCS	TestCode:	7471_S_PGE	Units:	mg/Kg	Prep Date:	7/5/2019	RunNo:	135015		
Client ID:	LCSS	Batch ID:	74457	TestNo:	EPA 7471A			Analysis Date:	7/11/2019	SeqNo:	3434499		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.396		0.10	0.4167	0	95.0	75	125				

Sample ID	N036395-001B-MS	SampType:	MS	TestCode:	7471_S_PGE	Units:	mg/Kg-dry	Prep Date:	7/5/2019	RunNo:	135015		
Client ID:	ZZZZZZ	Batch ID:	74457	TestNo:	EPA 7471A			Analysis Date:	7/11/2019	SeqNo:	3434500		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.692		0.16	0.6822	0.08077	89.6	75	125				

Sample ID	N036395-001B-MSD	SampType:	MSD	TestCode:	7471_S_PGE	Units:	mg/Kg-dry	Prep Date:	7/5/2019	RunNo:	135015		
Client ID:	ZZZZZZ	Batch ID:	74457	TestNo:	EPA 7471A			Analysis Date:	7/11/2019	SeqNo:	3434501		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.699		0.16	0.6822	0.08077	90.6	75	125	0.6917	0.981	20	

**Qualifiers:**

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


**ASSET LABORATORIES**  
ANALYTICAL QUALITY SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

**CALIFORNIA** | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 18-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	Phase Separator-590-Sludge
<b>Lab Order:</b>	N036395	<b>Collection Date:</b>	7/3/2019 10:30:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.02.IM.OP.00	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	N036395-001		

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

**PERCENT MOISTURE**
**D2216**

RunID: <b>NV00922-WC_190708E</b>	QC Batch: <b>R134960</b>	PrepDate:	Analyst: <b>LR</b>
Percent Moisture	39.53 0.1000 0.1000	wt%	1 7/8/2019 10:30 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**CLIENT:** CH2M HILL  
**Work Order:** N036395  
**Project:** PG&E Topock, 680375CH.02.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: PMOIST**

Sample ID	MB-R134960	SampType:	MBLK	TestCode:	PMOIST	Units:	wt%	Prep Date:		RunNo:	134960	
Client ID:	PBS	Batch ID:	R134960	TestNo:	D2216			Analysis Date:	7/8/2019	SeqNo:	3432213	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		ND	0.1000									

Sample ID	N036395-001BDUP	SampType:	DUP	TestCode:	PMOIST	Units:	wt%	Prep Date:		RunNo:	134960	
Client ID:	ZZZZZZ	Batch ID:	R134960	TestNo:	D2216			Analysis Date:	7/8/2019	SeqNo:	3432215	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		38.990	0.1000						39.53	1.37	30	

**Qualifiers:**

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

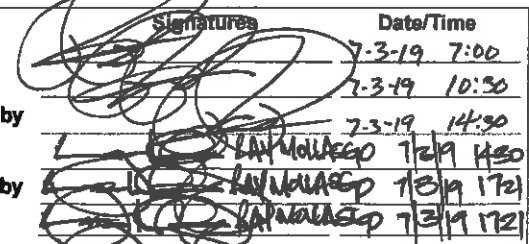
**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

<b>Project Name</b> PG&E Topock <b>Location</b> PG&E Topock <b>Project Number</b> 680375CH.02.IM.OP.00 <b>Project Manager</b> Scott O'Donnell <b>Sample Manager</b> Shawn Duffy  <b>Task Order</b> <b>Project</b> IM3PLANT-ARAR-WDR-590-SLUDGE <b>Turnaround Time</b> 10 Days <b>Shipping Date:</b> 7/3/2019 <b>COC Number:</b> 590-s				<b>Container:</b> Glass Jar(8 oz) none	<b>250ml Glass</b> 4°C	<b>Glass Jar(8 oz)</b> none	<b>4 oz jar</b> 4°C						
<b>Preservatives:</b>													
<b>Filtered:</b>				NA	NA	NA							
<b>Holding Time:</b>				NA	14	180							
				Antlons (E300_Soil) FI	Blossay (Blossay, 96hr Acute)	Metals (6010B_Soil) Title 22, Mercury, Mn	Metals (7199)						
				DATE	TIME	Matrix							
Phase Separator-590-Sludge				7/3/2019	16:30	Soil	X		X	X	N036395-01	4	
<del>Phase Separator-590-Sludge</del>				<del>7/3/2019</del>	<del>10:30</del>	<del>Soil</del>		<del>X</del>				<del>4</del>	<del>PPP</del>
TOTAL NUMBER OF CONTAINERS											8	4	

<b>Approved by</b> <b>Sampled by</b> <b>Relinquished by</b> <b>Received by</b> <b>Relinquished by</b> <b>Received by</b>		<b>Signatures</b> 	<b>Date/Time</b> 7-3-19 7:00 7-3-19 10:30 7-3-19 14:30 7-3-19 17:21 7-3-19 17:21 7-3-19 17:21	<b>Shipping Details</b> <b>Method of Shipment:</b> FedEx <b>On Ice:</b> <input checked="" type="checkbox"/> yes / no <b>#2</b> 4.0 <b>Airbill No:</b> <b>Lab Name:</b> ASSET Laboratories <b>Lab Phone:</b> (702) 307-2659	<b>ATTN:</b> <b>Sample Custody</b> <b>and</b> <b>Marlon Cartin</b>	<b>Special Instructions:</b> <b>Report Copy to</b> <b>Doug Scott</b> <b>(970) 731-0636</b>
---	--	--	---	---	---	---

## 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: 7/3/2019 Workorder: N036395  
 Rep sample Temp (Deg C): 4.8 IR Gun ID: 2  
 Temp Blank: ☒ Yes ☐ No  
 Carrier name: ASSET  
 Last 4 digits of Tracking No.: N/A Packing Material Used: Bubble Wrap  
 Cooling process: ☒ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

### Sample Receipt Checklist

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

Comments:

Checklist Completed By: RM  7/8/2019

Reviewed By:  LG 071019

## List of Analysts

### ASSET Laboratories Work Order: N036395

NAME	TEST METHOD
Claire Ignacio	EPA 6010B
Lilia Ramit	ASTM D2216
Ria Abes	EPA 300.0, EPA 7199
Mark Gesmundo	EPA 7471A



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA  
11110 Artesia Blvd., Ste B, 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"

Work Order Number: 1922042

**Laboratory Documentation Requirements  
For Data Validation of  
Wet Chemistry Analysis**

**Prepared By  
BC Laboratories**

**For ASSET Laboratories- Las Vegas**

**N036398**

All pages have been paginated and results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



## Case Narrative

### Sample Receipt

Work Order: 1922042

COC Number:

Default Cooler was received at 3.2 °C

Samples were checked for preservation. Where applicable, sample preservation was adjusted in the laboratory.

### Requested Analysis

<u>Method</u>	<u>Instrument</u>
SM-4500-NH3G	SC-1

### Sample Qualifier Summary

There were no qualifiers for the samples.

### Holding Times

All holding time requirements were met.

### Method Blanks

There were no detections in the Method Blank(s).

### Calibration

Initial calibration criteria for respective analysis were met. Frequency criteria for initial and continuing calibrations were met. Accuracy criteria for initial and continuing calibrations were met.

### Matrix Spikes

Source Samples Used For QC

<u>Batch</u>	<u>Method</u>	<u>Source Lab Number</u>	<u>Client Sample Name</u>
B050451	SM-4500-NH3G	1921993-01	<Not Client Sample>

Precision and accuracy requirements were within QC limits.

### LCS

The LCS recoveries were within QC limits.

### Discussion

CLP data package analysis batch sequence for 1913259 is in correct order for MSD.



BC Laboratories, Inc.

Environmental Testing Laboratory Since 1949

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

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

Subcontractor:

BC Labs  
4100 Alias Court  
Bakersfield, CA 93308

TEL: (661) 327-4911  
FAX: (661) 327-1919  
Acct #:

QC Level: Level IV

Field Sampler: SIGNED

19-22042

08-Jul-19

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests
N036398-001A / SC-100B-WDR-590 -1	Water	7/3/2019 11:20:00 AM	32OZP	SM4500-NH3D 1
N036398-002A / SC-700B-WDR-590 -2	Water	7/3/2019 11:10:00 AM	32OZP	SM4500-NH3D 1

Please cc Lucille Golosinda at lucille.golosinda@assetlaboratories.com

CHK BY	DISSEMINATION
SUB OUT	<input type="checkbox"/>

General Comments:

Please email sample receipt acknowledgement to the PM. Please cc andrea.gallardo@assetlaboratories.com

Please use PO#N36398A. Please email Invoices and Account Receivable Statements to ekira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.k@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. EDD Requirement Labspec7 edata.

GSO #: 545396060

Relinquished by:		Date/Time	7/8/2019 17:00
Relinquished by:		Date/Time	7/9/19 09:20



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1922042 Page 2 of 2

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 of 1							
Submission #: <u>19-22042</u>											
<b>SHIPPING INFORMATION</b>		<b>SHIPPING CONTAINER</b>		<b>FREE LIQUID</b>							
Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input checked="" type="checkbox"/>		Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/>		YES <input type="checkbox"/> NO <input type="checkbox"/>							
BC Lab Field Service <input type="checkbox"/> Other (Specify) <u>CHSD</u>		Other (Specify) _____		W / S							
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____											
All samples received? Yes <input type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input type="checkbox"/> No <input type="checkbox"/>											
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <u>97</u> Container: <u>CHSD</u> Thermometer ID: <u>274</u>		Date/Time: <u>7.9.19</u>							
		Temperature: (A) <u>3.2</u> °C / (C) <u>3.2</u> °C		Analyst Init: <u>DS</u>							
SAMPLE CONTAINERS		SAMPLE NUMBERS									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>6+</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS <u>124</u>		<u>A</u>	<u>A</u>								
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PTA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/608/808											
QT EPA 515/615/815											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
3oz EPA 548											
QT EPA 549											
QT EPA 801SM											
QT EPA 8270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz JAR											
SOIL SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											

Comments:

Sample Numbering Completed By: JHM

Date/Time: 7.9.19 9:20

Rev 21 05/23/2016





**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

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

Reported: 7/25/2019 11:07:36AM  
Project: Level IV  
Project Number: N036398  
Project Manager: Marlon B. Cartin

**BC Laboratories**  
**4100 Atlas Court**  
**Bakersfield, CA 93308**  
**Phone: 661-327-4911**

**SDG: 1922042**  
**Class: WET**  
**Method: SM-4500-NH3G**



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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

Reported: 7/25/2019 11:07:36AM  
Project: Level IV  
Project Number: N036398  
Project Manager: Marlon B. Cartin

**ANALYSES DATA PACKAGE COVER PAGE**  
**SM-4500-NH3G**

Laboratory: BC Laboratories

SDG: 1922042

Client: ASSET Laboratories- Las Vegas \$ADNV

Project: Level IV

**Client Sample Id:**

N036398-001A / SC-100B-WDR-590

N036398-002A / SC-700B-WDR-590

**Lab Sample Id:**

1922042-01

1922042-02

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Signature:

Name:

Sara Guron

Date:

07-25-2019

Title:

QA/QC Manager



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

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

Reported: 7/25/2019 11:07:36AM  
Project: Level IV  
Project Number: N036398  
Project Manager: Marlon B. Cartin

## METHOD DETECTION AND REPORTING LIMITS

### SM-4500-NH3G

Laboratory: BC Laboratories

SDG: 1922042

Client: ASSET Laboratories- Las Vegas \$ADNV

Project: Level IV

Matrix: Water

Instrument: SC-1

Analyte	MDL	PQL	Units
Ammonia as N (Distilled)	0.067	0.2	mg/L



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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

Reported: 7/25/2019 11:07:36AM  
Project: Level IV  
Project Number: N036398  
Project Manager: Marlon B. Cartin

**INORGANIC ANALYSIS DATA SHEET**  
**SM-4500-NH3G**

**036398-001A / SC-100B-WDR-59**

Laboratory: BC Laboratories

SDG: 1922042

Client: ASSET Laboratories- Las Vegas \$ADNV

Project: Level IV

Matrix: Water

Laboratory ID: 1922042-01

File ID: 20190710004-NH3-044

Sampled: 07/03/19 11:20

Prepared: 07/09/19 11:30

Analyzed: 07/10/19 09:26

Solids: 0.00

Preparation: No Prep

Initial/Final: 6 ml / 6 ml

Batch: B050451

Sequence: 1913259

Calibration: UNASSIGNED

Instrument: SC-1

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
7664-41-7	Ammonia as N (Distilled)	0.20	1	U	SM-4500-NH3G



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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

Reported: 7/25/2019 11:07:36AM  
Project: Level IV  
Project Number: N036398  
Project Manager: Marlon B. Cartin

**INORGANIC ANALYSIS DATA SHEET**  
**SM-4500-NH3G**

**036398-002A / SC-700B-WDR-59**

Laboratory: BC Laboratories

SDG: 1922042

Client: ASSET Laboratories- Las Vegas \$ADNV

Project: Level IV

Matrix: Water

Laboratory ID: 1922042-02

File ID: 20190710004-NH3-045

Sampled: 07/03/19 11:10

Prepared: 07/09/19 11:30

Analyzed: 07/10/19 09:27

Solids: 0.00

Preparation: No Prep

Initial/Final: 6 ml / 6 ml

Batch: B050451

Sequence: 1913259

Calibration: UNASSIGNED

Instrument: SC-1

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
7664-41-7	Ammonia as N (Distilled)	0.20	1	U	SM-4500-NH3G



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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

Reported: 7/25/2019 11:07:36AM  
Project: Level IV  
Project Number: N036398  
Project Manager: Marlon B. Cartin

**METHOD BLANK DATA SHEET**  
**SM-4500-NH3G**

Laboratory: BC Laboratories SDG: 1922042  
Client: ASSET Laboratories- Las Vegas \$ADNV Project: Level IV  
Matrix: Water Laboratory ID: B050451-BLK1 File ID: 20190710004-NH3-084  
Prepared: 07/09/19 11:30 Preparation: No Prep Initial/Final: 6 ml / 6 ml  
Analyzed: 07/10/19 10:02 Instrument: SC-1  
Batch: B050451 Sequence: 1913259 Calibration: UNASSIGNED

CAS NO.	COMPOUND	CONC. (mg/L)	Q
7664-41-7	Ammonia as N (Distilled)	0.20	U



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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

Reported: 7/25/2019 11:07:36AM  
Project: Level IV  
Project Number: N036398  
Project Manager: Marlon B. Cartin

**DUPLICATES**  
**SM-4500-NH3G**

**Duplicate**

Laboratory: BC Laboratories

SDG: 1922042

Client: ASSET Laboratories- Las Vegas \$ADNV

Project: Level IV

Matrix: Water

Laboratory ID: B050451-DUP1

Batch: B050451

Lab Source ID: 1921993-01

Preparation: No Prep

Initial/Final: 6 ml / 6 ml

Source Sample Name: Duplicate

% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	C	DUPLICATE CONCENTRATION (mg/L)	C	RPD %	Q	METHOD
Ammonia as N (Distilled)	20	0.061900		ND				SM-4500-NH3G

\* Values outside of QC limits



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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

Reported: 7/25/2019 11:07:36AM  
Project: Level IV  
Project Number: N036398  
Project Manager: Marlon B. Cartin

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY**  
**SM-4500-NH3G**

**Matrix Spike**

Laboratory: BC Laboratories SDG: 1922042  
Client: ASSET Laboratories- Las Vegas \$ADNV Project: Level IV  
Matrix: Water  
Batch: B050451 Laboratory ID: B050451-MS1  
Preparation: No Prep Initial/Final: 5.4 ml / 6 ml  
Source Sample Number: 1921993-01

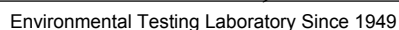
COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC. #	QC LIMITS REC.
Ammonia as N (Distilled)	1.1111	ND	1.1052	99.5	80 - 120

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD #	QC LIMITS	
					RPD	REC.
Ammonia as N (Distilled)	1.1111	1.1738	106	6.02	20	80 - 120

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits





Reported: 7/25/2019 11:07:36AM  
Project: Level IV  
Project Number: N036398  
Project Manager: Marlon B. Cartin

Laboratory:	<u>BC Laboratories</u>	SDG:	<u>1922042</u>
Client:	<u>ASSET Laboratories- Las Vegas \$ADNV</u>	Project:	<u>Level IV</u>
Matrix:	<u>Water</u>		
Batch:	<u>B050451</u>	Laboratory ID:	<u>B050451-BS1</u>
Preparation:	<u>No Prep</u>	Initial/Final:	<u>6 ml / 6 ml</u>

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC. #	QC LIMITS REC.
Ammonia as N (Distilled)	1.0000	0.95510	95.5	85 - 115

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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

Reported: 7/25/2019 11:07:36AM  
Project: Level IV  
Project Number: N036398  
Project Manager: Marlon B. Cartin

## HOLDING TIME SUMMARY

### SM-4500-NH3G

Laboratory: BC Laboratories

SDG: 1922042

Client: ASSET Laboratories- Las Vegas \$ADNV

Project: Level IV

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
N036398-001A / SC-100B-WDR-590	07/03/19 11:20	07/09/19 09:00	07/09/19 11:30	7.00	28.00	07/10/19 09:26	7.00	28.00	
N036398-002A / SC-700B-WDR-590	07/03/19 11:10	07/09/19 09:00	07/09/19 11:30	7.00	28.00	07/10/19 09:27	7.00	28.00	

\* Holding time not met

Note: If Prep or Analysis are performed within the hour (if holding time is based on hours) or within the day (if holding time is based on days), then the sample is not flagged as outside holding times. Calculated number of days are based on date received or date prepared depending on the test.

July 23, 2019

Doug Scott  
CH2M HILL  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

TEL: (970) 731-0636

FAX: (510) 622-9129

Workorder No.: N036398

RE: PG&E Topock, 680375CH.04.IM.OP.00

Attention: Doug Scott

Enclosed are the results for sample(s) received on July 03, 2019 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*

Puri Romualdo  
Laboratory Director

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



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00  
**Lab Order:** N036398

**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 BC Labs- Bakersfield,CA.

**Analytical Comments for EPA 200.7:**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Iron in QC samples N036498-001A-MS and N036498-001A-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

**Analytical Comments for EPA 200.8:**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N036398-001E-MS and N036398-001E-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N036398-001E-MS and N036398-001E-MSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for sample N036398-003 due to associated internal standard not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

---

---

**CLIENT:** CH2M HILL

**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**Lab Order:** N036398

## CASE NARRATIVE

---

internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

### Analytical Comments for EPA 218.6:

Dilution was necessary for sample N036398-003 due to matrix interference. Sample was analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Sample was reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.

### Analytical Comments for EPA 245.1:

Matrix Spike (MS) is outside recovery criteria in QC sample N036571-001B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

CALIFORNIA | P:562.219.7435 F:562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**ASSET Laboratories**

Date: 23-Jul-19

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00  
**Lab Order:** N036398  
**Contract No:** IM3PLANT-AR

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N036398-001A	SC-100B-WDR-590	Water	7/3/2019 11:20:00 AM	7/3/2019	7/23/2019
N036398-001B	SC-100B-WDR-590	Water	7/3/2019 11:20:00 AM	7/3/2019	7/23/2019
N036398-001C	SC-100B-WDR-590	Water	7/3/2019 11:20:00 AM	7/3/2019	7/23/2019
N036398-001D	SC-100B-WDR-590	Water	7/3/2019 11:20:00 AM	7/3/2019	7/23/2019
N036398-001E	SC-100B-WDR-590	Water	7/3/2019 11:20:00 AM	7/3/2019	7/23/2019
N036398-002A	SC-700B-WDR-590	Water	7/3/2019 11:10:00 AM	7/3/2019	7/23/2019
N036398-002B	SC-700B-WDR-590	Water	7/3/2019 11:10:00 AM	7/3/2019	7/23/2019
N036398-002C	SC-700B-WDR-590	Water	7/3/2019 11:10:00 AM	7/3/2019	7/23/2019
N036398-002D	SC-700B-WDR-590	Water	7/3/2019 11:10:00 AM	7/3/2019	7/23/2019
N036398-002E	SC-700B-WDR-590	Water	7/3/2019 11:10:00 AM	7/3/2019	7/23/2019
N036398-003A	SC-701-WDR-590	Water	7/3/2019 11:13:00 AM	7/3/2019	7/23/2019
N036398-003B	SC-701-WDR-590	Water	7/3/2019 11:13:00 AM	7/3/2019	7/23/2019
N036398-003C	SC-701-WDR-590	Water	7/3/2019 11:13:00 AM	7/3/2019	7/23/2019



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

# ASSET Laboratories

# ANALYTICAL RESULTS

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:20:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-001		

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

## SPECIFIC CONDUCTANCE

## EPA 120.1

RunID: <b>NV00922-WC_190703B</b>	QC Batch: <b>R134887</b>	PrepDate:	Analyst: <b>QBM</b>
Specific Conductance	7200	0.10	0.10
		umhos/cm	1
			7/3/2019 06:40 PM

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



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

# ASSET Laboratories

# ANALYTICAL RESULTS

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:10:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-002		

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

## SPECIFIC CONDUCTANCE

## EPA 120.1

RunID: <b>NV00922-WC_190703B</b>	QC Batch: <b>R134887</b>	PrepDate:	Analyst: <b>QBM</b>
Specific Conductance	7200	0.10	0.10
		umhos/cm	1
			7/3/2019 06:40 PM

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



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-701-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:13:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-003		

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

**SPECIFIC CONDUCTANCE**
**EPA 120.1**

RunID: <b>NV00922-WC_190703B</b>	QC Batch: <b>R134887</b>	PrepDate:	Analyst: <b>QBM</b>
Specific Conductance	45000	0.10	0.10
		umhos/cm	1
			7/3/2019 06:40 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 120.1\_WPGE**

Sample ID	N036398-003ADUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	134887		
Client ID:	ZZZZZZ	Batch ID:	R134887	TestNo:	EPA 120.1			Analysis Date:	7/3/2019	SeqNo:	3429743		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance		44900.000		0.10						45000	0.222	2	

**Qualifiers:**

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

**ASSET LABORATORIES**

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:20:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-001		

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

**TOTAL FILTERABLE RESIDUE**
**SM2540C**

RunID: <b>NV00922-WC_190708C</b>	QC Batch: <b>74483</b>	PrepDate: <b>7/8/2019</b>	Analyst: <b>LR</b>
Total Dissolved Solids (Residue, Filterable)	4100	50	50
		mg/L	1
			7/8/2019 01:13 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:10:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-002		

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

**TOTAL FILTERABLE RESIDUE**
**SM2540C**

RunID: <b>NV00922-WC_190708C</b>	QC Batch: <b>74483</b>	PrepDate: <b>7/8/2019</b>	Analyst: <b>LR</b>
Total Dissolved Solids (Residue, Filterable)	4000	50	50
		mg/L	1
			7/8/2019 01:13 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

[CALIFORNIA](#) | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

[NEVADA](#) | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-701-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:13:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-003		

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

**TOTAL FILTERABLE RESIDUE**
**SM2540C**

RunID: <b>NV00922-WC_190708C</b>	QC Batch: <b>74483</b>	PrepDate: <b>7/8/2019</b>	Analyst: <b>LR</b>
Total Dissolved Solids (Residue, Filterable)	31000	500	500
		mg/L	1
			7/8/2019 01:13 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 160.1\_2540C\_W**

Sample ID <b>LCS-74483</b>	SampType: <b>LCS</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>7/8/2019</b>	RunNo: <b>134958</b>
Client ID: <b>LCSW</b>	Batch ID: <b>74483</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>7/8/2019</b>	SeqNo: <b>3432198</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera	976.000	10	1000	0	97.6 80 120

Sample ID <b>MB-74483</b>	SampType: <b>MBLK</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>7/8/2019</b>	RunNo: <b>134958</b>
Client ID: <b>PBW</b>	Batch ID: <b>74483</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>7/8/2019</b>	SeqNo: <b>3432199</b>
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 <b>N036398-003ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>160.1_2540C</b>	Units: <b>mg/L</b>	Prep Date: <b>7/8/2019</b>	RunNo: <b>134958</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>74483</b>	TestNo: <b>SM2540C</b>		Analysis Date: <b>7/8/2019</b>	SeqNo: <b>3432206</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera	32400.000	500			31050 4.26 5

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:20:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-001		

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

**TOTAL METALS BY ICP**
**EPA 200.7**

RunID: <b>NV00922-ICP2_190716D</b>	QC Batch: <b>74601</b>	PrepDate: <b>7/16/2019</b>	Analyst: <b>CEI</b>			
Aluminum	ND	40	50	µg/L	1	7/16/2019 11:56 PM
Boron	1100	74	100	µg/L	1	7/16/2019 11:56 PM
Iron	ND	18	20	µg/L	1	7/16/2019 11:56 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:10:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-002		

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

**TOTAL METALS BY ICP**
**EPA 200.7**

RunID: <b>NV00922-ICP2_190716D</b>	QC Batch: <b>74601</b>	PrepDate: <b>7/16/2019</b>	Analyst: <b>CEI</b>			
Aluminum	ND	40	50	µg/L	1	7/17/2019 12:02 AM
Boron	990	74	100	µg/L	1	7/17/2019 12:02 AM
Iron	75	18	20	µg/L	1	7/17/2019 12:02 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 200.7\_WPGEPBPB**

Sample ID <b>MB-74601</b>	SampType: <b>MBLK</b>	TestCode: <b>200.7_WPGE</b>	Units: <b>µg/L</b>	Prep Date: <b>7/16/2019</b>	RunNo: <b>135166</b>
Client ID: <b>PBW</b>	Batch ID: <b>74601</b>	TestNo: <b>EPA 200.7</b>		Analysis Date: <b>7/16/2019</b>	SeqNo: <b>3444798</b>
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 <b>LCS-74601</b>	SampType: <b>LCS</b>	TestCode: <b>200.7_WPGE</b>	Units: <b>µg/L</b>	Prep Date: <b>7/16/2019</b>	RunNo: <b>135166</b>
Client ID: <b>LCSW</b>	Batch ID: <b>74601</b>	TestNo: <b>EPA 200.7</b>		Analysis Date: <b>7/16/2019</b>	SeqNo: <b>3444799</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum	9898.920	50	10000	0	99.0 85 115
Boron	4876.080	100	5000	0	97.5 85 115
Iron	104.670	20	100.0	0	105 85 115

Sample ID <b>N036498-001A-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.7_WPGE</b>	Units: <b>µg/L</b>	Prep Date: <b>7/16/2019</b>	RunNo: <b>135166</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>74601</b>	TestNo: <b>EPA 200.7</b>		Analysis Date: <b>7/16/2019</b>	SeqNo: <b>3444803</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum	11849.778	50	10000	1872	99.8 75 125
Boron	5727.935	100	5000	837.0	97.8 75 125
Iron	1811.340	20	100.0	1926	-114 75 125 S

Sample ID <b>N036498-001A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>200.7_WPGE</b>	Units: <b>µg/L</b>	Prep Date: <b>7/16/2019</b>	RunNo: <b>135166</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>74601</b>	TestNo: <b>EPA 200.7</b>		Analysis Date: <b>7/16/2019</b>	SeqNo: <b>3444804</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum	11789.543	50	10000	1872	99.2 75 125 11850 0.510 20
Boron	5697.321	100	5000	837.0	97.2 75 125 5728 0.536 20
Iron	1802.988	20	100.0	1926	-123 75 125 1811 0.462 20 S

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 200.7\_WPGEPPB**

Sample ID	<b>N036498-001A-PS</b>	SampType:	<b>PS</b>	TestCode:	<b>200.7_WPGE</b>	Units:	<b>µg/L</b>	Prep Date:		RunNo:	<b>135166</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>74601</b>	TestNo:	<b>EPA 200.7</b>			Analysis Date:	<b>7/16/2019</b>	SeqNo:	<b>3444802</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	12072.211	50	10000	1872	102	80	120				
Boron	5794.679	100	5000	837.0	99.2	80	120				
Iron	1954.166	20	100.0	1926	28.6	80	120				S

**Qualifiers:**

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

**ASSET LABORATORIES**

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:20:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-001		

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

**TOTAL METALS BY ICPMS**
**EPA 200.8**

RunID: <b>NV00922-ICP7_190717E</b>	QC Batch: <b>74595</b>	PrepDate: <b>7/15/2019</b>	Analyst: <b>CEI</b>			
Antimony	ND	0.16	0.50	µg/L	1	7/18/2019 12:22 AM
Arsenic	3.1	0.081	0.10	µg/L	1	7/18/2019 12:22 AM
Barium	30	0.15	1.0	µg/L	1	7/18/2019 12:22 AM
Copper	ND	0.55	1.0	µg/L	1	7/18/2019 12:22 AM
Lead	ND	0.13	1.0	µg/L	1	7/18/2019 12:22 AM
Manganese	ND	0.26	0.50	µg/L	1	7/18/2019 12:22 AM
Molybdenum	23	0.21	0.50	µg/L	1	7/18/2019 12:22 AM
Nickel	ND	0.26	1.0	µg/L	1	7/18/2019 12:22 AM
Zinc	26	2.3	10	µg/L	1	7/18/2019 12:22 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:10:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-002		

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

**TOTAL METALS BY ICPMS**
**EPA 200.8**

RunID: NV00922-ICP7_190717E	QC Batch: 74595	PrepDate: 7/15/2019	Analyst: CEI			
Antimony	ND	0.16	0.50	µg/L	1	7/18/2019 01:17 AM
Arsenic	ND	0.081	0.10	µg/L	1	7/18/2019 01:17 AM
Barium	14	0.15	1.0	µg/L	1	7/18/2019 01:17 AM
Copper	ND	0.55	1.0	µg/L	1	7/18/2019 01:17 AM
Lead	ND	0.13	1.0	µg/L	1	7/18/2019 01:17 AM
Manganese	ND	0.26	0.50	µg/L	1	7/18/2019 01:17 AM
Molybdenum	23	0.21	0.50	µg/L	1	7/18/2019 01:17 AM
Nickel	1.2	0.26	1.0	µg/L	1	7/18/2019 01:17 AM
Zinc	ND	2.3	10	µg/L	1	7/18/2019 01:17 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-701-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:13:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-003		

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

**TOTAL METALS BY ICPMS**
**EPA 200.8**

RunID: <b>NV00922-ICP7_190717E</b>	QC Batch: <b>74595</b>	PrepDate: <b>7/15/2019</b>	Analyst: <b>CEI</b>			
Antimony	ND	0.78	2.5	µg/L	5	7/18/2019 01:32 AM
Arsenic	3.5	0.081	0.10	µg/L	1	7/18/2019 01:27 AM
Barium	120	0.75	5.0	µg/L	5	7/18/2019 01:32 AM
Beryllium	ND	1.1	12	µg/L	25	7/18/2019 01:37 AM
Cadmium	ND	0.26	2.5	µg/L	5	7/18/2019 01:32 AM
Cobalt	0.68	0.042	0.50	µg/L	1	7/18/2019 01:27 AM
Copper	3.8	0.55	1.0	µg/L	1	7/18/2019 01:27 AM
Lead	ND	0.64	5.0	µg/L	5	7/18/2019 01:32 AM
Manganese	87	0.26	0.50	µg/L	1	7/18/2019 01:27 AM
Molybdenum	190	1.1	2.5	µg/L	5	7/18/2019 01:32 AM
Nickel	19	0.26	1.0	µg/L	1	7/18/2019 01:27 AM
Selenium	31	1.8	2.5	µg/L	5	7/18/2019 01:32 AM
Silver	ND	1.2	2.5	µg/L	5	7/18/2019 01:32 AM
Thallium	ND	0.96	2.5	µg/L	5	7/18/2019 01:32 AM
Vanadium	5.6	0.28	1.0	µg/L	1	7/18/2019 01:27 AM
Zinc	ND	2.3	10	µg/L	1	7/18/2019 01:27 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 200.8\_W**

Sample ID	MB-74595	SampType:	MBLK	TestCode:	200.8_W	Units:	µg/L	Prep Date:	7/15/2019	RunNo:	135227	
Client ID:	PBW	Batch ID:	74595	TestNo:	EPA 200.8			Analysis Date:	7/18/2019	SeqNo:	3448368	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		ND	0.50									
Arsenic		ND	0.10									
Barium		ND	1.0									
Beryllium		ND	0.50									
Cadmium		ND	0.50									
Cobalt		ND	0.50									
Copper		ND	1.0									
Lead		ND	1.0									
Manganese		ND	0.50									
Molybdenum		ND	0.50									
Nickel		ND	1.0									
Selenium		ND	0.50									
Silver		ND	0.50									
Thallium		ND	0.50									
Vanadium		ND	1.0									
Zinc		ND	10									

Sample ID	LCS-74595	SampType: LCS	TestCode: 200.8_W	Units: µg/L	Prep Date: 7/15/2019	RunNo: 135227					
Client ID:	LCSW	Batch ID: 74595	TestNo: EPA 200.8		Analysis Date: 7/18/2019	SeqNo: 3448369					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.764	0.50	10.00	0	97.6	85	115				
Arsenic	9.879	0.10	10.00	0	98.8	85	115				
Barium	9.557	1.0	10.00	0	95.6	85	115				
Beryllium	9.694	0.50	10.00	0	96.9	85	115				
Cadmium	9.948	0.50	10.00	0	99.5	85	115				
Cobalt	9.419	0.50	10.00	0	94.2	85	115				
Copper	9.450	1.0	10.00	0	94.5	85	115				

**Qualifiers:**

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

Calculations are based on raw values

**ASSET LABORATORIES**

ANALYTICAL QUALITY ASSURANCE PROGRAM, ISO 17025:2017

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.8\_W

Sample ID	<b>LCS-74595</b>	SampType:	<b>LCS</b>	TestCode:	<b>200.8_W</b>	Units:	<b>µg/L</b>	Prep Date:	<b>7/15/2019</b>	RunNo:	<b>135227</b>
Client ID:	<b>LCSW</b>	Batch ID:	<b>74595</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>7/18/2019</b>	SeqNo:	<b>3448369</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	9.373	1.0	10.00	0	93.7	85	115				
Manganese	101.882	0.50	100.0	0	102	85	115				
Molybdenum	9.764	0.50	10.00	0	97.6	85	115				
Nickel	10.073	1.0	10.00	0	101	85	115				
Selenium	9.441	0.50	10.00	0	94.4	85	115				
Silver	10.526	0.50	10.00	0	105	85	115				
Thallium	9.327	0.50	10.00	0	93.3	85	115				
Vanadium	9.879	1.0	10.00	0	98.8	85	115				
Zinc	9.403	10	10.00	0	94.0	85	115				

Sample ID	<b>N036398-001E-MS</b>	SampType:	<b>MS</b>	TestCode:	<b>200.8_W</b>	Units:	<b>µg/L</b>	Prep Date:	<b>7/15/2019</b>	RunNo:	<b>135227</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>74595</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>7/18/2019</b>	SeqNo:	<b>3448375</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.164	0.50	10.00	0	102	75	125				
Arsenic	13.305	0.10	10.00	3.077	102	75	125				
Barium	38.278	1.0	10.00	29.61	86.7	75	125				
Beryllium	12.904	0.50	10.00	0	129	75	125				S
Cadmium	9.979	0.50	10.00	0	99.8	75	125				
Cobalt	8.695	0.50	10.00	0	86.9	75	125				
Copper	4.282	1.0	10.00	0	42.8	75	125				S
Lead	9.074	1.0	10.00	0	90.7	75	125				
Manganese	73.372	0.50	100.0	0	73.4	75	125				S
Molybdenum	32.300	0.50	10.00	22.72	95.8	75	125				
Nickel	8.883	1.0	10.00	0	88.8	75	125				
Selenium	13.312	0.50	10.00	3.822	94.9	75	125				
Silver	9.707	0.50	10.00	0	97.1	75	125				
Thallium	8.920	0.50	10.00	0	89.2	75	125				
Vanadium	17.425	1.0	10.00	7.851	95.7	75	125				
Zinc	6.084	10	10.00	25.91	-198	75	125				S

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.8\_W

Sample ID	N036398-001E-MSD	SampType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 7/15/2019				RunNo: 135227		
Client ID:	ZZZZZZ	Batch ID: 74595	TestNo: EPA 200.8	Analysis Date: 7/18/2019				SeqNo: 3448377			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.007	0.50	10.00	0	100	75	125	10.16	1.56	20	
Arsenic	13.481	0.10	10.00	3.077	104	75	125	13.30	1.31	20	
Barium	38.470	1.0	10.00	29.61	88.6	75	125	38.28	0.501	20	
Beryllium	12.822	0.50	10.00	0	128	75	125	12.90	0.641	20	S
Cadmium	9.777	0.50	10.00	0	97.8	75	125	9.979	2.04	20	
Cobalt	8.493	0.50	10.00	0	84.9	75	125	8.695	2.35	20	
Copper	4.353	1.0	10.00	0	43.5	75	125	4.282	1.65	20	S
Lead	9.129	1.0	10.00	0	91.3	75	125	9.074	0.601	20	
Manganese	71.778	0.50	100.0	0	71.8	75	125	73.37	2.20	20	S
Molybdenum	32.495	0.50	10.00	22.72	97.7	75	125	32.30	0.600	20	
Nickel	8.916	1.0	10.00	0	89.2	75	125	8.883	0.364	20	
Selenium	13.835	0.50	10.00	3.822	100	75	125	13.31	3.85	20	
Silver	9.662	0.50	10.00	0	96.6	75	125	9.707	0.464	20	
Thallium	8.970	0.50	10.00	0	89.7	75	125	8.920	0.558	20	
Vanadium	17.261	1.0	10.00	7.851	94.1	75	125	17.43	0.945	20	
Zinc	6.151	10	10.00	25.91	-198	75	125	6.084	0	20	S

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 200.8\_W**

Sample ID	<b>N036398-001E-PS</b>	SampType:	<b>PS</b>	TestCode:	<b>200.8_W</b>	Units:	<b>µg/L</b>	Prep Date:		RunNo:	<b>135227</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>74595</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>7/18/2019</b>	SeqNo:	<b>3448373</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.081	0.50	10.00	0	101	80	120				
Arsenic	13.262	0.10	10.00	0	133	80	120				S
Barium	38.832	1.0	10.00	0	388	80	120				S
Beryllium	12.889	0.50	10.00	0	129	80	120				S
Cadmium	9.973	0.50	10.00	0	99.7	80	120				
Cobalt	8.828	0.50	10.00	0	88.3	80	120				
Copper	4.492	1.0	10.00	0	44.9	80	120				S
Lead	9.190	1.0	10.00	0	91.9	80	120				
Manganese	73.143	0.50	100.0	0	73.1	80	120				S
Molybdenum	33.481	0.50	10.00	0	335	80	120				S
Nickel	8.895	1.0	10.00	0	88.9	80	120				
Selenium	14.908	0.50	10.00	0	149	80	120				S
Silver	9.810	0.50	10.00	0	98.1	80	120				
Thallium	8.103	0.50	10.00	0	81.0	80	120				
Vanadium	17.884	1.0	10.00	0	179	80	120				S
Zinc	6.186	10	10.00	0	61.9	80	120				S

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:20:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>HEXAVALENT CHROMIUM BY IC</b>							
				<b>EPA 218.6</b>			
RunID: <b>NV00922-IC7_190705A</b>	QC Batch: <b>R134905</b>		PrepDate:		Analyst: <b>RAB</b>		
Hexavalent Chromium	450	3.3	20		µg/L	100	7/5/2019 01:19 PM
<b>TOTAL METALS BY ICPMS</b>							
				<b>EPA 200.8</b>			
RunID: <b>NV00922-ICP7_190717E</b>	QC Batch: <b>74595</b>		PrepDate: <b>7/15/2019</b>		Analyst: <b>CEI</b>		
Chromium	450	0.65	5.0		µg/L	5	7/18/2019 12:27 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:10:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-002		

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

**HEXAVALENT CHROMIUM BY IC**
**EPA 218.6**

RunID: <b>NV00922-IC7_190705A</b>	QC Batch: <b>R134905</b>	PrepDate:	Analyst: <b>RAB</b>
Hexavalent Chromium	ND 0.033 0.20	µg/L	7/5/2019 01:48 PM

**TOTAL METALS BY ICPMS**
**EPA 200.8**

RunID: <b>NV00922-ICP7_190717E</b>	QC Batch: <b>74595</b>	PrepDate: <b>7/15/2019</b>	Analyst: <b>CEI</b>
Chromium	ND 0.13 1.0	µg/L	7/18/2019 01:17 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-701-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:13:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>HEXAVALENT CHROMIUM BY IC</b>							
<b>EPA 218.6</b>							
RunID: <b>NV00922-IC7_190705A</b>	QC Batch: <b>R134905</b>			PrepDate:		Analyst: <b>RAB</b>	
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	7/5/2019 02:44 PM
<b>TOTAL METALS BY ICPMS</b>							
<b>EPA 200.8</b>							
RunID: <b>NV00922-ICP7_190717E</b>	QC Batch: <b>74595</b>			PrepDate:	<b>7/15/2019</b>	Analyst: <b>CEI</b>	
Chromium	1.8	0.13	1.0		µg/L	1	7/18/2019 01:27 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 200.8\_W\_CRPGE**

Sample ID <b>MB-74595</b>	SampType: <b>MBLK</b>	TestCode: <b>200.8_W_CR</b>	Units: <b>µg/L</b>	Prep Date: <b>7/15/2019</b>	RunNo: <b>135227</b>
Client ID: <b>PBW</b>	Batch ID: <b>74595</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>7/18/2019</b>	SeqNo: <b>3448246</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	ND	1.0			

Sample ID <b>LCS-74595</b>	SampType: <b>LCS</b>	TestCode: <b>200.8_W_CR</b>	Units: <b>µg/L</b>	Prep Date: <b>7/15/2019</b>	RunNo: <b>135227</b>
Client ID: <b>LCSW</b>	Batch ID: <b>74595</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>7/18/2019</b>	SeqNo: <b>3448247</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	9.895	1.0	10.00	0	98.9 85 115

Sample ID <b>N036398-001E-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_W_CR</b>	Units: <b>µg/L</b>	Prep Date: <b>7/15/2019</b>	RunNo: <b>135227</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>74595</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>7/18/2019</b>	SeqNo: <b>3448254</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	437.089	5.0	10.00	447.5	-105 75 125 S

Sample ID <b>N036398-001E-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>200.8_W_CR</b>	Units: <b>µg/L</b>	Prep Date: <b>7/15/2019</b>	RunNo: <b>135227</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>74595</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>7/18/2019</b>	SeqNo: <b>3448258</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	440.650	5.0	10.00	447.5	-68.9 75 125 437.1 0.811 20 S

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 218.6\_WU\_PGE

Sample ID	MB-R134905	SampType:	MBLK	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	134905		
Client ID:	PBW	Batch ID:	R134905	TestNo:	EPA 218.6			Analysis Date:	7/5/2019	SeqNo:	3430506		
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-R134905	SampType:	LCS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	134905		
Client ID:	LCSW	Batch ID:	R134905	TestNo:	EPA 218.6			Analysis Date:	7/5/2019	SeqNo:	3430507		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 5.033 0.20 5.000 0 101 90 110

Sample ID	N036398-001CMS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	134905		
Client ID:	ZZZZZZ	Batch ID:	R134905	TestNo:	EPA 218.6			Analysis Date:	7/5/2019	SeqNo:	3430515		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 953.770 20 500.0 449.7 101 90 110

Sample ID	N036398-001CMSD	SampType: MSD	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 134905					
Client ID:	ZZZZZZ	Batch ID: R134905	TestNo: EPA 218.6		Analysis Date: 7/5/2019	SeqNo: 3430516					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 958.930 20 500.0 449.7 102 90 110 953.8 0.540 20

Sample ID	N036398-002CMS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	134905		
Client ID:	ZZZZZZ	Batch ID:	R134905	TestNo:	EPA 218.6			Analysis Date:	7/5/2019	SeqNo:	3430518		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 1.173 0.20 1.000 0.1313 104 90 110

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 218.6\_WU\_PGE**

Sample ID	N036398-001CDUP	SampType:	DUP	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	134905		
Client ID:	ZZZZZZ	Batch ID:	R134905	TestNo:	EPA 218.6			Analysis Date:	7/5/2019	SeqNo:	3430519		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	445.640	20						449.7	0.914	20	
---------------------	---------	----	--	--	--	--	--	-------	-------	----	--

Sample ID	N036398-003BMS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	134905		
Client ID:	ZZZZZZ	Batch ID:	R134905	TestNo:	EPA 218.6			Analysis Date:	7/5/2019	SeqNo:	3430520		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	5.450	1.0	5.000	0	109	90	110				
---------------------	-------	-----	-------	---	-----	----	-----	--	--	--	--

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 200.8\_W\_CRPGE**

Sample ID	N036398-001E-PS	SampType:	PS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	135227		
Client ID:	ZZZZZZ	Batch ID:	74595	TestNo:	EPA 200.8			Analysis Date:	7/18/2019	SeqNo:	3448252		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		452.859		5.0	10.00	447.5	53.2	80	120				S

**Qualifiers:**

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

**ASSET LABORATORIES**

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:20:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-001		

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

**TURBIDITY**
**SM 2130B**

RunID: <b>NV00922-WC_190703A</b>	QC Batch: <b>R134886</b>	PrepDate:	Analyst: <b>QBM</b>
Turbidity	ND	0.10	0.10
		NTU	1
			7/3/2019 08:05 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

[CALIFORNIA](#) | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

[NEVADA](#) | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:10:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-002		

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

**TURBIDITY**
**SM 2130B**

RunID: <b>NV00922-WC_190703A</b>	QC Batch: <b>R134886</b>	PrepDate:	Analyst: <b>QBM</b>
Turbidity	ND	0.10	0.10
		NTU	1
			7/3/2019 08:05 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 2130\_W**

Sample ID	MB-R134886	SampType:	MBLK	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	134886		
Client ID:	PBW	Batch ID:	R134886	TestNo:	SM 2130B			Analysis Date:	7/3/2019	SeqNo:	3429734		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity		ND		0.10									

Sample ID	N036398-002BDUP	SampType:	DUP	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	134886		
Client ID:	ZZZZZZ	Batch ID:	R134886	TestNo:	SM 2130B			Analysis Date:	7/3/2019	SeqNo:	3429738		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity		ND		0.10						0	0	30	

**Qualifiers:**

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

**ASSET LABORATORIES**

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, &amp; FOODS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-701-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:13:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-003		

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

**TOTAL MERCURY BY COLD VAPOR TECHNIQUE**
**EPA 245.1**

RunID: <b>NV00922-AA2_190718B</b>	QC Batch: <b>74646</b>	PrepDate: <b>7/18/2019</b>	Analyst: <b>MG</b>
Mercury	ND	0.13	0.20
		µg/L	1
			7/18/2019 12:42 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 245.1\_W**

Sample ID <b>MB-74646</b>	SampType: <b>MBLK</b>	TestCode: <b>245.1_W</b>	Units: <b>µg/L</b>	Prep Date: <b>7/18/2019</b>	RunNo: <b>135211</b>
Client ID: <b>PBW</b>	Batch ID: <b>74646</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>7/18/2019</b>	SeqNo: <b>3447637</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	ND	0.20			

Sample ID <b>LCS-74646</b>	SampType: <b>LCS</b>	TestCode: <b>245.1_W</b>	Units: <b>µg/L</b>	Prep Date: <b>7/18/2019</b>	RunNo: <b>135211</b>
Client ID: <b>LC SW</b>	Batch ID: <b>74646</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>7/18/2019</b>	SeqNo: <b>3447638</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	4.560	0.20	5.000	0	91.2 85 115

Sample ID <b>N036398-003C-MS</b>	SampType: <b>MS</b>	TestCode: <b>245.1_W</b>	Units: <b>µg/L</b>	Prep Date: <b>7/18/2019</b>	RunNo: <b>135211</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>74646</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>7/18/2019</b>	SeqNo: <b>3447639</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	4.570	0.20	5.000	0	91.4 75 125

Sample ID <b>N036398-003C-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>245.1_W</b>	Units: <b>µg/L</b>	Prep Date: <b>7/18/2019</b>	RunNo: <b>135211</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>74646</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>7/18/2019</b>	SeqNo: <b>3447640</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	4.550	0.20	5.000	0	91.0 75 125 4.570 0.439 20

Sample ID <b>N036571-001B-MS</b>	SampType: <b>MS</b>	TestCode: <b>245.1_W</b>	Units: <b>µg/L</b>	Prep Date: <b>7/18/2019</b>	RunNo: <b>135211</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>74646</b>	TestNo: <b>EPA 245.1</b>		Analysis Date: <b>7/18/2019</b>	SeqNo: <b>3447653</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	3.160	0.20	5.000	0	63.2 75 125 S

**Qualifiers:**

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



**ASSET LABORATORIES**  
ANALYTICAL QUALITY SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

**CALIFORNIA** | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:20:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-001		

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

**ANIONS BY ION CHROMATOGRAPHY**
**EPA 300.0**

RunID: NV00922-IC8_190705A	QC Batch: R134933	PrepDate:	Analyst: RAB
Fluoride	3.0 0.048	0.50	mg/L 5 7/5/2019 11:15 AM

**ANIONS BY ION CHROMATOGRAPHY**
**EPA 300.0**

RunID: NV00922-IC8_190705A	QC Batch: R134933	PrepDate:	Analyst: RAB
Sulfate	470 2.0	25	mg/L 50 7/5/2019 04:22 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

[CALIFORNIA](#) | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

[NEVADA](#) | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:10:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-002		

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

**ANIONS BY ION CHROMATOGRAPHY**
**EPA 300.0**

RunID: NV00922-IC8_190705A	QC Batch: R134933	PrepDate:	Analyst: RAB
Fluoride	2.6 0.048	0.50	mg/L 5 7/5/2019 11:30 AM

**ANIONS BY ION CHROMATOGRAPHY**
**EPA 300.0**

RunID: NV00922-IC8_190705A	QC Batch: R134933	PrepDate:	Analyst: RAB
Sulfate	480 2.0	25	mg/L 50 7/5/2019 04:37 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-701-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:13:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-003		

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

**ANIONS BY ION CHROMATOGRAPHY**
**EPA 300.0**

RunID: <b>NV00922-IC8_190705A</b>	QC Batch: <b>R134933</b>	PrepDate:	Analyst: <b>RAB</b>
Fluoride	20 0.19	2.0	mg/L 20 7/5/2019 11:45 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 300\_W\_FPGE**

Sample ID	MB-RR134933_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	134933			
Client ID:	PBW	Batch ID:	R134933	TestNo:	EPA 300.0			Analysis Date:	7/5/2019	SeqNo:	3431551			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		ND		0.10										

Sample ID	LCS-RR134933_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	134933			
Client ID:	LCSW	Batch ID:	R134933	TestNo:	EPA 300.0			Analysis Date:	7/5/2019	SeqNo:	3431552			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		1.254		0.10	1.250	0		100	90	110				

Sample ID	N036398-001BMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	134933			
Client ID:	ZZZZZZ	Batch ID:	R134933	TestNo:	EPA 300.0			Analysis Date:	7/5/2019	SeqNo:	3431556			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		8.787		0.50	6.250	2.988		92.8	80	120				

Sample ID	N036398-001BMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	134933			
Client ID:	ZZZZZZ	Batch ID:	R134933	TestNo:	EPA 300.0			Analysis Date:	7/5/2019	SeqNo:	3431557			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		8.774		0.50	6.250	2.988		92.6	80	120	8.787	0.148	20	

Sample ID	N036398-003ADUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	134933			
Client ID:	ZZZZZZ	Batch ID:	R134933	TestNo:	EPA 300.0			Analysis Date:	7/5/2019	SeqNo:	3431558			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		19.624		2.0							20.03	2.03	20	

**Qualifiers:**

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


**ASSET LABORATORIES**  
ANALYTICAL QUALITY SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

**CALIFORNIA** | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_SO4PGE

Sample ID	<b>MB-R134933_SO4</b>	SampType:	<b>MBLK</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>134933</b>
Client ID:	<b>PBW</b>	Batch ID:	<b>R134933</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>7/5/2019</b>	SeqNo:	<b>3431569</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate ND 0.50

Sample ID	<b>LCS-R134933_SO4</b>	SampType:	<b>LCS</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>134933</b>
Client ID:	<b>LCSW</b>	Batch ID:	<b>R134933</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>7/5/2019</b>	SeqNo:	<b>3431570</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 3.850 0.50 4.000 0 96.3 90 110

Sample ID	<b>N036398-001BMS</b>	SampType:	<b>MS</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>134933</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R134933</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>7/5/2019</b>	SeqNo:	<b>3431577</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 667.340 25 200.0 471.3 98.0 80 120

Sample ID	<b>N036398-001BMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>134933</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R134933</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>7/5/2019</b>	SeqNo:	<b>3431578</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 669.060 25 200.0 471.3 98.9 80 120 667.3 0.257 20

Sample ID	<b>N036398-002BDUP</b>	SampType:	<b>DUP</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>134933</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R134933</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>7/5/2019</b>	SeqNo:	<b>3431579</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 474.900 25 477.6 0.573 20

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:20:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-001		

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

**NITRATE/NITRITE-N BY CADMIUM REDUCTION**
**SM4500-NO3F**

RunID: <b>NV00922-WC_190708B</b>	QC Batch: <b>R134943</b>	PrepDate:	Analyst: <b>RAB</b>
Nitrate/Nitrite as N	2.7 0.16	0.25	mg/L 5 7/8/2019

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 23-Jul-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-590
<b>Lab Order:</b>	N036398	<b>Collection Date:</b>	7/3/2019 11:10:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036398-002		

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

**NITRATE/NITRITE-N BY CADMIUM REDUCTION**
**SM4500-NO3F**

RunID: <b>NV00922-WC_190708B</b>	QC Batch: <b>R134943</b>	PrepDate:	Analyst: <b>RAB</b>
Nitrate/Nitrite as N	2.7 0.16	0.25	mg/L 5 7/8/2019

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036398  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 4500N03F\_W**

Sample ID	MB-R134943	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	134943			
Client ID:	PBW	Batch ID:	R134943	TestNo:	SM4500-NO3			Analysis Date:	7/8/2019	SeqNo:	3431808			
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-R134943	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	134943			
Client ID:	LCSW	Batch ID:	R134943	TestNo:	SM4500-NO3			Analysis Date:	7/8/2019	SeqNo:	3431809			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		0.479		0.050	0.5000	0		95.9	85	115				

Sample ID	N036260-004BDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	134943			
Client ID:	ZZZZZZ	Batch ID:	R134943	TestNo:	SM4500-NO3			Analysis Date:	7/8/2019	SeqNo:	3431813			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		7.577		0.50							7.492	1.13	20	

Sample ID	N036260-001BMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	134943			
Client ID:	ZZZZZZ	Batch ID:	R134943	TestNo:	SM4500-NO3			Analysis Date:	7/8/2019	SeqNo:	3431816			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		10.442		0.50	5.000	5.628		96.3	75	125				

Sample ID	N036260-001BMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	134943			
Client ID:	ZZZZZZ	Batch ID:	R134943	TestNo:	SM4500-NO3			Analysis Date:	7/8/2019	SeqNo:	3431817			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		10.776		0.50	5.000	5.628		103	75	125	10.44	3.15	20	

**Qualifiers:**

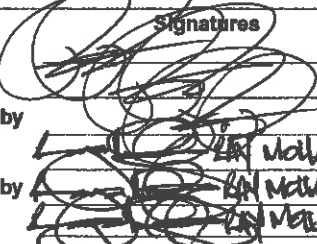
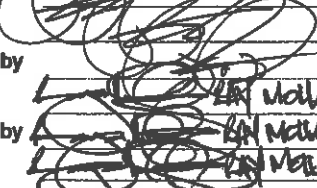




B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out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


**ASSET LABORATORIES**  
ANALYTICAL QUALITY SERVICES FOR THE ENVIRONMENTAL, INDUSTRIAL, AND FOOD INDUSTRIES
**CALIFORNIA** | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

<b>Project Name</b> PG&E Topock <b>Location</b> PG&E Topock <b>Project Number</b> 680375CH.04.IM.OP.00 <b>Project Manager</b> Scott O'Donnell <b>Sample Manager</b> Shawn Duffy  <b>Task Order</b> <b>Project</b> IM3PLANT-ARAR-WDR-590 <b>Turnaround Time</b> 10 Days <b>Shipping Date:</b> 7/3/2019 <b>COC Number:</b> 590				<b>Container:</b> 1 Liter Poly 4°C Lab H2SO4 4°C	1 Liter Poly 4°C	1 Liter Poly 4°C	1 Liter Poly 4°C	250 ml Poly 4°C	1 Liter Poly 4°C Lab H2SO4 4°C	1 Liter Poly 4°C	500 ml Poly 4°C	500 ml Poly 4°C	500 ml Poly 4°C	1 Liter Poly 4°C		Number of Containers	COMMENTS
				<b>Preservatives:</b> 4°C Lab H2SO4													
				<b>Filtered:</b> NA	NA	NA	NA	NA	NA	NA	NA	NA					
				<b>Holding Time:</b> 28	7	7	7	1	28	7	180	180	180	7			
				AMMONIA (SM4500NH3D)	Anions (E300.0) FI & SO4	Anions (E300.0) Fluoride	CONDUCTIVITY (E120.1)	E218.6 Lab Filtered	Nitrate/Nitrite (SM4500NO3-E)	TDS (SM2540C)	Total Metals (E200.8 Mn)	Total Metals (E200.7 and E200.8)	Total Titratable Metals	Turbidity (SM2130)			
DATE	TIME	Matrix															
SC-100B-WDR-590	7/3/2019	11:20	Water	X	X		X	X	X	X		X		X	N036398-01	4	
SC-700B-WDR-590	7/3/2019	11:10	Water	X	X		X	X	X	X		X		X	-02	4	
SC-701-WDR-590	7/3/2019	11:13	Water			X	X	X		X	X		X		-03	3	
TOTAL NUMBER OF CONTAINERS															11		

<b>Signatures</b> Approved by:  Sampled by:  Relinquished by:  Received by:  Relinquished by:  Received by: 		<b>Date/Time</b> 7:00 7-3-19 11:20 7-3-19 11:10 7-3-19 14:30 7-3-19 17:21 7-3-19 17:21	<b>Shipping Details</b> Method of Shipment: FedEx On Ice: (yes) / no <b>IF #2 4-B</b> Airbill No: Lab Name: ASSET Laboratories Lab Phone: (702) 307-2659	<b>ATTN:</b>  Sample Custody and Marlon Cartin	<b>Special Instructions:</b> The SC-100B & SC-700B Total metals List: Cr,Al,Sb,As,Ba,B,Cu,Pb,Mn,Mo,Ni,Fe,Zn  <b>Report Copy to</b> Doug Scott (970) 731-0636
--	--	---	---	--	--

## 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: 7/3/2019 Workorder: N036398  
 Rep sample Temp (Deg C): 4.8 IR Gun ID: 2  
 Temp Blank: ☒ Yes ☐ No  
 Carrier name: ASSET  
 Last 4 digits of Tracking No.: N/A Packing Material Used: Bubble Wrap  
 Cooling process: ☒ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

### Sample Receipt Checklist

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

Comments: Samples for Cr 6+ were lab filtered and then preserved with Ammonium buffer.  
 Sample for Ammonia/NO3- was lab preserved with H2SO4 and for Total Metals with HNO3. Adjusted to pH < 2.

For:

Checklist Completed By: RM  7/8/2019

 LG 071019  
 Reviewed By: \_\_\_\_\_



# ASSET Laboratories

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

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

## CHAIN-OF-CUSTODY RECORD

Page 1 of 1

QC Level: Level IV

**Subcontractor:**

BC Labs  
4100 Atlas Court  
Bakersfield, CA 93308

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

Field Sampler: SIGNED

08-Jul-19

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3D		
N036398-001A / SC-100B-WDR-590	Water	7/3/2019 11:20:00 AM	32OZP	1		
N036398-002A / SC-700B-WDR-590	Water	7/3/2019 11:10:00 AM	32OZP	1		

Please cc Lucille Golosinda at lucille.golosinda@assetlaboratories.com

General Comments: Please email sample receipt acknowledgement to the PM. Please cc andrea.gallardo@assetlaboratories.com

Please use PO#:N36398A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. EDD Requirement Labspec7 edata.

GSO #: 545396060

	Date/Time		Date/Time
Relinquished by: <u>YRJ</u>	7/8/2019 17:00	Received by: _____	_____
Relinquished by: _____	_____	Received by: _____	_____



## List of Analysts

### ASSET Laboratories Work Order: N036398

NAME	TEST METHOD
Quennie Manimtim	EPA 120.1, SM 2130B
Claire Ignacio	EPA 200.7, EPA 200.8
Lilia Ramit	SM 2540C
Ria Abes	EPA 218.6, EPA 300.0, SM 4500-NO3F
Mark Gesmundo	EPA 245.1



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA  
11110 Artesia Blvd., Ste B, 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"

August 05, 2019

Doug Scott  
CH2M HILL  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

TEL: (970) 731-0636

FAX: (510) 622-9129

Workorder No.: N036568

RE: PG&E Topock, 680375CH.02-IM.OP.00

Attention: Doug Scott

Enclosed are the results for sample(s) received on July 17, 2019 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.

The attached report is the final hard copy pertaining to the subcontracted tests for the above project.

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 Libucos

Puri Romualdo  
Laboratory Director

This cover letter is an integral part of this analytical report.



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**"Serving Clients with Passion and Professionalism"**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 680375CH.02-IM.OP.00  
**Lab Order:** N036568

**CASE NARRATIVE**

This is an addendum for N036395.



## ASSET Laboratories

Date: 05-Aug-19

CLIENT: CH2M HILL  
Project: PG&E Topock, 680375CH.02-IM.OP.00  
Lab Order: N036568  
Contract No:

### Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N036568-001A	Phase Separator-590-Sludge	Solid	7/25/2019 10:30:00 AM	7/17/2019	8/5/2019









**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

CALIFORNIA | P:562.219.7435 F:562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

<b>Signatures</b> Approved by  7-3-19 7:00 Sampled by  7-3-19 10:30 Relinquished by  7-3-19 14:30 Received by  7-3-19 14:30 Relinquished by  7-3-19 17:21 Received by  7-3-19 17:21		<b>Date/Time</b> 7-3-19 7:00 7-3-19 10:30 7-3-19 14:30 7-3-19 14:30 7-3-19 17:21 7-3-19 17:21		<b>Shipping Details</b> Method of Shipment: FedEx On Ice: <input checked="" type="checkbox"/> yes / no <b>#2 4.8</b> Airbill No: Lab Name: ASSET Laboratories Lab Phone: (702) 307-2659		<b>ATTN:</b>  Sample Custody and Marlon Cartin		<b>Special Instructions:</b>  <b>Report Copy to</b> Doug Scott (970) 731-0636	
---	--	---	--	--	--	--	--	---	--

## ASSET Laboratories

Please review the checklist below. Any NO and/or NA 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.



### Change Order Checklist

Client Name: **CH2HI01**

Date / Time Created: **7/17/2019 6:40:17 PM**

Work Order Number: **N036568**

Created by: **YR**

Checklist completed by:		<u>7/17/2019</u>	Reviewed by:		<u>LG 072819</u>
	Signature	Date		Initials	Date

- |  |   |                             |
|--|---|-----------------------------|
| 1. All samples within holding time?        | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| 2. Refrigerator temperature in compliance? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| 3. Change Order documents present?         | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |

-----  
Comments:

**Subject:** RE: FW: [EXTERNAL] PG&E Topock, 680375CH.04.IM.OP.00 (Asset Labs No.N036397)  
**From:** "Shawn Duffy" <shawn.duffy@groundwaterpartners.com>  
**Date:** 7/17/2019, 7:10 PM  
**To:** "'Yoandra Rodriguez'" <yoandra@assetlaboratories.com>, "'Scott, Doug/DEN'" <Doug.Scott@jacobs.com>, "'Marlon Cartin'" <marlon@assetlaboratories.com>  
**CC:** "'Nancy Sibucão'" <nancy@assetlaboratories.com>, "'Sample Control LV'" <samplecontrol.lv@assetlaboratories.com>

Hi Yoandra,

That's okay, Doug was making the call from his general knowledge of the PG&E work. I would say to just leave it as is, as long as we will get the results in the next 2-3 weeks.

**Shawn**

**From:** Yoandra Rodriguez <yoandra@assetlaboratories.com>  
**Sent:** Wednesday, July 17, 2019 7:13 PM  
**To:** Shawn Duffy <shawn.duffy@groundwaterpartners.com>; 'Scott, Doug/DEN' <Doug.Scott@jacobs.com>; 'Marlon Cartin' <marlon@assetlaboratories.com>  
**Cc:** 'Nancy Sibucão' <nancy@assetlaboratories.com>; 'Sample Control LV' <samplecontrol.lv@assetlaboratories.com>  
**Subject:** Re: FW: [EXTERNAL] PG&E Topock, 680375CH.04.IM.OP.00 (Asset Labs No.N036397)

Hi Shawn,

I revised the Sub COC to standard TAT and informed the sub lab.

I received a previous email from Doug Scott and I understood it should be ASAP.

My apologies if it was a misunderstanding.

Thanks!

On 7/17/2019 6:56 PM, Shawn Duffy wrote:

Hi Yoandra,

Just a standard turn around for the Bioassay Lab will be fine. This is part of our annual requirement and will be included in our next report.

**Shawn**

**From:** Yoandra Rodriguez <[yoandra@assetlaboratories.com](mailto:yoandra@assetlaboratories.com)>  
**Sent:** Wednesday, July 17, 2019 12:47 PM  
**To:** Shawn Duffy <[shawn.duffy@groundwaterpartners.com](mailto:shawn.duffy@groundwaterpartners.com)>; 'Scott, Doug/DEN' <[Doug.Scott@jacobs.com](mailto:Doug.Scott@jacobs.com)>; 'Marlon Cartin' <[marlon@assetlaboratories.com](mailto:marlon@assetlaboratories.com)>  
**Cc:** 'Nancy Sibucan' <[nancy@assetlaboratories.com](mailto:nancy@assetlaboratories.com)>; 'Sample Control LV' <[samplecontrol.lv@assetlaboratories.com](mailto:samplecontrol.lv@assetlaboratories.com)>  
**Subject:** Re: FW: [EXTERNAL] PG&E Topock, 680375CH.04.IM.OP.00 (Asset Labs No.N036397)

Hi Shawn,

Noted. We will analyze Bioassay on sample WDR 590 Sludge (Original N036395).

Remote please login it in as CO, different WO # per Nancy instructions.

Please Shawn kindly confirm which TAT you need.

Thanks,

On 7/16/2019 9:05 PM, Shawn Duffy wrote:

Hi everyone,

The Bioassay should be analyzed on the WDR 590 Sludge sample collected on 7/3/2019. It was originally on the N036395 COC and mistakenly crossed off. This should be our annual sample analyzed for 96 hour "fish" bioassay.

**Shawn**

**From:** Scott, Doug/DEN <[Doug.Scott@jacobs.com](mailto:Doug.Scott@jacobs.com)>  
**Sent:** Tuesday, July 16, 2019 1:53 PM



**To:** Marlon Cartin <[marlon@assetlaboratories.com](mailto:marlon@assetlaboratories.com)>  
**Cc:** 'Nancy Sibucan' <[nancy@assetlaboratories.com](mailto:nancy@assetlaboratories.com)>; 'Yoandra Rodriguez' <[yoandra@assetlaboratories.com](mailto:yoandra@assetlaboratories.com)>; Shawn Duffy <[shawn.duffy@groundwaterpartners.com](mailto:shawn.duffy@groundwaterpartners.com)>  
**Subject:** RE: FW: [EXTERNAL] PG&E Topock, 680375CH.04.IM.OP.00 (Asset Labs No.N036397)

Marlon, a good question but from what I can see on the COCs the sample for bio-assay is on N036395. I will verify internally and hopefully Shawn will chime in tonight.

thanks

**Doug Scott**

Project Chemist

**Jacobs**

**D** 1 970 731 0636

**M** 1 720 445 2278

[Doug.scott@Jacobs.com](mailto:Doug.scott@Jacobs.com)

59 Lilac Ct.

Pagosa Springs, Co 81147

[www.jacobs.com](http://www.jacobs.com)

**From:** Marlon Cartin <[marlon@assetlaboratories.com](mailto:marlon@assetlaboratories.com)>  
**Sent:** Tuesday, July 16, 2019 2:52 PM  
**To:** Scott, Doug/DEN <[Doug.Scott@jacobs.com](mailto:Doug.Scott@jacobs.com)>  
**Cc:** 'Nancy Sibucan' <[nancy@assetlaboratories.com](mailto:nancy@assetlaboratories.com)>; 'Yoandra Rodriguez' <[yoandra@assetlaboratories.com](mailto:yoandra@assetlaboratories.com)>  
**Subject:** FW: FW: [EXTERNAL] PG&E Topock, 680375CH.04.IM.OP.00 (Asset Labs No.N036397)

Hi Doug,

Just want to confirm that we only need to send fish bioassay for N0363297.

Thanks,

**Marlon Cartin**

Sr. Project Manager

California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 | P: 562.219.7435 |  
F: 562.219.7436

Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 Ext. 410 |  
F: 702.307.2691 | M: 702.439.0421  
[www.assetlaboratories.com](http://www.assetlaboratories.com)

**From:** Yoandra Rodriguez <[yoandra@assetlaboratories.com](mailto:yoandra@assetlaboratories.com)>

**Sent:** Tuesday, July 16, 2019 1:06 PM

**To:** Marlon Cartin <[marlon@assetlaboratories.com](mailto:marlon@assetlaboratories.com)>; 'Sample Control'  
<[samplecontrol.lv@assetlaboratories.com](mailto:samplecontrol.lv@assetlaboratories.com)>

**Cc:** 'Nancy Sibucan' <[nancy@assetlaboratories.com](mailto:nancy@assetlaboratories.com)>

**Subject:** Re: FW: [EXTERNAL] PG&E Topock, 680375CH.04.IM.OP.00 (Asset Labs  
No.N036397)

Hi Marlon,

We received three samples that day: Phase separator-590-Sludge (N036395),  
Phase Separator-033 (N036396) and Phase Separator-032 (N036397).

I would like to confirm if we only need to run Bioassay on Phase  
Separator-032 (N036397).

Thanks,

On 7/16/2019 11:29 AM, Marlon Cartin wrote:

Yoandra – Please send out the Bioassay today to ABC Labs.

Thanks,

**Marlon Cartin**

Sr. Project Manager

California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 | **P:**  
562.219.7435 | **F:** 562.219.7436

Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | **P:**  
702.307.2659 Ext. 410 | **F:** 702.307.2691 | **M:** 702.439.0421  
[www.assetlaboratories.com](http://www.assetlaboratories.com)

**From:** Scott, Doug/DEN <[Doug.Scott@jacobs.com](mailto:Doug.Scott@jacobs.com)>  
**Sent:** Tuesday, July 16, 2019 11:15 AM  
**To:** Nancy Sibucan <[nancy@assetlaboratories.com](mailto:nancy@assetlaboratories.com)>  
**Cc:** 'Marlon Cartin' <[marlon@assetlaboratories.com](mailto:marlon@assetlaboratories.com)>; Contreras,  
Erlene/RDD <[Erlene.Contreras@jacobs.com](mailto:Erlene.Contreras@jacobs.com)>; Shawn Duffy  
<[Shawn.Duffy@groundwaterpartners.com](mailto:Shawn.Duffy@groundwaterpartners.com)>  
**Subject:** RE: [EXTERNAL] PG&E Topock, 680375CH.04.IM.OP.00  
(Asset Labs No.N036397)

Hi Nancy,

The Bio-assay work was canceled when it should not have been.  
Can you please get that work started with what you have?

Thanks  
Doug

**Doug Scott**

Project Chemist

**Jacobs**

D 1 970 731 0636

M 1 720 445 2278

[Doug.scott@Jacobs.com](mailto:Doug.scott@Jacobs.com)

59 Lilac Ct.

Pagosa Springs, Co 81147

[www.jacobs.com](http://www.jacobs.com)

**From:** Nancy Sibucan <[nancy@assetlaboratories.com](mailto:nancy@assetlaboratories.com)>

**Sent:** Monday, July 15, 2019 1:51 PM

**To:** Scott, Doug/DEN <[Doug.Scott@jacobs.com](mailto:Doug.Scott@jacobs.com)>

**Cc:** 'Marlon Cartin' <[marlon@assetlaboratories.com](mailto:marlon@assetlaboratories.com)>; Contreras, Erlene/RDD <[Erlene.Contreras@jacobs.com](mailto:Erlene.Contreras@jacobs.com)>; Shawn Duffy <[Shawn.Duffy@groundwaterpartners.com](mailto:Shawn.Duffy@groundwaterpartners.com)>

**Subject:** Re: [EXTERNAL] PG&E Topock, 680375CH.04.IM.OP.00 (Asset Labs No.N036397)

Hi Doug,

For both N036396 & N036397, we still need to digest for TCLP & STLC. And 6010\_Soil is not yet analyzed but I already informed the analyst. I am not seeing Bioassay in our LIMS as well as in the COC. If everything goes well, we should be able to release some 6010.

Please advise if you want Bioassay for these SDGs so we can sub it out.

Thanks,  
Nancy

On 7/15/2019 12:29 PM, Scott, Doug/DEN wrote:

Hi Nancy, could you please update status on the remaining data for me. We are looking for the metals, the TCLP data and the bio-assay work.

Thanks

Doug

**Doug Scott**

Project Chemist

**Jacobs**

**D** 1 970 731 0636

**M** 1 720 445 2278

[Doug.scott@Jacobs.com](mailto:Doug.scott@Jacobs.com)

59 Lilac Ct.

Pagosa Springs, Co 81147

[www.jacobs.com](http://www.jacobs.com)

**From:** Reports LV <[reports.lv@assetlaboratories.com](mailto:reports.lv@assetlaboratories.com)>

**Sent:** Thursday, July 11, 2019 5:48 PM

**To:** Scott, Doug/DEN <[Doug.Scott@jacobs.com](mailto:Doug.Scott@jacobs.com)>

**Cc:** SWR/RDD Electronic Data <[edata@jacobs.com](mailto:edata@jacobs.com)>;

'Marlon Cartin' <[marlon@assetlaboratories.com](mailto:marlon@assetlaboratories.com)>;

Contreras, Erlene/RDD

<[Erlene.Contreras@jacobs.com](mailto:Erlene.Contreras@jacobs.com)>; Shawn Duffy

<[Shawn.Duffy@groundwaterpartners.com](mailto:Shawn.Duffy@groundwaterpartners.com)>

**Subject:** [EXTERNAL] PG&E Topock,  
680375CH.04.IM.OP.00 (Asset Labs No.N036397)

Enclosed is the partial preliminary report for the above  
project pending 6010metals.

**Thanks,**

**Nancy Sibucan**

Project Manager

Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P:  
702.307.2659 Ext. 412 | F: 702.307.2691  
California: 11110 Artesia Blvd., Ste. A, Cerritos, CA  
90703 | P: 562.219.7435 | F: 562.219.7436

[www.assetlaboratories.com](http://www.assetlaboratories.com)



This message is intended for the use of the individual or entity to which it is addressed. This may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and delete the original message. Thank you.

Virus-free. [www.avast.com](http://www.avast.com)

---

NOTICE - This communication may contain confidential and privileged information that is for the sole use of the intended recipient. Any viewing, copying or distribution of, or reliance on this message by unintended recipients is strictly prohibited. If you have received this message in error, please notify us immediately by replying to the message and deleting it from your computer.

---

NOTICE - This communication may contain confidential and privileged information that is for the sole use of the intended recipient. Any viewing, copying or distribution of, or reliance on this message by unintended recipients is strictly prohibited. If you have received this message in error, please notify us immediately by replying to the message and deleting it from your computer.

---

NOTICE - This communication may contain confidential and privileged information that is for the sole use of the intended recipient. Any viewing, copying or distribution of, or reliance on this message by unintended recipients is strictly prohibited. If you have received this message in error, please notify us immediately by replying to the message and deleting it from your computer.



## ASSET Laboratories

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

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

QC Level: Level IV

**Subcontractor:**

Aquatic Bioassay & Consulting  
29 N Olive  
Ventura, CA 93001

TEL: (805) 643-5621  
FAX:  
Acct #:

Field Sampler: Signed

17-Jul-19

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests			
				Bioassay			
N036568-001A / Phase Separator-590-Sludge	Solid	7/3/2019 10:30:00 AM	4OZG	1			

Please cc Report to Lucille Golosinda at [lucille.golosinda@assetlaboratories.com](mailto:lucille.golosinda@assetlaboratories.com)

General Comments: Please email sample receipt acknowledgement to the PM. Plesse cc [andrea.gallardo@assetlaboratories.com](mailto:andrea.gallardo@assetlaboratories.com)

Please use PO#:N36568A Please email Invoices and Account Receivable Statements to [elvira@assetlaboratories.com](mailto:elvira@assetlaboratories.com). For questions, call Marlon at (702)-307-2659. Please e-mail results to [reports.lv@assetlaboratories.com](mailto:reports.lv@assetlaboratories.com) by: ASAP.

Please analyze for Fish Bioassay 96 hr Acute. EDD Requirement Labspec7 edata.

Standard TAT YRJ

7/17/2019

GSO #: 545525328

Date/Time		Date/Time	
Relinquished by: YRJ	7/17/2019 17:00	Received by:	
Relinquished by:		Received by:	





July 31, 2019

Mr. Marlon Cartin  
Asset Laboratories  
3151 W Post Rd.  
Las Vegas, NV 89118

Dear Mr. Cartin:

We are pleased to present the enclosed acute bioassay report. The test was conducted under the guidelines prescribed in "Static Acute Bioassay Procedures for Hazardous Waste Samples" California Department of Fish and Game, 1988. The results were as follows:

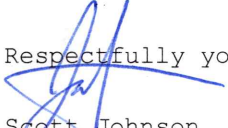
CLIENT:	Asset Laboratories
SAMPLE I.D.:	N036568-001A
DATE RECEIVED:	07/18/19
ABC LAB. NO.:	AST0719.148

**DOHS (TITLE 22) HAZARDOUS WASTE BIOASSAY USING FATHEAD MINNOWS**

96 HOUR LC50 = >750 mg/l

STATUS = Pass

Respectfully yours,

  
Scott Johnson  
Laboratory Director

**AQUATIC BIOASSAY AND CONSULTING LABORATORIES, INC.**  
**29 North Olive Street**  
**Ventura, CA 93001**  
**(805) 643-5621**

**DOHS Bioassay for Hazardous Waste (Title 22)**

**SAMPLE INFORMATION**

CLIENT:	Asset Laboratories	Date:	07/18/19
SAMPLE I.D.:	N036568-001A	LAB #:	AST0719.148

**WATER QUALITY**

DILUTION WATER: Reconst. Fresh				AERATION: Single Bubble Air			
CONTROL HARDNESS				CONTROL ALKALINITY			
Beg:	43 mg/l	End:	45 mg/l	Beg:	32 mg/l	End:	35 mg/l
SAMPLE HARDNESS				SAMPLE ALKALINITY			
Beg:	45 mg/l	End:	110 mg/l	Beg:	33 mg/l	End:	88 mg/l

**ORGANISM INFORMATION**

SPECIES:	Pimephales promelas	DATE REC'D:	07/12/19
COMMON NAME:	Fathead Minnow	AVERAGE LNTH:	32 mm
SOURCE:	Thomas Fish Co.	AVERAGE WT:	0.48 gm
CARRIER:	California Overnight	NO. FISH / TANK:	10

**TEST DATA**

DATE:		INITIAL				24 HOURS				48 HOURS				72 HOURS				96 HOURS			
TIME:		07/23/19 1450				07/24/19 1130				07/25/19 1100				07/26/19 1515				07/27/19 1359			
CONC.		Dis. Oxy.	Temp. dg.C	pH	#Fish	Dis. Oxy.	Temp. dg.C	pH	#Fish	Dis. Oxy.	Temp. dg.C	pH	#Fish	Dis. Oxy.	Temp. dg.C	pH	#Fish	Dis. Oxy.	Temp. dg.C	pH	#Fish
0 (Con.)		9.3	19.5	7.9	10	8.8	18.1	7.5	10	8.2	18.2	7.0	10	8.1	18.2	7.1	10	7.7	18.2	6.9	10
400 mg/l		9.4	19.5	7.3	10	8.8	18.2	7.2	10	7.6	18.3	6.6	10	7.0	18.3	6.8	10	8.3	18.2	6.9	10
400 mg/l		9.3	19.5	7.3	10	8.7	18.2	7.2	10	7.6	18.2	6.6	10	7.0	18.2	6.9	10	8.3	18.2	7.0	10
750 mg/l		9.3	19.5	7.5	10	8.9	18.1	7.3	10	7.8	18.1	6.7	10	7.4	18.1	7.0	10	8.0	18.1	7.0	10
750 mg/l		9.3	19.5	7.5	10	7.0	18.1	7.3	10	8.3	18.1	6.8	10	8.1	18.1	7.1	10	8.1	18.1	7.1	10

**FINAL DATA**

TOTAL	FISH SURVIVAL
0 (Con.)	10
400 mg/l	10
400 mg/l	10
750 mg/l	10
750 mg/l	10

**FINAL RESULTS**

96 HOUR LC50 =	>750 mg/l
STATUS =	Pass
CALCULATION METHOD =	Binomial Test

Joe Freas, Senior Toxicologist

Date 7/31/19

**ASSET Laboratories**

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

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

**QC Level: Level IV****Subcontractor:**

Aquatic Bioassay &amp; Consulting

29 N Olive

Ventura, CA 93001

TEL: (805) 643-5621

FAX:

Acct #:

Field Sampler: Signed

**17-Jul-19**

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				Bioassay		
N036568-001A / Phase Separator-590-Sludge	Solid	7/3/2019 10:30:00 AM	4OZG	1		

Please cc Report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

-148  
TEMP = 6.8 °C

**General Comments:**

Please email sample receipt acknowledgement to the PM. Plesse cc andrea.gallardo@assetlaboratories.com

Please use PO# N36568A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: ASAP.

Please analyze for Fish Bioassay 96 hr Acute. EDD Requirement Labspec7 edata.

GSO #: 545525328

	<b>Date/Time</b>		<b>Date/Time</b>
Relinquished by: <u>YRJ</u>	7/17/2019 17:00	Received by: <u>emeto</u>	7/18/19/ WJD
Relinquished by: _____	_____	Received by: _____	_____

**ASSET Laboratories**

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

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

**QC Level: Level IV****Subcontractor:**

Aquatic Bioassay &amp; Consulting

29 N Olive

Ventura, CA 93001

TEL: (805) 643-5621

FAX:

Acct #:

Field Sampler: Signed

**17-Jul-19**

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				Bioassay		
N036568-001A / Phase Separator-590-Sludge	Solid	7/3/2019 10:30:00 AM	4OZG	1		

Please cc Report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

**General Comments:**

Please email sample receipt acknowledgement to the PM. Plesse cc andrea.gallardo@assetlaboratories.com

Please use PO#:N36568A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: ASAP.

Standard TAT

Please analyze for Fish Bioassay 96 hr Acute. EDD Requirement Labspec7 edata.

YRT 7/17/2019

GSO #: 545525328

	Date/Time		Date/Time
Relinquished by: YRT	7/17/2019 17:00	Received by:	
Relinquished by:		Received by:	

**Work Order Number: 1926269**

**Laboratory Documentation Requirements  
For Data Validation of  
Wet Chemistry Analysis**

**Prepared By  
BC Laboratories**

**For ASSET Laboratories- Las Vegas**

**N036849**

All pages have been paginated and results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



## Case Narrative

### Sample Receipt

Work Order: 1926269

COC Number:

Default Cooler was received at 0 °C

Samples were checked for preservation. Where applicable, sample preservation was adjusted in the laboratory.

### Requested Analysis

<u>Method</u>	<u>Instrument</u>
SM-4500-NH3G	SC-1

### Sample Qualifier Summary

There were no qualifiers for the samples.

### Holding Times

All holding time requirements were met.

### Method Blanks

There were no detections in the Method Blank(s).

### Calibration

Initial calibration criteria for respective analysis were met. Frequency criteria for initial and continuing calibrations were met. Accuracy criteria for initial and continuing calibrations were met.

### Matrix Spikes

Source Samples Used For QC

<u>Batch</u>	<u>Method</u>	<u>Source Lab Number</u>	<u>Client Sample Name</u>
B053370	SM-4500-NH3G	1925716-03	<Not Client Sample>

Precision and accuracy requirements were within QC limits.

### LCS

The LCS recoveries were within QC limits.





**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

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

Subcontractor:  
BC Labs  
4100 Atlas Court  
Bakersfield, CA 93308

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

QC Level: Level IV

Field Sampler: SIGNED

19-26269

08-Aug-19

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests
N036849-002A / SC-700B-WDR-591	Water	8/8/2019 10:30:00 AM	3202P	SM4500-NH3D 1

Please cc report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

CHK BY	DISTRIBUTION
	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	SUB OUT <input type="checkbox"/>

General Comments:

Please email sample receipt acknowledgement to the PM. Please cc andrea.gallardo@assetlaboratories.

Please use PO# N36849A. Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marion at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. EDD Requirement Labspec7 edata.

Relinquished by:	8/8/2019 17:00	Date/Time
Relinquished by:	8/9/19 08:00	Date/Time



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1926269 Page 2 of 2

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page <u>2</u> Of <u>2</u>							
Submission #: <u>19-26269</u>											
<b>SHIPPING INFORMATION</b> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input type="checkbox"/> Other <input checked="" type="checkbox"/> (Specify) <u>1580</u>			<b>SHIPPING CONTAINER</b> Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>FREE LIQUID</b> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> <u>W</u> / <u>S</u>						
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____ Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
<b>COC Received</b> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <u>97</u> Container: <u>1580</u> Thermometer ID: <u>274</u> Temperature: (A) <u>0.0</u> °C / (C) <u>0.0</u> °C		Date/Time: <u>8-9-19</u> Analyst Init: <u>AD</u> <u>08:00</u>							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>4</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
<input checked="" type="checkbox"/> NITROGEN FORMS <u>QT 124 A</u>											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PIA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/608/808											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz JAR											
SOIL SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											

Comments:

Sample Numbering Completed By: JML

A = Actual / C = Corrected

Date/Time: 8/9/19 9:19

Rev 21 05/23/2016

[S:\WPDoc\WordPerfect\LAB\_DOCS\FORMS\ISAMRECrev 20]





**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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

Reported: 8/28/2019 8:04:21AM  
Project: Level IV  
Project Number: N036849  
Project Manager: Marlon B. Cartin

**ANALYSES DATA PACKAGE COVER PAGE**  
**SM-4500-NH3G**

Laboratory: BC Laboratories

SDG: 1926269

Client: ASSET Laboratories- Las Vegas \$ADNV

Project: Level IV

**Client Sample Id:**

N036849-002A / SC-700B-WDR-591

**Lab Sample Id:**

1926269-01

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Signature:

Name:

Stuart Buttram

Date:

08-28-2019

Title:

Technical Director



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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

Reported: 8/28/2019 8:04:21AM  
Project: Level IV  
Project Number: N036849  
Project Manager: Marlon B. Cartin

**INORGANIC ANALYSIS DATA SHEET**  
**SM-4500-NH3G**

**036849-002A / SC-700B-WDR-59**

Laboratory: BC Laboratories

SDG: 1926269

Client: ASSET Laboratories- Las Vegas \$ADNV

Project: Level IV

Matrix: Water

Laboratory ID: 1926269-01

File ID: 20190815001-NH3-055

Sampled: 08/06/19 10:30

Prepared: 08/12/19 14:45

Analyzed: 08/15/19 09:55

Solids: 0.00

Preparation: No Prep

Initial/Final: 6 ml / 6 ml

Batch: B053370

Sequence: 1915862

Calibration: UNASSIGNED

Instrument: SC-1

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
7664-41-7	Ammonia as N (Distilled)	0.20	1	U	SM-4500-NH3G



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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

Reported: 8/28/2019 8:04:21AM  
Project: Level IV  
Project Number: N036849  
Project Manager: Marlon B. Cartin

**METHOD BLANK DATA SHEET**  
**SM-4500-NH3G**

Laboratory:	<u>BC Laboratories</u>	SDG:	<u>1926269</u>		
Client:	<u>ASSET Laboratories- Las Vegas \$ADNV</u>	Project:	<u>Level IV</u>		
Matrix:	<u>Water</u>	Laboratory ID:	<u>B053370-BLK1</u>	File ID:	<u>20190815001-NH3-038</u>
Prepared:	<u>08/12/19 14:45</u>	Preparation:	<u>No Prep</u>	Initial/Final:	<u>6 ml / 6 ml</u>
Analyzed:	<u>08/15/19 09:28</u>	Instrument:	<u>SC-1</u>		
Batch:	<u>B053370</u>	Sequence:	<u>1915862</u>	Calibration:	<u>UNASSIGNED</u>

CAS NO.	COMPOUND	CONC. (mg/L)	Q
7664-41-7	Ammonia as N (Distilled)	0.20	U



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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

Reported: 8/28/2019 8:04:21AM  
Project: Level IV  
Project Number: N036849  
Project Manager: Marlon B. Cartin

**DUPLICATES**  
**SM-4500-NH3G**

**Duplicate**

Laboratory: BC Laboratories

SDG: 1926269

Client: ASSET Laboratories- Las Vegas \$ADNV

Project: Level IV

Matrix: Water

Laboratory ID: B053370-DUP1

Batch: B053370

Lab Source ID: 1925716-03

Preparation: No Prep

Initial/Final: 6 ml / 6 ml

Source Sample Name: Duplicate

% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	C	DUPLICATE CONCENTRATION (mg/L)	C	RPD %	Q	METHOD
Ammonia as N (Distilled)	20	5.3865		5.2550		2.47		SM-4500-NH3G

\* Values outside of QC limits



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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

Reported: 8/28/2019 8:04:21AM  
Project: Level IV  
Project Number: N036849  
Project Manager: Marlon B. Cartin

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY**  
**SM-4500-NH3G**

**Matrix Spike**

Laboratory: BC Laboratories SDG: 1926269  
Client: ASSET Laboratories- Las Vegas \$ADNV Project: Level IV  
Matrix: Water  
Batch: B053370 Laboratory ID: B053370-MS1  
Preparation: No Prep Initial/Final: 5.4 ml / 6 ml  
Source Sample Number: 1925716-03

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC. #	QC LIMITS REC.
Ammonia as N (Distilled)	2.2222	5.3865	7.4350	92.2	80 - 120

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD #	QC LIMITS	
					RPD	REC.
Ammonia as N (Distilled)	2.2222	7.4144	91.3	0.277	20	80 - 120

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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

Reported: 8/28/2019 8:04:21AM  
Project: Level IV  
Project Number: N036849  
Project Manager: Marlon B. Cartin

**LCS RECOVERY**  
**SM-4500-NH3G**

Laboratory: BC Laboratories SDG: 1926269  
Client: ASSET Laboratories- Las Vegas \$ADNV Project: Level IV  
Matrix: Water  
Batch: B053370 Laboratory ID: B053370-BS1  
Preparation: No Prep Initial/Final: 6 ml / 6 ml

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC. #	QC LIMITS REC.
Ammonia as N (Distilled)	2.0000	1.9848	99.2	85 - 115

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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

Reported: 8/28/2019 8:04:21AM  
Project: Level IV  
Project Number: N036849  
Project Manager: Marlon B. Cartin

## HOLDING TIME SUMMARY

### SM-4500-NH3G

Laboratory: BC Laboratories

SDG: 1926269

Client: ASSET Laboratories- Las Vegas \$ADNV

Project: Level IV

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
N036849-002A / SC-700B-WDR-59	08/06/19 10:30	08/09/19 08:00	08/12/19 14:45	9.00	28.00	08/15/19 09:55	9.00	28.00	

\* Holding time not met

Note: If Prep or Analysis are performed within the hour (if holding time is based on hours) or within the day (if holding time is based on days), then the sample is not flagged as outside holding times. Calculated number of days are based on date received or date prepared depending on the test.

August 28, 2019

Doug Scott  
CH2M HILL  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

TEL: (970) 731-0636  
FAX: (510) 622-9129

Workorder No.: N036849

RE: PG&E Topock, 680375CH.04.IM.OP.00

Attention: Doug Scott

Enclosed are the results for sample(s) received on August 06, 2019 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,



Puri Romualdo  
Laboratory Director

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



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046



---

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00  
**Lab Order:** N036849

---

**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 BC Labs- Bakersfield,CA.

**Analytical Comments for EPA 200.8:**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N036872-001D-MS and N036872-001D-MSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.



**ASSET Laboratories**

Date: 28-Aug-19

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00  
**Lab Order:** N036849  
**Contract No:** IM3PLANT-AR

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N036849-001A	SC-100B-WDR-591	Water	8/6/2019 10:35:00 AM	8/6/2019	8/28/2019
N036849-001B	SC-100B-WDR-591	Water	8/6/2019 10:35:00 AM	8/6/2019	8/28/2019
N036849-001C	SC-100B-WDR-591	Water	8/6/2019 10:35:00 AM	8/6/2019	8/28/2019
N036849-001D	SC-100B-WDR-591	Water	8/6/2019 10:35:00 AM	8/6/2019	8/28/2019
N036849-002A	SC-700B-WDR-591	Water	8/6/2019 10:30:00 AM	8/6/2019	8/28/2019
N036849-002B	SC-700B-WDR-591	Water	8/6/2019 10:30:00 AM	8/6/2019	8/28/2019
N036849-002C	SC-700B-WDR-591	Water	8/6/2019 10:30:00 AM	8/6/2019	8/28/2019
N036849-002D	SC-700B-WDR-591	Water	8/6/2019 10:30:00 AM	8/6/2019	8/28/2019
N036849-002E	SC-700B-WDR-591	Water	8/6/2019 10:30:00 AM	8/6/2019	8/28/2019
N036849-002F	SC-700B-WDR-591	Water	8/6/2019 10:30:00 AM	8/6/2019	8/28/2019



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 28-Aug-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-591
<b>Lab Order:</b>	N036849	<b>Collection Date:</b>	8/6/2019 10:35:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036849-001		

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

**SPECIFIC CONDUCTANCE**
**EPA 120.1**

RunID: <b>NV00922-WC_190807C</b>	QC Batch: <b>R135643</b>	PrepDate:	Analyst: <b>LR</b>
Specific Conductance	6800	0.10	0.10
		umhos/cm	1
			8/7/2019 10:05 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

# ASSET Laboratories

# ANALYTICAL RESULTS

Print Date: 28-Aug-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-591
<b>Lab Order:</b>	N036849	<b>Collection Date:</b>	8/6/2019 10:30:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036849-002		

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

## SPECIFIC CONDUCTANCE

## EPA 120.1

RunID: <b>NV00922-WC_190807C</b>	QC Batch: <b>R135643</b>	PrepDate:	Analyst: <b>LR</b>
Specific Conductance	7000	0.10	0.10
		umhos/cm	1
			8/7/2019 10:05 AM

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



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036849  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 120.1\_WPGE**

Sample ID	<b>N036849-002BDUP</b>	SampType:	<b>DUP</b>	TestCode:	<b>120.1_WPGE</b>	Units:	<b>umhos/cm</b>	Prep Date:		RunNo:	<b>135643</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R135643</b>	TestNo:	<b>EPA 120.1</b>			Analysis Date:	<b>8/7/2019</b>	SeqNo:	<b>3473011</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Specific Conductance		7020.000		0.10						6990	0.428 2

**Qualifiers:**

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

**ASSET LABORATORIES**

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 28-Aug-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-591
<b>Lab Order:</b>	N036849	<b>Collection Date:</b>	8/6/2019 10:35:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036849-001		

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

**TOTAL FILTERABLE RESIDUE**
**SM2540C**

RunID: <b>NV00922-WC_190807E</b>	QC Batch: <b>74928</b>	PrepDate: <b>8/7/2019</b>	Analyst: <b>LR</b>
Total Dissolved Solids (Residue, Filterable)	4200	50	50
		mg/L	1
			8/7/2019 01:25 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 28-Aug-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-591
<b>Lab Order:</b>	N036849	<b>Collection Date:</b>	8/6/2019 10:30:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036849-002		

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

**TOTAL FILTERABLE RESIDUE**
**SM2540C**

RunID: <b>NV00922-WC_190807E</b>	QC Batch: <b>74928</b>	PrepDate: <b>8/7/2019</b>	Analyst: <b>LR</b>
Total Dissolved Solids (Residue, Filterable)	4100	50	50
		mg/L	1
			8/7/2019 01:25 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036849  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 160.1\_2540C\_W**

Sample ID	LCS-74928	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	8/7/2019	RunNo:	135664			
Client ID:	LCSW	Batch ID:	74928	TestNo:	SM2540C			Analysis Date:	8/7/2019	SeqNo:	3473803			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		956.000		10	1000	0		95.6	80	120				

Sample ID	MB-74928	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	8/7/2019	RunNo:	135664			
Client ID:	PBW	Batch ID:	74928	TestNo:	SM2540C			Analysis Date:	8/7/2019	SeqNo:	3473804			
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	N036849-002BDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	8/7/2019	RunNo:	135664			
Client ID:	ZZZZZZ	Batch ID:	74928	TestNo:	SM2540C			Analysis Date:	8/7/2019	SeqNo:	3473807			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		3900.000		50							4055	3.90	5	

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 28-Aug-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-591
<b>Lab Order:</b>	N036849	<b>Collection Date:</b>	8/6/2019 10:35:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036849-001		

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

**TOTAL METALS BY ICP**
**EPA 200.7**

RunID: <b>NV00922-ICP2_190812D</b>	QC Batch: <b>74966</b>	PrepDate: <b>8/12/2019</b>	Analyst: <b>CEI</b>
Iron	ND 18	20	µg/L 1 8/12/2019 05:06 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 28-Aug-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-591
<b>Lab Order:</b>	N036849	<b>Collection Date:</b>	8/6/2019 10:30:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036849-002		

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

**TOTAL METALS BY ICP**
**EPA 200.7**

RunID: <b>NV00922-ICP2_190812D</b>	QC Batch: <b>74966</b>	PrepDate: <b>8/12/2019</b>	Analyst: <b>CEI</b>			
Aluminum	ND	40	50	µg/L	1	8/12/2019 05:36 PM
Boron	970	74	100	µg/L	1	8/12/2019 05:36 PM
Iron	ND	18	20	µg/L	1	8/12/2019 05:36 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL  
 Work Order: N036849  
 Project: PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7\_WPGEPB

Sample ID	MB-74966	SampType:	MBLK	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	8/12/2019	RunNo:	135772		
Client ID:	PBW	Batch ID:	74966	TestNo:	EPA 200.7			Analysis Date:	8/12/2019	SeqNo:	3478311		
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-74966	SampType:	LCS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	8/12/2019	RunNo:	135772			
Client ID:	LCSW	Batch ID:	74966	TestNo:	EPA 200.7			Analysis Date:	8/12/2019	SeqNo:	3478312			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	9788.442	50	10000	0	97.9	85	115							
Boron	4574.589	100	5000	0	91.5	85	115							
Iron	103.964	20	100.0	0	104	85	115							

Sample ID	N036849-001C-MS	SampType:	MS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	8/12/2019	RunNo:	135772		
Client ID:	ZZZZZZ	Batch ID:	74966	TestNo:	EPA 200.7			Analysis Date:	8/12/2019	SeqNo:	3478316		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	9580.777	50	10000	0	95.8	75	125							
Boron	5452.091	100	5000	935.4	90.3	75	125							
Iron	88.177	20	100.0	0	88.2	75	125							

Sample ID	N036849-001C-MSD	SampType:	MSD	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	8/12/2019	RunNo:	135772			
Client ID:	ZZZZZZ	Batch ID:	74966	TestNo:	EPA 200.7			Analysis Date:	8/12/2019	SeqNo:	3478317			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	9901.816	50	10000	0	99.0	75	125	9581	3.30	20				
Boron	5589.060	100	5000	935.4	93.1	75	125	5452	2.48	20				
Iron	89.473	20	100.0	0	89.5	75	125	88.18	1.46	20				

## Qualifiers:

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



ASSET LABORATORIES

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 28-Aug-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-591
<b>Lab Order:</b>	N036849	<b>Collection Date:</b>	8/6/2019 10:35:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036849-001		

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

**TOTAL METALS BY ICPMS**
**EPA 200.8**

RunID: <b>NV00922-ICP7_190808A</b>	QC Batch: <b>74939</b>	PrepDate: <b>8/8/2019</b>	Analyst: <b>CEI</b>
Manganese	ND	0.26	0.50
		µg/L	1
			8/8/2019 03:37 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 28-Aug-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-591
<b>Lab Order:</b>	N036849	<b>Collection Date:</b>	8/6/2019 10:30:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036849-002		

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

**TOTAL METALS BY ICPMS**
**EPA 200.8**

RunID: NV00922-ICP7_190808A	QC Batch: 74939	PrepDate: 8/8/2019	Analyst: CEI			
Antimony	ND	0.16	0.50	µg/L	1	8/8/2019 03:57 PM
Arsenic	0.10	0.081	0.10	µg/L	1	8/8/2019 03:57 PM
Barium	15	0.15	1.0	µg/L	1	8/8/2019 03:57 PM
Copper	ND	0.55	1.0	µg/L	1	8/8/2019 03:57 PM
Lead	ND	0.13	1.0	µg/L	1	8/8/2019 03:57 PM
Manganese	ND	0.26	0.50	µg/L	1	8/8/2019 03:57 PM
Molybdenum	25	0.21	0.50	µg/L	1	8/8/2019 03:57 PM
Nickel	1.5	0.26	1.0	µg/L	1	8/8/2019 03:57 PM
Zinc	ND	2.3	10	µg/L	1	8/8/2019 03:57 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036849  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 200.8\_W**

Sample ID	MB-74939	SampType:	MBLK	TestCode:	200.8_W	Units:	µg/L	Prep Date:	8/8/2019	RunNo:	135703		
Client ID:	PBW	Batch ID:	74939	TestNo:	EPA 200.8			Analysis Date:	8/8/2019	SeqNo:	3477120		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

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

Sample ID	LCS-74939	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	8/8/2019	RunNo:	135703		
Client ID:	LCSW	Batch ID:	74939	TestNo:	EPA 200.8			Analysis Date:	8/8/2019	SeqNo:	3477121		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	10.203	0.50	10.00	0	102	85	115				
Arsenic	10.684	0.10	10.00	0	107	85	115				
Barium	10.522	1.0	10.00	0	105	85	115				
Chromium	10.172	0.50	10.00	0	102	85	115				
Copper	10.117	1.0	10.00	0	101	85	115				
Lead	9.701	1.0	10.00	0	97.0	85	115				
Manganese	105.251	0.50	100.0	0	105	85	115				
Molybdenum	10.271	0.50	10.00	0	103	85	115				
Nickel	10.878	1.0	10.00	0	109	85	115				
Zinc	10.739	10	10.00	0	107	85	115				

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036849  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.8\_W

Sample ID	<b>N036872-001D-MS</b>	SampType:	<b>MS</b>	TestCode:	<b>200.8_W</b>	Units:	<b>µg/L</b>	Prep Date:	<b>8/8/2019</b>	RunNo:	<b>135703</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>74939</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>8/8/2019</b>	SeqNo:	<b>3477125</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.187	0.50	10.00	0	102	75	125				
Arsenic	21.870	0.10	10.00	12.57	93.0	75	125				
Barium	81.867	1.0	10.00	74.75	71.1	75	125				S
Chromium	9.550	0.50	10.00	0	95.5	75	125				
Copper	7.284	1.0	10.00	0	72.8	75	125				S
Lead	8.338	1.0	10.00	0	83.4	75	125				
Manganese	97.401	0.50	100.0	0	97.4	75	125				
Molybdenum	21.957	0.50	10.00	10.79	112	75	125				
Nickel	9.299	1.0	10.00	0	93.0	75	125				
Zinc	9.377	10	10.00	0	93.8	75	125				

Sample ID	<b>N036872-001D-MSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>200.8_W</b>	Units:	<b>µg/L</b>	Prep Date:	<b>8/8/2019</b>	RunNo:	<b>135703</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>74939</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>8/8/2019</b>	SeqNo:	<b>3477126</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.188	0.50	10.00	0	102	75	125	10.19	0.0113	20	
Arsenic	21.902	0.10	10.00	12.57	93.3	75	125	21.87	0.146	20	
Barium	82.607	1.0	10.00	74.75	78.5	75	125	81.87	0.900	20	
Chromium	9.478	0.50	10.00	0	94.8	75	125	9.550	0.755	20	
Copper	7.225	1.0	10.00	0	72.3	75	125	7.284	0.807	20	S
Lead	8.361	1.0	10.00	0	83.6	75	125	8.338	0.273	20	
Manganese	98.112	0.50	100.0	0	98.1	75	125	97.40	0.727	20	
Molybdenum	21.942	0.50	10.00	10.79	111	75	125	21.96	0.0650	20	
Nickel	9.081	1.0	10.00	0	90.8	75	125	9.299	2.37	20	
Zinc	9.355	10	10.00	0	93.5	75	125	9.377	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 |                                      |   |  |



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036849  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.8\_W

Sample ID	<b>N036872-001D-PS</b>	SampType:	<b>PS</b>	TestCode:	<b>200.8_W</b>	Units:	<b>µg/L</b>	Prep Date:		RunNo:	<b>135703</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>74939</b>	TestNo:	<b>EPA 200.8</b>			Analysis Date:	<b>8/8/2019</b>	SeqNo:	<b>3477124</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.178	0.50	10.00	0	102	80	120				
Arsenic	21.770	0.10	10.00	12.57	92.0	80	120				
Barium	80.334	1.0	10.00	74.75	55.8	80	120				S
Chromium	9.542	0.50	10.00	0	95.4	80	120				
Copper	7.191	1.0	10.00	0	71.9	80	120				S
Lead	8.339	1.0	10.00	0	83.4	80	120				
Manganese	98.860	0.50	100.0	0	98.9	80	120				
Molybdenum	20.512	0.50	10.00	10.79	97.2	80	120				
Nickel	9.204	1.0	10.00	0	92.0	80	120				
Zinc	9.926	10	10.00	0	99.3	80	120				

## Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 28-Aug-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-591
<b>Lab Order:</b>	N036849	<b>Collection Date:</b>	8/6/2019 10:35:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036849-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>HEXAVALENT CHROMIUM BY IC</b>							
<b>EPA 218.6</b>							
RunID: <b>NV00922-IC7_190807B</b>	QC Batch: <b>R135813</b>			PrepDate:			Analyst: <b>HG</b>
Hexavalent Chromium	430	3.3	20		µg/L	100	8/7/2019 10:16 AM
<b>TOTAL METALS BY ICPMS</b>							
<b>EPA 200.8</b>							
RunID: <b>NV00922-ICP7_190808A</b>	QC Batch: <b>74939</b>			PrepDate:	<b>8/8/2019</b>		Analyst: <b>CEI</b>
Chromium	410	0.65	5.0		µg/L	5	8/8/2019 03:42 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 28-Aug-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-591
<b>Lab Order:</b>	N036849	<b>Collection Date:</b>	8/6/2019 10:30:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036849-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>HEXAVALENT CHROMIUM BY IC</b>							
<b>EPA 218.6</b>							
RunID: <b>NV00922-IC7_190807B</b>	QC Batch: <b>R135813</b>			PrepDate:			Analyst: <b>HG</b>
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	8/7/2019 10:27 AM
<b>TOTAL METALS BY ICPMS</b>							
<b>EPA 200.8</b>							
RunID: <b>NV00922-ICP7_190808A</b>	QC Batch: <b>74939</b>			PrepDate:	<b>8/8/2019</b>		Analyst: <b>CEI</b>
Chromium	ND	0.13	1.0		µg/L	1	8/8/2019 03:57 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036849  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 200.8\_W\_CRPGE**

Sample ID	MB-74939	SampType:	MBLK	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	8/8/2019	RunNo:	135703		
Client ID:	PBW	Batch ID:	74939	TestNo:	EPA 200.8			Analysis Date:	8/8/2019	SeqNo:	3475939		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		ND		1.0									

Sample ID	LCS-74939	SampType:	LCS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	8/8/2019	RunNo:	135703		
Client ID:	LCSW	Batch ID:	74939	TestNo:	EPA 200.8			Analysis Date:	8/8/2019	SeqNo:	3475940		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		10.172		1.0	10.00	0	102	85	115				

Sample ID	N036872-001D-MS	SampType:	MS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	8/8/2019	RunNo:	135703		
Client ID:	ZZZZZZ	Batch ID:	74939	TestNo:	EPA 200.8			Analysis Date:	8/8/2019	SeqNo:	3475944		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		9.550		1.0	10.00	0	95.5	75	125				

Sample ID	N036872-001D-MSD	SampType:	MSD	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	8/8/2019	RunNo:	135703		
Client ID:	ZZZZZZ	Batch ID:	74939	TestNo:	EPA 200.8			Analysis Date:	8/8/2019	SeqNo:	3475945		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		9.478		1.0	10.00	0	94.8	75	125	9.550	0.755	20	

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036849  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 218.6\_WU\_PGE

Sample ID <b>MB-R135813</b>	SampType: <b>MBLK</b>	TestCode: <b>218.6_WU_P</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>135813</b>
Client ID: <b>PBW</b>	Batch ID: <b>R135813</b>	TestNo: <b>EPA 218.6</b>	Analysis Date: <b>8/7/2019</b>	SeqNo: <b>3480504</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Hexavalent Chromium ND 0.20

Sample ID <b>LCS-R135813</b>	SampType: <b>LCS</b>	TestCode: <b>218.6_WU_P</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>135813</b>
Client ID: <b>LCSW</b>	Batch ID: <b>R135813</b>	TestNo: <b>EPA 218.6</b>	Analysis Date: <b>8/7/2019</b>	SeqNo: <b>3480505</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Hexavalent Chromium 5.056 0.20 5.000 0 101 90 110

Sample ID <b>N036849-001BMS</b>	SampType: <b>MS</b>	TestCode: <b>218.6_WU_P</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>135813</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R135813</b>	TestNo: <b>EPA 218.6</b>	Analysis Date: <b>8/7/2019</b>	SeqNo: <b>3480519</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Hexavalent Chromium 947.590 20 500.0 434.8 103 90 110

Sample ID <b>N036849-001BMSD</b>	SampType: <b>MSD</b>	TestCode: <b>218.6_WU_P</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>135813</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R135813</b>	TestNo: <b>EPA 218.6</b>	Analysis Date: <b>8/7/2019</b>	SeqNo: <b>3480520</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Hexavalent Chromium 949.290 20 500.0 434.8 103 90 110 947.6 0.179 20

Sample ID <b>N036849-002CMS</b>	SampType: <b>MS</b>	TestCode: <b>218.6_WU_P</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>135813</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>R135813</b>	TestNo: <b>EPA 218.6</b>	Analysis Date: <b>8/7/2019</b>	SeqNo: <b>3480521</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Hexavalent Chromium 1.102 0.20 1.000 0.07090 103 90 110

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL  
Work Order: N036849  
Project: PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6\_WU\_PGE

Sample ID	N036850-001ADUP	SampType:	DUP	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	135813		
Client ID:	ZZZZZZ	Batch ID:	R135813	TestNo:	EPA 218.6			Analysis Date:	8/7/2019	SeqNo:	3480522		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		2.997		0.20						2.968	0.949	20	

### Qualifiers:

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



**ASSET LABORATORIES**

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 28-Aug-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-591
<b>Lab Order:</b>	N036849	<b>Collection Date:</b>	8/6/2019 10:35:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036849-001		

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

**TURBIDITY**
**SM 2130B**

RunID: <b>NV00922-WC_190808A</b>	QC Batch: <b>R135661</b>	PrepDate:	Analyst: <b>LR</b>
Turbidity	0.13	0.10	0.10
			NTU
			1
			8/8/2019 08:40 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

[CALIFORNIA](#) | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

[NEVADA](#) | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 28-Aug-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-591
<b>Lab Order:</b>	N036849	<b>Collection Date:</b>	8/6/2019 10:30:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036849-002		

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

**TURBIDITY**
**SM 2130B**

RunID: <b>NV00922-WC_190808A</b>	QC Batch: <b>R135661</b>	PrepDate:	Analyst: <b>LR</b>
Turbidity	0.10	0.10	0.10
			NTU
			1
			8/8/2019 08:40 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

[CALIFORNIA](#) | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

[NEVADA](#) | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036849  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 2130\_W**

Sample ID	MB-R135661	SampType:	MBLK	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	135661		
Client ID:	PBW	Batch ID:	R135661	TestNo:	SM 2130B			Analysis Date:	8/8/2019	SeqNo:	3473784		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity		ND		0.10									

Sample ID	N036849-002BDUP	SampType:	DUP	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	135661		
Client ID:	ZZZZZZ	Batch ID:	R135661	TestNo:	SM 2130B			Analysis Date:	8/8/2019	SeqNo:	3473787		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity		0.09		0.10						0.1000	0	30	

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 28-Aug-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-591
<b>Lab Order:</b>	N036849	<b>Collection Date:</b>	8/6/2019 10:30:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036849-002		

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

**ANIONS BY ION CHROMATOGRAPHY**
**EPA 300.0**

RunID: <b>NV00922-IC8_190809A</b>	QC Batch: <b>R135729</b>	PrepDate:	Analyst: <b>RAB</b>
Fluoride	2.5 0.048	0.50	mg/L 5 8/9/2019 12:24 PM

**ANIONS BY ION CHROMATOGRAPHY**
**EPA 300.0**

RunID: <b>NV00922-IC8_190809A</b>	QC Batch: <b>R135729</b>	PrepDate:	Analyst: <b>RAB</b>
Sulfate	480 2.0	25	mg/L 50 8/9/2019 12:38 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036849  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 300\_W\_FPGE**

Sample ID	MB-R135729_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	135729		
Client ID:	PBW	Batch ID:	R135729	TestNo:	EPA 300.0			Analysis Date:	8/9/2019	SeqNo:	3476688		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		ND		0.10									

Sample ID	LCS-R135729_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	135729		
Client ID:	LCSW	Batch ID:	R135729	TestNo:	EPA 300.0			Analysis Date:	8/9/2019	SeqNo:	3476689		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		1.264		0.10	1.250	0	101	90	110				

Sample ID	N036849-002BDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	135729		
Client ID:	ZZZZZZ	Batch ID:	R135729	TestNo:	EPA 300.0			Analysis Date:	8/9/2019	SeqNo:	3476693		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		2.490		0.50						2.546	2.22	20	

Sample ID	N036849-002BMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	135729		
Client ID:	ZZZZZZ	Batch ID:	R135729	TestNo:	EPA 300.0			Analysis Date:	8/9/2019	SeqNo:	3476694		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		8.421		0.50	6.250	2.546	94.0	80	120				

Sample ID	N036849-002BMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	135729		
Client ID:	ZZZZZZ	Batch ID:	R135729	TestNo:	EPA 300.0			Analysis Date:	8/9/2019	SeqNo:	3476695		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		8.604		0.50	6.250	2.546	96.9	80	120	8.421	2.14	20	

**Qualifiers:**

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



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

**CALIFORNIA** | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036849  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_SO4PGE

Sample ID	<b>MB-R135729_SO4</b>	SampType:	<b>MBLK</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>135729</b>
Client ID:	<b>PBW</b>	Batch ID:	<b>R135729</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>8/9/2019</b>	SeqNo:	<b>3476706</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate ND 0.50

Sample ID	<b>LCS-R135729_SO4</b>	SampType:	<b>LCS</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>135729</b>
Client ID:	<b>LCSW</b>	Batch ID:	<b>R135729</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>8/9/2019</b>	SeqNo:	<b>3476707</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 3.913 0.50 4.000 0 97.8 90 110

Sample ID	<b>N036849-002BMS</b>	SampType:	<b>MS</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>135729</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R135729</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>8/9/2019</b>	SeqNo:	<b>3476714</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 688.210 25 200.0 476.2 106 80 120

Sample ID	<b>N036849-002BMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>135729</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R135729</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>8/9/2019</b>	SeqNo:	<b>3476715</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 685.390 25 200.0 476.2 105 80 120 688.2 0.411 20

Sample ID	<b>N036838-001EDUP</b>	SampType:	<b>DUP</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>135729</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R135729</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>8/9/2019</b>	SeqNo:	<b>3476718</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 86.700 5.0 0 0 20

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 28-Aug-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-591
<b>Lab Order:</b>	N036849	<b>Collection Date:</b>	8/6/2019 10:30:00 AM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N036849-002		

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

**NITRATE/NITRITE-N BY CADMIUM REDUCTION**
**SM4500-NO3F**

RunID: <b>NV00922-WC_190819F</b>	QC Batch: <b>R135981</b>	PrepDate:	Analyst: <b>RAB</b>
Nitrate/Nitrite as N	2.8 0.16	0.25	mg/L 5 8/19/2019

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N036849  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 4500N03F\_W**

Sample ID	MB-R135981	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	135981			
Client ID:	PBW	Batch ID:	R135981	TestNo:	SM4500-NO3			Analysis Date:	8/19/2019	SeqNo:	3486914			
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-R135981	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	135981			
Client ID:	LCSW	Batch ID:	R135981	TestNo:	SM4500-NO3			Analysis Date:	8/19/2019	SeqNo:	3486915			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		0.521		0.050	0.5000	0		104	85	115				

Sample ID	N036932-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	135981			
Client ID:	ZZZZZZ	Batch ID:	R135981	TestNo:	SM4500-NO3			Analysis Date:	8/19/2019	SeqNo:	3486918			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		7.685		0.50							7.511	2.29	20	

Sample ID	N036849-002DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	135981			
Client ID:	ZZZZZZ	Batch ID:	R135981	TestNo:	SM4500-NO3			Analysis Date:	8/19/2019	SeqNo:	3486921			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		5.334		0.25	2.500	2.844		99.6	75	125				

Sample ID	N036849-002DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	135981			
Client ID:	ZZZZZZ	Batch ID:	R135981	TestNo:	SM4500-NO3			Analysis Date:	8/19/2019	SeqNo:	3486923			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		5.311		0.25	2.500	2.844		98.7	75	125	5.334	0.442	20	

**Qualifiers:**

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


**ASSET LABORATORIES**  
ANALYTICAL SERVICES PROVIDER FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS
**CALIFORNIA** | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CH2MHILL

## CHAIN OF CUSTODY RECORD

Page 1 OF 1

Project Name PG&E Topock			Container:	1 Liter Poly	1 Liter Poly	1 Liter Poly	250 ml Poly	1 Liter Poly	1 Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly	Number of Containers	COMMENTS
Location PG&E Topock			Preservatives:	4°C Lab H2SO4	4°C	4°C	4°C	4°C Lab H2SO4	4°C	4°C	4°C	4°C		
Project Number 680375CH.04.IM.OP.00			Filtered:	NA	NA	NA	NA	NA	NA	NA	NA			
Project Manager Scott O'Donnell			Holding Time:	28	7	7	1	28	7	180	180	7		
Sample Manager Shawn Duffy				AMMONIA (SM4500NH3D)	Ascorbic (E300.0) FI, SO4	CONDUCTIVITY (E120.1)	E218 & Lab Filtered	Nitrate/Nitrite (SM4500NO3-E)	TDS (SM2540C)	Total Metals (E200.7 and E200.6)	Total Metals (E200.8) Cr, Mn, Fe	Turbidity (SM2130)		
Task Order														
Project IM3PLANT-ARAR-WDR-591														
Turnaround Time 10 Days														
Shipping Date:														
COC Number: 591														
	DATE	TIME	Matrix											
SC-100B-WDR-591	8-6-19	10:35	Water			X	X		X		X	X	N036849-01	3
SC-700B-WDR-591	8-6-19	10:50	Water	X	X	X	X	X	X	X		X	-02	4
TOTAL NUMBER OF CONTAINERS													7	

Approved by	Signatures	Date/Time	Shipping Details	ATTN:	Special Instructions:
Sampled by		8-6-19 08:00	Method of Shipment: FedEx	Sample Custody and Marlon Cartin	SC-700B Total metals List: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn
Relinquished by		8-6-19 10:35	On Ice: <input checked="" type="checkbox"/> yes / no 3.10°C ICE		
Received by	M. CARTIN	8/6/19 16:19	Airbill No: 1R#2		
Relinquished by	M. CARTIN	8/6/19 18:20	Lab Name: ASSET Laboratories		
Received by	DOANNA R. RINGGUY	8/6/19 18:20	Lab Phone: (702) 307-2659		
				Report Copy to	Doug Scott (970) 731-0636

## 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: 8/6/2019 Workorder: N036849  
 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
2. Custody seals intact, signed, dated on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
3. Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
4. Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
5. Sampler's name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
6. Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
7. Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
8. Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
9. Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
10. Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
11. All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
13. Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>
15. Did the bottle labels indicate correct preservatives used?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
16. Were there Non-Conformance issues at login?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Was Client notified?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

Comments: Samples for Cr 6+ were lab filtered and then preserved with Ammonium buffer.  
 Samples for Total Metals were lab preserved with HNO3 and Ammonia/NO3- with H2SO4 Adjusted to pH < 2.

Checklist Completed By: YR YRJ 8/12/2019

Reviewed By: LG LG 081319

**ASSET Laboratories**

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

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

**QC Level: Level IV****Subcontractor:**BC Labs  
4100 Atlas Court  
Bakersfield, CA 93308

TEL: (661) 327-4911

FAX: (661) 327-1918

Acct #:

Field Sampler: SIGNED

**08-Aug-19**

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3D		
N036849-002A / SC-700B-WDR-591	Water	8/6/2019 10:30:00 AM	32OZP	1		

Please cc report to Lucille Golosinda at [lucille.golosinda@assetlaboratories.com](mailto:lucille.golosinda@assetlaboratories.com)General Comments: Please email sample receipt acknowledgement to the PM. Please cc [andrea.gallardo@assetlaboratories.com](mailto:andrea.gallardo@assetlaboratories.com).Please use PO#: N36849A Please email Invoices and Account Receivable Statements to [elvira@assetlaboratories.com](mailto:elvira@assetlaboratories.com). For questions, call Marlon at (702)-307-2659. Please e-mail results to [reports.lv@assetlaboratories.com](mailto:reports.lv@assetlaboratories.com) by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. EDD Requirement Labspec7 edata.

	<b>Date/Time</b>	<b>GSO #: 545783098</b>	<b>Date/Time</b>
Relinquished by: <u>YRJ</u>	8/8/2019 17:00	Received by: _____	
Relinquished by: _____		Received by: _____	



## List of Analysts

### ASSET Laboratories Work Order: N036849

NAME	TEST METHOD
Claire Ignacio	EPA 200.7, EPA 200.8
Lilia Ramit	EPA 120.1, SM 2540C, SM 2130B
Ria Abes	EPA 300.0, SM 4500-NO3F
Hanah Glodoviza	EPA 218.6



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA  
11110 Artesia Blvd., Ste B, 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"

## ANALYTICAL REPORT

Job Number: 570-5517-1

Job Description: N037036

For:

Asset Laboratories  
3151 W. Post Road  
Las Vegas, NV 89118

Attention: Marlon Cartin



Approved for release.  
Jimmy Jin  
Project Manager I  
9/16/2019 10:21 AM

---

Designee for  
Don Burley, Senior Project Manager  
7440 Lincoln Way, Garden Grove, CA, 92841  
(714)895-5494  
donaldburley@eurofinsus.com  
09/16/2019

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

**Eurofins Calscience LLC**

7440 Lincoln Way, Garden Grove, CA 92841

Tel (714) 895-5494 Fax (714) 894-7501 [www.EurofinsUS.com](http://www.EurofinsUS.com)

## **CASE NARRATIVE**

**Client: Asset Laboratories**

**Project: N037036**

**Report Number: 570-5517-1**

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### **RECEIPT**

The samples were received on 08/23/2019 at 10:30 AM; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.1 degrees Celsius.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2 degrees Celsius of the required temperature or method specified range. For samples with a specified temperature of 4 degrees Celsius, samples with a temperature ranging from just above freezing temperature of water to 6 degrees Celsius shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

### **AMMONIA**

Sample N037036-001A / SC-700B-WDR-592 (570-5517-1) was analyzed for ammonia in accordance with EPA Method 350.1. The samples were prepared and analyzed on 09/03/2019.

The matrix spike (MS) recovery of sample 570-5534-8 in batch 570-16874 was below control limit. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## Detection Summary

Client: Asset Laboratories  
Project/Site: N037036

Job ID: 570-5517-1

**Client Sample ID: N037036-001A / SC-700B-WDR-592**

**Lab Sample ID: 570-5517-1**

 No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Calscience LLC

# Client Sample Results

Client: Asset Laboratories  
Project/Site: N037036

Job ID: 570-5517-1

## General Chemistry

Client Sample ID: N037036-001A / SC-700B-WDR-592

Date Collected: 08/16/19 13:05

Date Received: 08/23/19 10:30

Lab Sample ID: 570-5517-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.0500	mg/L		09/03/19 10:00	09/03/19 19:11	1

# QC Sample Results

Client: Asset Laboratories  
Project/Site: N037036

Job ID: 570-5517-1

## Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-17058/1-A  
Matrix: Water  
Analysis Batch: 16874

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 17058

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.0500	mg/L		09/03/19 10:00	09/03/19 18:58	1

Lab Sample ID: LCS 570-17058/2-A  
Matrix: Water  
Analysis Batch: 16874

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 17058

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.500	0.5063		mg/L		101	90 - 110

Lab Sample ID: LCSD 570-17058/3-A  
Matrix: Water  
Analysis Batch: 16874

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 17058

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	0.500	0.5407		mg/L		108	90 - 110	7	20

## Sample Summary

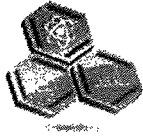
Client: Asset Laboratories  
Project/Site: N037036

Job ID: 570-5517-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
570-5517-1	N037036-001A / SC-700B-WDR-592	Water	08/16/19 13:05	08/23/19 10:30	

---

**ASSET Laboratories**

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

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

**QC Level: Level IV****Subcontractor:**Eurofins Calscience, Inc.  
7440 Lincoln Way  
Garden Grove, CA 92841

TEL: +1 714 895 5494

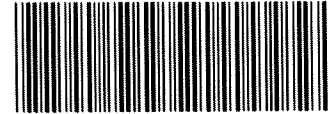
FAX:

Acct #:

Field Sampler: SIGNED

**22-Aug-19**

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests			
				SM4500-NH3D			
N037036-001A / SC-700B-WDR-592	Water	8/16/2019 1:05:00 PM	32OZP	1			



570-5517 Chain of Custody

General Comments: Please email sample receipt acknowledgement to the PM. Please cc andrea.gallardo@assetlaboratories.com

Please use PO#:N37036A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia. EDD Requirement labspec7 edata.

GSO #: 545938866

	Date/Time		Date/Time
Relinquished by: <u>YRJ</u>	8/22/2019 17:00	Received by: <u>[Signature]</u>	08/23/19 1030
Relinquished by: _____	_____	Received by: _____	_____

2-9/3.1 SCG



## Login Sample Receipt Checklist

Client: Asset Laboratories

Job Number: 570-5517-1

Login Number: 5517

List Source: Eurofins Calscience

List Number: 1

Creator: Chang, Wen-Shiang

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

September 11, 2019

Doug Scott  
CH2M HILL  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

TEL: (970) 731-0636  
FAX: (510) 622-9129

Workorder No.: N037036

RE: PG&E Topock, 680375CH.04.IM.OP.00

Attention: Doug Scott

Enclosed are the results for sample(s) received on August 16, 2019 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,



Puri Romualdo  
Laboratory Director

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



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

---

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00  
**Lab Order:** N037036

---

**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 Eurofins CalScience Inc.- Garden Grove, CA.



**ASSET Laboratories**

Date: 11-Sep-19

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00  
**Lab Order:** N037036  
**Contract No:** IM3PLANT-AR

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N037036-001A	SC-700B-WDR-592	Water	8/16/2019 1:05:00 PM	8/16/2019	9/11/2019
N037036-001B	SC-700B-WDR-592	Water	8/16/2019 1:05:00 PM	8/16/2019	9/11/2019
N037036-001C	SC-700B-WDR-592	Water	8/16/2019 1:05:00 PM	8/16/2019	9/11/2019
N037036-001D	SC-700B-WDR-592	Water	8/16/2019 1:05:00 PM	8/16/2019	9/11/2019
N037036-001E	SC-700B-WDR-592	Water	8/16/2019 1:05:00 PM	8/16/2019	9/11/2019
N037036-001F	SC-700B-WDR-592	Water	8/16/2019 1:05:00 PM	8/16/2019	9/11/2019



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

CALIFORNIA | P:562.219.7435 F:562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 11-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-592
<b>Lab Order:</b>	N037036	<b>Collection Date:</b>	8/16/2019 1:05:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037036-001		

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

**SPECIFIC CONDUCTANCE**
**EPA 120.1**

RunID: <b>NV00922-WC_190816E</b>	QC Batch: <b>R135895</b>	PrepDate:	Analyst: <b>LR</b>
Specific Conductance	7100	0.10	0.10
		umhos/cm	1
			8/16/2019 05:05 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037036  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 120.1\_WPGE**

Sample ID	<b>N037036-001BDUP</b>	SampType:	<b>DUP</b>	TestCode:	<b>120.1_WPGE</b>	Units:	<b>umhos/cm</b>	Prep Date:		RunNo:	<b>135895</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R135895</b>	TestNo:	<b>EPA 120.1</b>			Analysis Date:	<b>8/16/2019</b>	SeqNo:	<b>3482994</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Specific Conductance		7140.000		0.10						7110	0.421 2

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

*"Serving Clients with Passion and Professionalism"*

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 11-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-592
<b>Lab Order:</b>	N037036	<b>Collection Date:</b>	8/16/2019 1:05:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037036-001		

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

**TOTAL FILTERABLE RESIDUE**
**SM2540C**

RunID: <b>NV00922-WC_190820H</b>	QC Batch: <b>75086</b>	PrepDate: <b>8/20/2019</b>	Analyst: <b>LR</b>
Total Dissolved Solids (Residue, Filterable)	4100	50	50
		mg/L	1
			8/20/2019 01:27 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037036  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 160.1\_2540C\_W**

Sample ID	LCS-75086	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	8/20/2019	RunNo:	135969			
Client ID:	LCSW	Batch ID:	75086	TestNo:	SM2540C			Analysis Date:	8/20/2019	SeqNo:	3486118			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		972.000		10	1000	0		97.2	80	120				

Sample ID	MB-75086	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	8/20/2019	RunNo:	135969			
Client ID:	PBW	Batch ID:	75086	TestNo:	SM2540C			Analysis Date:	8/20/2019	SeqNo:	3486119			
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	N037067-002BDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	8/20/2019	RunNo:	135969			
Client ID:	ZZZZZZ	Batch ID:	75086	TestNo:	SM2540C			Analysis Date:	8/20/2019	SeqNo:	3486124			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		6990.000		100						7220		3.24	5	

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 11-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-592
<b>Lab Order:</b>	N037036	<b>Collection Date:</b>	8/16/2019 1:05:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037036-001		

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

**TOTAL METALS BY ICP**
**EPA 200.7**

RunID: <b>NV00922-ICP2_190830A</b>	QC Batch: <b>75185</b>	PrepDate: <b>8/28/2019</b>	Analyst: <b>CEI</b>			
Aluminum	ND	40	50	µg/L	1	8/30/2019 01:30 PM
Boron	1000	74	100	µg/L	1	8/30/2019 01:30 PM
Iron	ND	18	20	µg/L	1	8/30/2019 01:30 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037036  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 200.7\_WPGEPB**

Sample ID	MB-75185	SampType:	MBLK	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	8/28/2019	RunNo:	136208		
Client ID:	PBW	Batch ID:	75185	TestNo:	EPA 200.7			Analysis Date:	8/30/2019	SeqNo:	3497230		
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-75185	SampType:	LCS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	8/28/2019	RunNo:	136208		
Client ID:	LCSW	Batch ID:	75185	TestNo:	EPA 200.7			Analysis Date:	8/30/2019	SeqNo:	3497231		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	9515.632	50	10000	0	95.2	85	115				
Boron	4635.615	100	5000	0	92.7	85	115				
Iron	106.328	20	100.0	0	106	85	115				

Sample ID	N037224-001A-MS	SampType:	MS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	8/28/2019	RunNo:	136208		
Client ID:	ZZZZZZ	Batch ID:	75185	TestNo:	EPA 200.7			Analysis Date:	8/30/2019	SeqNo:	3497235		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	9911.946	50	10000	180.5	97.3	75	125				
Boron	5494.355	100	5000	596.5	98.0	75	125				
Iron	250.982	20	100.0	145.9	105	75	125				

Sample ID	N037224-001A-MSD	SampType:	MSD	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	8/28/2019	RunNo:	136208		
Client ID:	ZZZZZZ	Batch ID:	75185	TestNo:	EPA 200.7			Analysis Date:	8/30/2019	SeqNo:	3497236		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	9907.485	50	10000	180.5	97.3	75	125	9912	0.0450	20	
Boron	5510.772	100	5000	596.5	98.3	75	125	5494	0.298	20	
Iron	247.104	20	100.0	145.9	101	75	125	251.0	1.56	20	

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 11-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-592
<b>Lab Order:</b>	N037036	<b>Collection Date:</b>	8/16/2019 1:05:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037036-001		

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

**TOTAL METALS BY ICPMS**
**EPA 200.8**

RunID: NV00922-ICP7_190823B	QC Batch: 75088	PrepDate: 8/21/2019	Analyst: CEI			
Antimony	ND	0.16	0.50	µg/L	1	8/23/2019 07:32 PM
Arsenic	ND	0.081	0.10	µg/L	1	8/24/2019 06:26 PM
Barium	15	0.15	1.0	µg/L	1	8/23/2019 07:32 PM
Copper	ND	0.55	1.0	µg/L	1	9/4/2019 04:59 PM
Lead	ND	0.13	1.0	µg/L	1	8/23/2019 07:32 PM
Manganese	ND	0.26	0.50	µg/L	1	9/3/2019 08:41 PM
Molybdenum	24	0.21	0.50	µg/L	1	8/23/2019 07:32 PM
Nickel	2.4	0.26	1.0	µg/L	1	9/4/2019 04:59 PM
Zinc	ND	2.3	10	µg/L	1	9/3/2019 08:41 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037036  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 200.8\_W**

Sample ID <b>MB-75088</b>	SampType: <b>MBLK</b>	TestCode: <b>200.8_W</b>	Units: <b>µg/L</b>	Prep Date: <b>8/21/2019</b>	RunNo: <b>136098</b>
Client ID: <b>PBW</b>	Batch ID: <b>75088</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>8/23/2019</b>	SeqNo: <b>3492072</b>
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			
Molybdenum	ND	0.50			

Sample ID <b>LCS-75088</b>	SampType: <b>LCS</b>	TestCode: <b>200.8_W</b>	Units: <b>µg/L</b>	Prep Date: <b>8/21/2019</b>	RunNo: <b>136098</b>
Client ID: <b>LCSW</b>	Batch ID: <b>75088</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>8/23/2019</b>	SeqNo: <b>3492075</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Antimony	9.827	0.50	10.00	0	98.3	85	115			
Barium	10.316	1.0	10.00	0	103	85	115			
Lead	10.136	1.0	10.00	0	101	85	115			
Molybdenum	9.807	0.50	10.00	0	98.1	85	115			

Sample ID <b>N037036-001E-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_W</b>	Units: <b>µg/L</b>	Prep Date: <b>8/21/2019</b>	RunNo: <b>136098</b>
Client ID: <b>ZZZZZ</b>	Batch ID: <b>75088</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>8/23/2019</b>	SeqNo: <b>3492084</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Antimony	9.806	0.50	10.00	0	98.1	75	125			
Barium	26.339	1.0	10.00	15.14	112	75	125			
Lead	9.952	1.0	10.00	0	99.5	75	125			
Molybdenum	36.425	0.50	10.00	24.50	119	75	125			

Sample ID <b>N037036-001E-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>200.8_W</b>	Units: <b>µg/L</b>	Prep Date: <b>8/21/2019</b>	RunNo: <b>136098</b>
Client ID: <b>ZZZZZ</b>	Batch ID: <b>75088</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>8/23/2019</b>	SeqNo: <b>3492087</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Antimony	10.087	0.50	10.00	0	101	75	125	9.806	2.83	20
----------	--------	------	-------	---	-----	----	-----	-------	------	----

**Qualifiers:**

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND CLIMATE

**CALIFORNIA** | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037036  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.8\_W

Sample ID	N037036-001E-MSD	SampType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/21/2019	RunNo: 136098					
Client ID:	ZZZZZZ	Batch ID: 75088	TestNo: EPA 200.8	Analysis Date: 8/23/2019	SeqNo: 3492087						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	26.616	1.0	10.00	15.14	115	75	125	26.34	1.05	20	
Lead	9.849	1.0	10.00	0	98.5	75	125	9.952	1.05	20	
Molybdenum	36.475	0.50	10.00	24.50	120	75	125	36.42	0.137	20	

Sample ID	MB-75088	SampType: MBLK	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/21/2019	RunNo: 136109					
Client ID:	PBW	Batch ID: 75088	TestNo: EPA 200.8		Analysis Date: 8/24/2019	SeqNo: 3492932					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Sample ID	LCS-75088	SampType: LCS	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/21/2019	RunNo: 136109					
Client ID:	LCSW	Batch ID: 75088	TestNo: EPA 200.8	Analysis Date: 8/24/2019	SeqNo: 3492935						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.113	0.10	10.00	0	101	85	115				

Sample ID	N037036-001E-MS	SampType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/21/2019	RunNo: 136109					
Client ID:	ZZZZZZ	Batch ID: 75088	TestNo: EPA 200.8		Analysis Date: 8/24/2019	SeqNo: 3492944					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.572	0.10	10.00	0.08635	105	75	125				

Sample ID	N037036-001E-MSD	SampType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/21/2019	RunNo: 136109					
Client ID:	ZZZZZZ	Batch ID: 75088	TestNo: EPA 200.8	Analysis Date: 8/24/2019	SeqNo: 3492947						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.650	0.10	10.00	0.08635	106	75	125	10.57	0.735	20	

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037036  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.8\_W

Sample ID <b>MB-75184</b>	SampType: <b>MBLK</b>	TestCode: <b>200.8_W</b>	Units: <b>µg/L</b>	Prep Date: <b>8/28/2019</b>	RunNo: <b>136271</b>
Client ID: <b>PBW</b>	Batch ID: <b>75184</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>9/3/2019</b>	SeqNo: <b>3500681</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Manganese	ND	0.50			
Zinc	ND	10			

Sample ID <b>LCS-75184</b>	SampType: <b>LCS</b>	TestCode: <b>200.8_W</b>	Units: <b>µg/L</b>	Prep Date: <b>8/28/2019</b>	RunNo: <b>136271</b>
Client ID: <b>LCSW</b>	Batch ID: <b>75184</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>9/3/2019</b>	SeqNo: <b>3500682</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Manganese	103.308	0.50	100.0	0	103 85 115
Zinc	10.224	10	10.00	0	102 85 115

Sample ID <b>N037219-003D-MS</b>	SampType: <b>MS</b>	TestCode: <b>200.8_W</b>	Units: <b>µg/L</b>	Prep Date: <b>8/28/2019</b>	RunNo: <b>136271</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>75184</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>9/3/2019</b>	SeqNo: <b>3500687</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Manganese	108.862	0.50	100.0	6.471	102 75 125
Zinc	9.685	10	10.00	0	96.8 75 125

Sample ID <b>N037219-003D-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>200.8_W</b>	Units: <b>µg/L</b>	Prep Date: <b>8/28/2019</b>	RunNo: <b>136271</b>
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>75184</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>9/3/2019</b>	SeqNo: <b>3500688</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Manganese	108.142	0.50	100.0	6.471	102 75 125 108.9 0.664 20
Zinc	9.413	10	10.00	0	94.1 75 125 9.685 0 20

Sample ID <b>MB-75184</b>	SampType: <b>MBLK</b>	TestCode: <b>200.8_W</b>	Units: <b>µg/L</b>	Prep Date: <b>8/28/2019</b>	RunNo: <b>136283</b>
Client ID: <b>PBW</b>	Batch ID: <b>75184</b>	TestNo: <b>EPA 200.8</b>		Analysis Date: <b>9/4/2019</b>	SeqNo: <b>3501288</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Copper	ND	1.0			
--------	----	-----	--	--	--

### Qualifiers:

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



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, & CHEMICAL

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037036  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.8\_W

Sample ID	MB-75184	SampType:	MBLK	TestCode:	200.8_W	Units:	µg/L	Prep Date:	8/28/2019	RunNo:	136283		
Client ID:	PBW	Batch ID:	75184	TestNo:	EPA 200.8			Analysis Date:	9/4/2019	SeqNo:	3501288		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nickel ND 1.0

Sample ID	LCS-75184	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	8/28/2019	RunNo:	136283		
Client ID:	LCSW	Batch ID:	75184	TestNo:	EPA 200.8			Analysis Date:	9/4/2019	SeqNo:	3501289		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 9.647 1.0 10.00 0 96.5 85 115  
 Nickel 10.259 1.0 10.00 0 103 85 115

Sample ID	N037219-003D-MS	SampType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/28/2019	RunNo: 136283					
Client ID:	ZZZZZZ	Batch ID: 75184	TestNo: EPA 200.8		Analysis Date: 9/4/2019	SeqNo: 3501294					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 7.942 1.0 10.00 0 79.4 75 125  
 Nickel 10.149 1.0 10.00 0.5152 96.3 75 125

Sample ID	N037219-003D-MSD	SampType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 8/28/2019	RunNo: 136283					
Client ID:	ZZZZZZ	Batch ID: 75184	TestNo: EPA 200.8		Analysis Date: 9/4/2019	SeqNo: 3501295					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 8.000 1.0 10.00 0 80.0 75 125 7.942 0.724 20  
 Nickel 10.154 1.0 10.00 0.5152 96.4 75 125 10.15 0.0474 20

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 11-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-592
<b>Lab Order:</b>	N037036	<b>Collection Date:</b>	8/16/2019 1:05:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037036-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>HEXAVALENT CHROMIUM BY IC</b>							
<b>EPA 218.6</b>							
RunID: NV00922-IC7_190821A	QC Batch: R135971			PrepDate:		Analyst: HG	
Hexavalent Chromium	0.25	0.033	0.20		µg/L	1	8/21/2019 02:26 PM
<b>TOTAL METALS BY ICPMS</b>							
<b>EPA 200.8</b>							
RunID: NV00922-ICP7_190903C	QC Batch: 75184			PrepDate:	8/28/2019	Analyst: CEI	
Chromium	ND	0.13	1.0		µg/L	1	9/3/2019 08:41 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**CLIENT:** CH2M HILL  
**Work Order:** N037036  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 200.8\_W\_CRPGE**

Sample ID	MB-75184	SampType:	MBLK	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	8/28/2019	RunNo:	136271		
Client ID:	PBW	Batch ID:	75184	TestNo:	EPA 200.8			Analysis Date:	9/3/2019	SeqNo:	3500372		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		ND		1.0									

Sample ID	LCS-75184	SampType:	LCS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	8/28/2019	RunNo:	136271		
Client ID:	LCSW	Batch ID:	75184	TestNo:	EPA 200.8			Analysis Date:	9/3/2019	SeqNo:	3500373		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		10.182		1.0	10.00	0	102	85	115				

Sample ID	N037219-003D-DUP	SampType:	DUP	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	8/28/2019	RunNo:	136271		
Client ID:	ZZZZZZ	Batch ID:	75184	TestNo:	EPA 200.8			Analysis Date:	9/3/2019	SeqNo:	3500376		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		ND		1.0						0	0	20	

Sample ID	N037219-003D-MS	SampType:	MS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	8/28/2019	RunNo:	136271		
Client ID:	ZZZZZZ	Batch ID:	75184	TestNo:	EPA 200.8			Analysis Date:	9/3/2019	SeqNo:	3500378		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		9.979		1.0	10.00	0	99.8	75	125				

Sample ID	N037219-003D-MSD	SampType:	MSD	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	8/28/2019	RunNo:	136271		
Client ID:	ZZZZZZ	Batch ID:	75184	TestNo:	EPA 200.8			Analysis Date:	9/3/2019	SeqNo:	3500379		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		9.755		1.0	10.00	0	97.5	75	125	9.979	2.28	20	

**Qualifiers:**

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


**ASSET LABORATORIES**  
ANALYTICAL QUALITY SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

**CALIFORNIA** | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037036  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 218.6\_WU\_PGE

Sample ID	MB-R135971	SampType:	MBLK	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	135971			
Client ID:	PBW	Batch ID:	R135971	TestNo:	EPA 218.6			Analysis Date:	8/21/2019	SeqNo:	3496473			
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-R135971	SampType:	LCS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	135971			
Client ID:	LCSW	Batch ID:	R135971	TestNo:	EPA 218.6			Analysis Date:	8/21/2019	SeqNo:	3496474			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 4.921 0.20 5.000 0 98.4 90 110

Sample ID	N037066-001AMS	SampType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 135971					
Client ID:	ZZZZZZ	Batch ID: R135971	TestNo: EPA 218.6	Analysis Date: 8/21/2019	SeqNo: 3496480						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 139.460 2.0 50.00 89.97 99.0 90 110

Sample ID	N037066-002AMS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	135971			
Client ID:	ZZZZZZ	Batch ID:	R135971	TestNo:	EPA 218.6			Analysis Date:	8/21/2019	SeqNo:	3496482			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 139.428 2.0 50.00 90.24 98.4 90 110

Sample ID	N037066-002ADUP	SampType:	DUP	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	135971			
Client ID:	ZZZZZZ	Batch ID:	R135971	TestNo:	EPA 218.6			Analysis Date:	8/21/2019	SeqNo:	3496485			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 90.287 2.0 90.24 0.0476 20

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037036  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 218.6\_WU\_PGE

Sample ID	<b>N037066-001AMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>218.6_WU_P</b>	Units:	<b>µg/L</b>	Prep Date:		RunNo:	<b>135971</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R135971</b>	TestNo:	<b>EPA 218.6</b>			Analysis Date:	<b>8/21/2019</b>	SeqNo:	<b>3496486</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Hexavalent Chromium	139.991	2.0	50.00	89.97	100	90	110	139.5	0.380	20
---------------------	---------	-----	-------	-------	-----	----	-----	-------	-------	----

Sample ID	<b>N037036-001CMS</b>	SampType:	<b>MS</b>	TestCode:	<b>218.6_WU_P</b>	Units:	<b>µg/L</b>	Prep Date:		RunNo:	<b>135971</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R135971</b>	TestNo:	<b>EPA 218.6</b>			Analysis Date:	<b>8/21/2019</b>	SeqNo:	<b>3496498</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Hexavalent Chromium	1.220	0.20	1.000	0.2474	97.3	90	110
---------------------	-------	------	-------	--------	------	----	-----

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 11-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-592
<b>Lab Order:</b>	N037036	<b>Collection Date:</b>	8/16/2019 1:05:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037036-001		

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

**TURBIDITY**
**SM 2130B**

RunID: <b>NV00922-WC_190816H</b>	QC Batch: <b>R135898</b>	PrepDate:	Analyst: <b>LR</b>
Turbidity	0.12	0.10	0.10
			NTU
			1
			8/16/2019 05:15 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037036  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 2130\_W**

Sample ID	MB-R135898	SampType:	MBLK	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	135898		
Client ID:	PBW	Batch ID:	R135898	TestNo:	SM 2130B			Analysis Date:	8/16/2019	SeqNo:	3483002		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity		ND		0.10									

Sample ID	N037036-001BDUP	SampType:	DUP	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	135898		
Client ID:	ZZZZZZ	Batch ID:	R135898	TestNo:	SM 2130B			Analysis Date:	8/16/2019	SeqNo:	3483004		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity		0.120		0.10						0.1200	0	30	

**Qualifiers:**

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

**ASSET LABORATORIES**

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 11-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-592
<b>Lab Order:</b>	N037036	<b>Collection Date:</b>	8/16/2019 1:05:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037036-001		

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

**ANIONS BY ION CHROMATOGRAPHY**
**EPA 300.0**

RunID: NV00922-IC8_190819A	QC Batch: R135936	PrepDate:	Analyst: HG
Fluoride	2.6 0.096	1.0	mg/L 10 8/20/2019

**ANIONS BY ION CHROMATOGRAPHY**
**EPA 300.0**

RunID: NV00922-IC8_190819A	QC Batch: R135936	PrepDate:	Analyst: HG
Sulfate	480 2.0	25	mg/L 50 8/20/2019 12:15 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037036  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 300\_W\_FPGE**

Sample ID	MB-R135936_F	SampType:	MBLK	TestCode:	300_W_FPGE	Units:	mg/L	Prep Date:		RunNo:	135936		
Client ID:	PBW	Batch ID:	R135936	TestNo:	EPA 300.0			Analysis Date:	8/19/2019	SeqNo:	3484174		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		ND		0.10									

Sample ID	LCS-R135936_F	SampType:	LCS	TestCode:	300_W_FPGE	Units:	mg/L	Prep Date:		RunNo:	135936		
Client ID:	LCSW	Batch ID:	R135936	TestNo:	EPA 300.0			Analysis Date:	8/19/2019	SeqNo:	3484175		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		1.214		0.10	1.250	0	97.1	90	110				

Sample ID	N036481-009AMS	SampType:	MS	TestCode:	300_W_FPGE	Units:	mg/L	Prep Date:		RunNo:	135936		
Client ID:	ZZZZZZ	Batch ID:	R135936	TestNo:	EPA 300.0			Analysis Date:	8/19/2019	SeqNo:	3484183		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		17.598		1.0	12.50	5.528	96.6	80	120				

Sample ID	N036481-009AMSD	SampType:	MSD	TestCode:	300_W_FPGE	Units:	mg/L	Prep Date:		RunNo:	135936		
Client ID:	ZZZZZZ	Batch ID:	R135936	TestNo:	EPA 300.0			Analysis Date:	8/19/2019	SeqNo:	3484184		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		17.484		1.0	12.50	5.528	95.7	80	120	17.60	0.650	20	

Sample ID	N036932-001BDUP	SampType:	DUP	TestCode:	300_W_FPGE	Units:	mg/L	Prep Date:		RunNo:	135936		
Client ID:	ZZZZZZ	Batch ID:	R135936	TestNo:	EPA 300.0			Analysis Date:	8/19/2019	SeqNo:	3484187		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		2.186		0.50						2.028	7.50	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			



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037036  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_SO4PGE

Sample ID	MB-R135936_SO4	SampType: MBLK	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 135936					
Client ID:	PBW	Batch ID: R135936	TestNo: EPA 300.0	Analysis Date: 8/19/2019	SeqNo: 3484242						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate ND 0.50

Sample ID	LCS-R135936_SO4	SampType: LCS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 135936					
Client ID:	LCSW	Batch ID: R135936	TestNo: EPA 300.0	Analysis Date: 8/19/2019	SeqNo: 3484243						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate 3.937 0.50 4.000 0 98.4 90 110

Sample ID	N036481-009AMS	SampType: MS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 135936					
Client ID:	ZZZZZZ	Batch ID: R135936	TestNo: EPA 300.0	Analysis Date: 8/19/2019	SeqNo: 3484250						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate 247.420 10 80.00 168.8 98.2 80 120

Sample ID	N036481-009AMSD	SampType: MSD	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 135936					
Client ID:	ZZZZZZ	Batch ID: R135936	TestNo: EPA 300.0	Analysis Date: 8/19/2019	SeqNo: 3484253						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate 246.944 10 80.00 168.8 97.6 80 120 247.4 0.193 20

Sample ID	N036932-001BDUP	SampType: DUP	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 135936					
Client ID:	ZZZZZZ	Batch ID: R135936	TestNo: EPA 300.0	Analysis Date: 8/19/2019	SeqNo: 3484255						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate 365.450 25 368.0 0.690 20

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 11-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-592
<b>Lab Order:</b>	N037036	<b>Collection Date:</b>	8/16/2019 1:05:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037036-001		

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

**NITRATE/NITRITE-N BY CADMIUM REDUCTION**
**SM4500-NO3F**

RunID: <b>NV00922-WC_190904C</b>	QC Batch: <b>R136372</b>	PrepDate:	Analyst: <b>RAB</b>
Nitrate/Nitrite as N	2.8 0.16	0.25	mg/L 5 9/4/2019

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037036  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 4500N03F\_W**

Sample ID	MB-R136372	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	136372			
Client ID:	PBW	Batch ID:	R136372	TestNo:	SM4500-NO3			Analysis Date:	9/4/2019	SeqNo:	3506790			
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-R136372	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	136372			
Client ID:	LCSW	Batch ID:	R136372	TestNo:	SM4500-NO3			Analysis Date:	9/4/2019	SeqNo:	3506791			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		0.505		0.050	0.5000	0		101	85	115				

Sample ID	N037067-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	136372			
Client ID:	ZZZZZZ	Batch ID:	R136372	TestNo:	SM4500-NO3			Analysis Date:	9/4/2019	SeqNo:	3506797			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		0.766		0.050							0.8047	4.89	20	

Sample ID	N037036-001DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	136372			
Client ID:	ZZZZZZ	Batch ID:	R136372	TestNo:	SM4500-NO3			Analysis Date:	9/4/2019	SeqNo:	3506799			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		5.426		0.25	2.500	2.772		106	75	125				

Sample ID	N037036-001DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	136372			
Client ID:	ZZZZZZ	Batch ID:	R136372	TestNo:	SM4500-NO3			Analysis Date:	9/4/2019	SeqNo:	3506801			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		5.667		0.25	2.500	2.772		116	75	125	5.426	4.34	20	

**Qualifiers:**

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


**ASSET LABORATORIES**  
ANALYTICAL QUALITY SERVICES FOR THE ENVIRONMENTAL, INDUSTRIAL, AND WATER INDUSTRIES
**CALIFORNIA** | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638







**NEVADA** | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

## CHAIN OF CUSTODY RECORD

Page 1 OF 1

Project Name PG&E Topock				Container:	1 Liter Poly	1 Liter Poly	1 Liter Poly	250 ml Poly	1 Liter Poly	1 Liter Poly	500 ml Poly	1 Liter Poly	Number of Containers	COMMENTS	
Location PG&E Topock				Preservatives:	4°C Lab H2SO4	4°C	4°C	4°C	4°C Lab H2SO4	4°C	4°C	4°C			
Project Number 680375CH.04.IM.OP.00				Filtered:	NA	NA	NA	NA	NA	NA	NA				
Project Manager Scott O'Donnell				Holding Time:	28	7	7	1	28	7	180	7			
Sample Manager Shawn Duffy					AMMONIA (SM4500NH3D)	ANIONS (E300.0) F1, SO4		CONDUCTIVITY (E120.1)	E218.8 Lab Filtered	NITRATE/NITRITE (SM4500NO3-E)	TDS (SM2540C)	Total Metals (E200.7 and E200.8)			Turbidity (SM2130)
Task Order															
Project IM3PLANT-ARAR-WDR-592															
Turnaround Time 10 Days															
Shipping Date:															
COC Number: 592															
DATE				TIME	Matrix										
SC-700B-WDR-592	8-16-19	13:05	Water	X	X	X	X	X	X	X	X	X	N037036-01	4	PH = 7.69
TOTAL NUMBER OF CONTAINERS													4		

<b>Signatures</b> Approved by  Sampled by  Relinquished by  Received by  Relinquished by  Received by 		<b>Date/Time</b> 8-16-19 7:00 8-16-19 13:05 8-16-19 13:30 8-16-19 13:30 8-16-19 15:40 8/16/19 15:40		<b>Shipping Details</b> Method of Shipment: FedEx On Ice: <input checked="" type="checkbox"/> yes / no 3.8°C JN#2 Airbill No: Lab Name: ASSET Laboratories Lab Phone: (702) 307-2659		<b>ATTN:</b> Sample Custody and Marlon Cartin		<b>Special Instructions:</b> SC-700B Total metals List: Cr,Al,Sb,As,Ba,B,Cu,Pb,Mn,Mo,Ni,Fe,Zn Report Copy to Doug Scott (970) 731-0636	
--	--	---	--	---	--	--	--	---	--

## 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: 8/16/2019 Workorder: N037036  
 Rep sample Temp (Deg C): 3.8 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
2. Custody seals intact, signed, dated on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
3. Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
4. Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
5. Sampler's name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
6. Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
7. Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
8. Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
9. Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
10. Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
11. All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
13. Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH < 2 for Metals	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>
15. Did the bottle labels indicate correct preservatives used?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
16. Were there Non-Conformance issues at login?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Was Client notified?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

Comments: Sample for Cr 6+ was lab filtered and then preserved with Ammonium buffer.  
 Sample for Total Metals was lab preserved with HNO3 and for Ammonia/NO3- with H2SO4.

Checklist Completed By: YR  8/20/2019

Reviewed By:  LG 082519

**ASSET Laboratories**

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

www.asset-labs.com

TEL: 7023072659

FAX: 7023072691

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

**QC Level: Level IV****Subcontractor:**Eurofins Calscience, Inc.  
7440 Lincoln Way  
Garden Grove, CA 92841TEL: +1 714 895 5494  
FAX:  
Acct #:

Field Sampler: SIGNED

**22-Aug-19**

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3D		
N037036-001A / SC-700B-WDR-592	Water	8/16/2019 1:05:00 PM	32OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM. Please cc andrea.gallardo@assetlaboratories.com

Please use PO#:N37036A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia. EDD Requirement labspec7 edata.

GSO #: 545938866

	Date/Time		Date/Time
Relinquished by: <u>YAT</u>	8/22/2019 17:00	Received by: _____	_____
Relinquished by: _____	_____	Received by: _____	_____

## List of Analysts

### ASSET Laboratories Work Order: N037036

NAME	TEST METHOD
Claire Ignacio	EPA 200.7, EPA 200.8
Lilia Ramit	EPA 120.1, SM 2540C, SM 2130B
Ria Abes	SM 4500-NO3F
Hanah Glodoviza	EPA 218.6, EPA 300.0



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA  
11110 Artesia Blvd., Ste B, 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"



Enthalpy Analytical  
2323 Fifth Street  
Berkeley, CA 94710  
(510) 486-0900

enthalpy.com

Lab Job Number: 313677  
Report Level: II  
Report Date: 09/16/2019

**Analytical Report** *prepared for:*

Andrea Gallardo  
ASSET LABS  
3151-3153 W Post Road  
Las Vegas, NV 89118

*Authorized for release by:*

Patrick McCarthy, Project Manager  
(510) 204-2236 ext 13115  
[patrick.mccarthy@enthalpy.com](mailto:patrick.mccarthy@enthalpy.com)

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 2896, NELAP# 4044-001



## Sample Summary

---

Andrea Gallardo  
ASSET LABS  
3151-3153 W Post Road  
Las Vegas, NV 89118

---

Lab Job Number: 313677  
Date Received: 09/06/19

---

Sample ID	Lab ID	Collected	Matrix
SC-700B-WDR-593	313677-001	09/05/19 17:00	Water

---



## Case Narrative

---

ASSET LABS  
3151-3153 W Post Road  
Las Vegas, NV 89118  
Andrea Gallardo

---

Lab Job Number: 313677  
Date Received: 09/06/19

This data package contains sample and QC results for one water sample, requested for the above referenced project on 09/06/19. The sample was received cold and intact.

**Ammonia Nitrogen (SM4500NH3-D):**

No analytical problems were encountered.

## Detection Summary for 313677

**Client:** ASSET LABS

Sample ID: SC-700B-WDR-593								Lab ID: 313677-001	
Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Ammonia-N	0.20		0.10	0.020	mg/L	TOTAL	1.000	SM4500NH3-D	SM4500NH3-B



# ASSET Laboratories

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

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

## CHAIN-OF-CUSTODY RECORD

Page 1 of 1

QC Level: Level IV

### Subcontractor:

Enthalpy Analytical  
2323 5th St  
Berkeley, CA 94710

TEL: (510) 486-0900  
FAX:  
Acct #:

Field Sampler: SIGNED

05-Sep-19

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests			
				SM4500-NH3D			
N037313-002A / SC-700B-WDR-593	Water	9/4/2019 12:30:00 PM	32OZP	1			

### General Comments:

Please email sample receipt acknowledgement to the PM. Please cc andrea.gallardo@assetlaboratories.com

Please use PO#:N37313A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. EDD Requirement Labspec7 edata.

GSO #: 546093201

	Date/Time		Date/Time
Relinquished by: <u>YRJ</u>	9/5/2019 17:00	Received by: _____	_____
Relinquished by: _____	_____	Received by: _____	_____

# **SAMPLE RECEIPT CHECKLIST**

Section 1: Login # 313677  
Date Received: 9/6/19

Client: ASSET Labs  
Project: \_\_\_\_\_



Section 2: Samples received in a cooler? ☒ Yes, how many? 1 ☐ No (skip Section 3 below)

If no cooler Sample Temp (°C): \_\_\_\_\_ using IR Gun # ☐ A, or ☐ B  
☐ Samples received on ice directly from the field. Cooling process had begun

If in cooler: Date Opened 9/6/19 By (print) R (sign) R  
Shipping info (if applicable) 650 # 546093201

Are custody seals present? ☒ No, or ☐ Yes. If yes, where? ☐ on cooler, ☐ on samples, ☐ on package  
☐ Date: \_\_\_\_\_ How many \_\_\_\_\_ ☐ Signature, ☐ Initials, ☐ None  
Were custody seals intact upon arrival? ☐ Yes ☐ No ☒ N/A

Section 3: **Important : Notify PM if temperature exceeds 6°C or arrive frozen.**

Packing in cooler: (if other, describe) \_\_\_\_\_  
☐ Bubble Wrap, ☐ Foam blocks, ☒ Bags, ☐ None, ☐ Cloth material, ☐ Cardboard, ☐ Styrofoam, ☐ Paper towels  
☐ Samples received on ice directly from the field. Cooling process had begun  
Type of ice used : ☒ Wet, ☐ Blue/Gel, ☐ None Temperature blank(s) included? ☐ Yes, ☐ No  
Temperature measured using ☐ Thermometer ID: \_\_\_\_\_, or IR Gun # ☐ A ☒ B  
Cooler Temp (°C): #1: 3.5, #2: \_\_\_\_\_, #3: \_\_\_\_\_, #4: \_\_\_\_\_, #5: \_\_\_\_\_, #6: \_\_\_\_\_, #7: \_\_\_\_\_

Section 4:	YES	NO	N/A
Were custody papers dry, filled out properly, and the project identifiable	<input checked="" type="checkbox"/>		
Were Method 5035 sampling containers present?	<input checked="" type="checkbox"/>		
If YES, what time were they transferred to freezer? _____			
Did all bottles arrive unbroken/unopened?	<input checked="" type="checkbox"/>		
Are there any missing / extra samples?		<input checked="" type="checkbox"/>	
Are samples in the appropriate containers for indicated tests?	<input checked="" type="checkbox"/>		
Are sample labels present, in good condition and complete?	<input checked="" type="checkbox"/>		
Does the container count match the COC?	<input checked="" type="checkbox"/>		
Do the sample labels agree with custody papers?	<input checked="" type="checkbox"/>		
Was sufficient amount of sample sent for tests requested?	<input checked="" type="checkbox"/>		
Did you change the hold time in LIMS for unpreserved VOAs?			
Did you change the hold time in LIMS for preserved terracores?			
Are bubbles > 6mm absent in VOA samples?			<input checked="" type="checkbox"/>
Was the client contacted concerning this sample delivery?			
If YES, who was called? _____ By _____ Date: _____			

Section 5:	YES	NO	N/A
Are the samples appropriately preserved? (if N/A, skip the rest of section 5)			
Did you check preservatives for all bottles for each sample?			
Did you document your preservative check?			
pH strip lot# _____, pH strip lot# _____, pH strip lot# _____			
Preservative added:			
<input type="checkbox"/> H2SO4 lot# _____ added to samples _____ on/at _____			
<input type="checkbox"/> HCL lot# _____ added to samples _____ on/at _____			
<input type="checkbox"/> HNO3 lot# _____ added to samples _____ on/at _____			
<input type="checkbox"/> NaOH lot# _____ added to samples _____ on/at _____			

Section 6:  
Explanations/Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date Logged in 9/6/19 By (print) pmc (sign) [Signature]  
Date Labeled 9/6/19 By (print) L (sign) [Signature]

## Ammonia Nitrogen

**Lab #:** 313677

**Project#:** STANDARD

**Client:** ASSET LABS

**Location:**
**Field ID:** SC-700B-WDR-593

**Diln Fac:** 1.000

**Prepared:** 09/12/19 11:21

**Type:** SAMPLE

**Batch#:** 274025

**Analyzed:** 09/12/19 14:35

**Lab ID:** 313677-001

**Sampled:** 09/05/19 17:00

**Prep:** SM4500NH3-B

**Matrix:** Water

**Received:** 09/06/19

**Analysis:** SM4500NH3-D

Analyte	Result	RL	MDL	Units
Ammonia-N	0.20	0.10	0.020	mg/L

**Type:** BLANK

**Diln Fac:** 1.000

**Analyzed:** 09/12/19 14:35

**Lab ID:** QC990517

**Batch#:** 274025

**Prep:** SM4500NH3-B

**Matrix:** Water

**Prepared:** 09/12/19 11:21

**Analysis:** SM4500NH3-D

Analyte	Result	RL	MDL	Units
Ammonia-N	ND	0.10	0.020	mg/L

Legend

**MDL:** Method Detection Limit

**ND:** Not Detected at or above MDL

**RL:** Reporting Limit

## Ammonia Nitrogen: Batch QC

**Lab #:** 313677

**Project#:** STANDARD

**Client:** ASSET LABS

**Location:**
**Type:** LCS

**Diln Fac:** 1.000

**Analyzed:** 09/12/19 14:35

**Lab ID:** QC990518

**Batch#:** 274025

**Prep:** SM4500NH3-B

**Matrix:** Water

**Prepared:** 09/12/19 11:21

**Analysis:** SM4500NH3-D

Analyte	Spiked	Result	%REC	Limits	Units
Ammonia-N	5.000	4.100	82	80-120	mg/L

**Field ID:** SC-700B-WDR-593

**Diln Fac:** 1.000

**Analyzed:** 09/12/19 14:35

**Type:** MS

**Batch#:** 274025

**Prep:** SM4500NH3-B

**MSS Lab ID:** 313677-001

**Sampled:** 09/05/19 17:00

**Analysis:** SM4500NH3-D

**Lab ID:** QC990519

**Received:** 09/06/19

**Matrix:** Water

**Prepared:** 09/12/19 11:21

Analyte	MSS Result	Spiked	Result	%REC	Limits	Units
Ammonia-N	0.2000	5.000	4.600	88	28-120	mg/L

**Field ID:** SC-700B-WDR-593

**Diln Fac:** 1.000

**Analyzed:** 09/12/19 14:35

**Type:** MSD

**Batch#:** 274025

**Prep:** SM4500NH3-B

**MSS Lab ID:** 313677-001

**Sampled:** 09/05/19 17:00

**Analysis:** SM4500NH3-D

**Lab ID:** QC990520

**Received:** 09/06/19

**Matrix:** Water

**Prepared:** 09/12/19 11:21

Analyte	Spiked	Result	%REC	Limits	Units	RPD	Lim
Ammonia-N	5.000	4.600	88	28-120	mg/L	0	30

Legend

**RPD:** Relative Percent Difference

September 18, 2019

Doug Scott  
CH2M HILL  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

TEL: (970) 731-0636  
FAX: (510) 622-9129

Workorder No.: N037313

RE: PG&E Topock, 680375CH.04.IM.OP.00

Attention: Doug Scott

Enclosed are the results for sample(s) received on September 04, 2019 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,



Puri Romualdo  
Laboratory Director

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



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00  
**Lab Order:** N037313

**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 Enthalpy Analytical- Berkeley, CA.

**Analytical Comments for EPA 200.7:**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Iron in QC samples N037313-001C-MS1 and N037313-001C-MSD1 possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

**Analytical Comments for EPA 200.8:**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Barium in QC samples N037355-001A-MS and N037355-001A-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Method Blank has hit greater than 1/2 the reporting limit for Copper however, sample was none detect (ND) for this analyte therefore reanalysis of the sample was not necessary.





**ASSET Laboratories**

Date: 18-Sep-19

**CLIENT:** CH2M HILL  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00  
**Lab Order:** N037313  
**Contract No:** IM3PLANT-AR

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N037313-001A	SC-100B-WDR-593	Water	9/4/2019 12:25:00 PM	9/4/2019	9/18/2019
N037313-001B	SC-100B-WDR-593	Water	9/4/2019 12:25:00 PM	9/4/2019	9/18/2019
N037313-001C	SC-100B-WDR-593	Water	9/4/2019 12:25:00 PM	9/4/2019	9/18/2019
N037313-001D	SC-100B-WDR-593	Water	9/4/2019 12:25:00 PM	9/4/2019	9/18/2019
N037313-002A	SC-700B-WDR-593	Water	9/4/2019 12:30:00 PM	9/4/2019	9/18/2019
N037313-002B	SC-700B-WDR-593	Water	9/4/2019 12:30:00 PM	9/4/2019	9/18/2019
N037313-002C	SC-700B-WDR-593	Water	9/4/2019 12:30:00 PM	9/4/2019	9/18/2019
N037313-002D	SC-700B-WDR-593	Water	9/4/2019 12:30:00 PM	9/4/2019	9/18/2019
N037313-002E	SC-700B-WDR-593	Water	9/4/2019 12:30:00 PM	9/4/2019	9/18/2019
N037313-002F	SC-700B-WDR-593	Water	9/4/2019 12:30:00 PM	9/4/2019	9/18/2019



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

**CALIFORNIA** | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

**NEVADA** | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 18-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-593
<b>Lab Order:</b>	N037313	<b>Collection Date:</b>	9/4/2019 12:25:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037313-001		

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

**SPECIFIC CONDUCTANCE**
**EPA 120.1**

RunID: <b>NV00922-WC_190905D</b>	QC Batch: <b>R136304</b>	PrepDate	Analyst: <b>LR</b>
Specific Conductance	6900	0.10	0.10
		umhos/cm	1
			9/5/2019 10:35 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**

**ANALYTICAL RESULTS**

Print Date: 18-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-593
<b>Lab Order:</b>	N037313	<b>Collection Date:</b>	9/4/2019 12:30:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037313-002		

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

**SPECIFIC CONDUCTANCE**

**EPA 120.1**

RunID: <b>NV00922-WC_190905D</b>	QC Batch: <b>R136304</b>	PrepDate	Analyst: <b>LR</b>
Specific Conductance	7100	0.10	0.10
		umhos/cm	1
			9/5/2019 10:35 AM

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



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037313  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 120.1\_WPGE**

Sample ID	<b>N037314-002CDUP</b>	SampType:	<b>DUP</b>	TestCode:	<b>120.1_WPGE</b>	Units:	<b>umhos/cm</b>	Prep Date:		RunNo:	<b>136304</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R136304</b>	TestNo:	<b>EPA 120.1</b>			Analysis Date:	<b>9/5/2019</b>	SeqNo:	<b>3503602</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Specific Conductance		7170.000		0.10						7180	0.139 2

**Qualifiers:**

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

**ASSET LABORATORIES**

ANALYTICAL SERVICES IN CALIFORNIA, NEVADA, AND IDAHO

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**
**Print Date:** 18-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-593
<b>Lab Order:</b>	N037313	<b>Collection Date:</b>	9/4/2019 12:25:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037313-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>TOTAL FILTERABLE RESIDUE</b>							
				<b>SM2540C</b>			
RunID: <b>NV00922-WC_190905G</b>	QC Batch: <b>75279</b>			PrepDate	<b>9/5/2019</b>	Analyst: <b>LR</b>	
Total Dissolved Solids (Residue, Filterable)	4200	50	50		mg/L	1	9/5/2019 01:08 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 18-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-593
<b>Lab Order:</b>	N037313	<b>Collection Date:</b>	9/4/2019 12:30:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037313-002		

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

**TOTAL FILTERABLE RESIDUE**
**SM2540C**

RunID: <b>NV00922-WC_190905G</b>	QC Batch: <b>75279</b>	PrepDate	<b>9/5/2019</b>	Analyst: <b>LR</b>
Total Dissolved Solids (Residue, Filterable)	4100	50	50	mg/L
			1	9/5/2019 01:08 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037313  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 160.1\_2540C\_W**

Sample ID	LCS-75279	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	9/5/2019	RunNo:	136321			
Client ID:	LCSW	Batch ID:	75279	TestNo:	SM2540C			Analysis Date:	9/5/2019	SeqNo:	3503994			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		969.000		10	1000	0		96.9	80	120				

Sample ID	MB-75279	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	9/5/2019	RunNo:	136321			
Client ID:	PBW	Batch ID:	75279	TestNo:	SM2540C			Analysis Date:	9/5/2019	SeqNo:	3503995			
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	N037314-002CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	9/5/2019	RunNo:	136321			
Client ID:	ZZZZZZ	Batch ID:	75279	TestNo:	SM2540C			Analysis Date:	9/5/2019	SeqNo:	3504000			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		4170.000		50							4235	1.55	5	

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 18-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-593
<b>Lab Order:</b>	N037313	<b>Collection Date:</b>	9/4/2019 12:25:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037313-001		

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

**TOTAL METALS BY ICP**
**EPA 200.7**

RunID: <b>NV00922-ICP2_190909D</b>	QC Batch: <b>75296</b>	PrepDate	<b>9/6/2019</b>	Analyst: <b>CEI</b>
Iron	ND	18	20	µg/L
				1
				9/10/2019 05:46 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

[CALIFORNIA](#) | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

[NEVADA](#) | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 18-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-593
<b>Lab Order:</b>	N037313	<b>Collection Date:</b>	9/4/2019 12:30:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037313-002		

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

**TOTAL METALS BY ICP**
**EPA 200.7**

RunID: <b>NV00922-ICP2_190909D</b>	QC Batch: <b>75296</b>	PrepDate	<b>9/6/2019</b>	Analyst: <b>CEI</b>
Aluminum	ND	40	50	µg/L
Boron	1100	74	100	µg/L
Iron	ND	18	20	µg/L

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037313  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 200.7\_WPGEPB**

Sample ID <b>MB-75296</b>	SampType: <b>MBLK</b>	TestCode: <b>200.7_WPGE</b>	Units: <b>µg/L</b>	Prep Date: <b>9/6/2019</b>	RunNo: <b>136385</b>
Client ID: <b>PBW</b>	Batch ID: <b>75296</b>	TestNo: <b>EPA 200.7</b>		Analysis Date: <b>9/10/2019</b>	SeqNo: <b>3507451</b>
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 <b>LCS1-75296</b>	SampType: <b>LCS</b>	TestCode: <b>200.7_WPGE</b>	Units: <b>µg/L</b>	Prep Date: <b>9/6/2019</b>	RunNo: <b>136385</b>
Client ID: <b>LCSW</b>	Batch ID: <b>75296</b>	TestNo: <b>EPA 200.7</b>		Analysis Date: <b>9/10/2019</b>	SeqNo: <b>3507452</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum	10121.863	50	10000	0	101	85	115			
Boron	5013.832	100	5000	0	100	85	115			
Iron	105.063	20	100.0	0	105	85	115			

Sample ID <b>N037313-001C-MS1</b>	SampType: <b>MS</b>	TestCode: <b>200.7_WPGE</b>	Units: <b>µg/L</b>	Prep Date: <b>9/6/2019</b>	RunNo: <b>136385</b>
Client ID: <b>ZZZZZ</b>	Batch ID: <b>75296</b>	TestNo: <b>EPA 200.7</b>		Analysis Date: <b>9/10/2019</b>	SeqNo: <b>3507456</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum	9666.677	50	10000	0	96.7	75	125			
Boron	5745.337	100	5000	1067	93.6	75	125			
Iron	72.717	20	100.0	0	72.7	75	125			S

Sample ID <b>N037313-001C-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>200.7_WPGE</b>	Units: <b>µg/L</b>	Prep Date: <b>9/6/2019</b>	RunNo: <b>136385</b>
Client ID: <b>ZZZZZ</b>	Batch ID: <b>75296</b>	TestNo: <b>EPA 200.7</b>		Analysis Date: <b>9/10/2019</b>	SeqNo: <b>3507457</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum	9476.603	50	10000	0	94.8	75	125	9667	1.99	20	
Boron	5708.250	100	5000	1067	92.8	75	125	5745	0.648	20	
Iron	71.637	20	100.0	0	71.6	75	125	72.72	1.50	20	S

**Qualifiers:**

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


**ASSET LABORATORIES**  
ANALYTICAL QUALITY SYSTEMS FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

**CALIFORNIA** | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037313  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 200.7\_WPGEPPB**

Sample ID	<b>N037313-001C-PS</b>	SampType:	<b>PS</b>	TestCode:	<b>200.7_WPGE</b>	Units:	<b>µg/L</b>	Prep Date:		RunNo:	<b>136385</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>75296</b>	TestNo:	<b>EPA 200.7</b>			Analysis Date:	<b>9/10/2019</b>	SeqNo:	<b>3507455</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9800.224	50	10000	0	98.0	80	120				
Boron	5847.618	100	5000	1067	95.6	80	120				
Iron	72.730	20	100.0	0	72.7	80	120				S

**Qualifiers:**

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

**ASSET LABORATORIES**

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 18-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-593
<b>Lab Order:</b>	N037313	<b>Collection Date:</b>	9/4/2019 12:25:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037313-001		

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

**TOTAL METALS BY ICPMS**
**EPA 200.8**

RunID: <b>NV00922-ICP7_190909B</b>	QC Batch: <b>75309</b>	PrepDate	<b>9/9/2019</b>	Analyst: <b>CEI</b>
Manganese	ND	0.26	0.50	µg/L
				1
				9/10/2019 12:41 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

[CALIFORNIA](#) | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

[NEVADA](#) | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 18-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-593
<b>Lab Order:</b>	N037313	<b>Collection Date:</b>	9/4/2019 12:30:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037313-002		

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

**TOTAL METALS BY ICPMS**
**EPA 200.8**

RunID: <b>NV00922-ICP7_190909B</b>	QC Batch: <b>75309</b>	PrepDate	<b>9/9/2019</b>	Analyst: <b>CEI</b>
Antimony	ND	0.16	0.50	µg/L
Arsenic	ND	0.081	0.10	µg/L
Barium	19	0.15	1.0	µg/L
Copper	ND	0.55	1.0	µg/L
Lead	ND	0.13	1.0	µg/L
Manganese	ND	0.26	0.50	µg/L
Molybdenum	23	0.21	0.50	µg/L
Nickel	1.5	0.26	1.0	µg/L
Zinc	ND	2.3	10	µg/L

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037313  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 200.8\_W**

Sample ID	MB-75309	SampType:	MBLK	TestCode:	200.8_W	Units:	µg/L	Prep Date:	9/9/2019	RunNo:	136391		
Client ID:	PBW	Batch ID:	75309	TestNo:	EPA 200.8			Analysis Date:	9/9/2019	SeqNo:	3508171		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Copper	0.673	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	ND	1.0									
Zinc	ND	10									

Sample ID	LCS-75309	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	9/9/2019	RunNo:	136391		
Client ID:	LCSW	Batch ID:	75309	TestNo:	EPA 200.8			Analysis Date:	9/9/2019	SeqNo:	3508172		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	10.865	0.50	10.00	0	109	85	115				
Arsenic	10.290	0.10	10.00	0	103	85	115				
Barium	10.058	1.0	10.00	0	101	85	115				
Copper	10.606	1.0	10.00	0	106	85	115				
Lead	10.270	1.0	10.00	0	103	85	115				
Manganese	101.931	0.50	100.0	0	102	85	115				
Molybdenum	10.156	0.50	10.00	0	102	85	115				
Nickel	10.350	1.0	10.00	0	104	85	115				
Zinc	9.078	10	10.00	0	90.8	85	115				

Sample ID	N037355-001A-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	9/9/2019	RunNo:	136391		
Client ID:	ZZZZZZ	Batch ID:	75309	TestNo:	EPA 200.8			Analysis Date:	9/10/2019	SeqNo:	3508178		
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		

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037313  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.8\_W

Sample ID	N037355-001A-MS	SampType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 9/9/2019				RunNo: 136391		
Client ID:	ZZZZZZ	Batch ID: 75309	TestNo: EPA 200.8	Analysis Date: 9/10/2019				SeqNo: 3508178			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.401	0.50	10.00	0.2899	111	75	125				
Arsenic	13.621	0.10	10.00	3.535	101	75	125				
Barium	130.977	1.0	10.00	130.2	7.65	75	125				S
Copper	7.650	1.0	10.00	0	76.5	75	125				
Lead	10.585	1.0	10.00	0.3958	102	75	125				
Molybdenum	52.635	0.50	10.00	43.71	89.2	75	125				
Nickel	10.373	1.0	10.00	1.912	84.6	75	125				
Zinc	12.435	10	10.00	3.504	89.3	75	125				

Sample ID	N037355-001A-MS	SampType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 9/9/2019	RunNo: 136391					
Client ID: ZZZZZZ	Batch ID: 75309	TestNo: EPA 200.8	Analysis Date: 9/10/2019	SeqNo: 3508183							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	248.875	2.5	100.0	147.6	101	75	125				

Sample ID	N037355-001A-MSD	SampType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 9/9/2019				RunNo: 136391		
Client ID:	ZZZZZZ	Batch ID: 75309	TestNo: EPA 200.8	Analysis Date: 9/10/2019				SeqNo: 3508184			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.465	0.50	10.00	0.2899	112	75	125	11.40	0.560	20	S
Arsenic	13.937	0.10	10.00	3.535	104	75	125	13.62	2.29	20	
Barium	130.914	1.0	10.00	130.2	7.03	75	125	131.0	0.0476	20	
Copper	7.733	1.0	10.00	0	77.3	75	125	7.650	1.08	20	
Lead	10.615	1.0	10.00	0.3958	102	75	125	10.58	0.291	20	
Molybdenum	52.501	0.50	10.00	43.71	87.9	75	125	52.63	0.254	20	
Nickel	10.571	1.0	10.00	1.912	86.6	75	125	10.37	1.89	20	
Zinc	13.130	10	10.00	3.504	96.3	75	125	12.44	5.44	20	

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037313  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.8\_W

Sample ID	N037355-001A-MSD	SampType:	MSD	TestCode:	200.8_W	Units:	µg/L	Prep Date:	9/9/2019	RunNo:	136391		
Client ID:	ZZZZZZ	Batch ID:	75309	TestNo:	EPA 200.8			Analysis Date:	9/10/2019	SeqNo:	3508185		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese		247.448		2.5	100.0	147.6	99.8	75	125	248.9	0.575	20	

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"



CLIENT: CH2M HILL  
 Work Order: N037313  
 Project: PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8\_W

Sample ID	N037355-001A-PS	SampType:	PS	TestCode:	200.8_W	Units:	µg/L	Prep Date:		RunNo:	136391
Client ID:	ZZZZZZ	Batch ID:	75309	TestNo:	EPA 200.8			Analysis Date:	9/9/2019	SeqNo:	3508176
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.318	0.50	10.00	0.2899	110	80	120				
Arsenic	13.837	0.10	10.00	3.535	103	80	120				
Barium	129.617	1.0	10.00	130.2	-5.94	80	120				S
Copper	7.366	1.0	10.00	0	73.7	80	120				S
Lead	10.449	1.0	10.00	0.3958	101	80	120				
Molybdenum	52.330	0.50	10.00	43.71	86.2	80	120				
Nickel	10.296	1.0	10.00	1.912	83.8	80	120				
Zinc	12.285	10	10.00	3.504	87.8	80	120				

Sample ID	N037355-001A-PS	SampType:	PS	TestCode:	200.8_W	Units:	µg/L	Prep Date:		RunNo:	136391
Client ID:	ZZZZZZ	Batch ID:	75309	TestNo:	EPA 200.8			Analysis Date:	9/9/2019	SeqNo:	3508177
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	248.684	2.5	100.0	147.6	101	80	120				

## Qualifiers:

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



ASSET LABORATORIES

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 18-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-100B-WDR-593
<b>Lab Order:</b>	N037313	<b>Collection Date:</b>	9/4/2019 12:25:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037313-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
				EPA 218.6			
RunID: NV00922-IC7_190911A	QC Batch: R136400			PrepDate	Analyst: HG		
Hexavalent Chromium	440	1.7	10	µg/L	50	9/11/2019 02:26 PM	
TOTAL METALS BY ICPMS							
				EPA 200.8			
RunID: NV00922-ICP7_190909B	QC Batch: 75309			PrepDate	9/9/2019	Analyst: CEI	
Chromium	450	0.65	5.0	µg/L	5	9/10/2019 12:47 AM	

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 18-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-593
<b>Lab Order:</b>	N037313	<b>Collection Date:</b>	9/4/2019 12:30:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037313-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>HEXAVALENT CHROMIUM BY IC</b>							
<b>EPA 218.6</b>							
RunID: NV00922-IC7_190911A	QC Batch: R136400			PrepDate		Analyst: HG	
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	9/11/2019 12:57 PM
<b>TOTAL METALS BY ICPMS</b>							
<b>EPA 200.8</b>							
RunID: NV00922-ICP7_190909B	QC Batch: 75309			PrepDate	9/9/2019	Analyst: CEI	
Chromium	ND	0.13	1.0		µg/L	1	9/10/2019 12:52 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

CLIENT: CH2M HILL  
 Work Order: N037313  
 Project: PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8\_W\_CRPGE

Sample ID	MB-75309	SampType:	MBLK	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	9/9/2019	RunNo:	136391			
Client ID:	PBW	Batch ID:	75309	TestNo:	EPA 200.8			Analysis Date:	9/9/2019	SeqNo:	3508042			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		ND		1.0										

Sample ID	LCS-75309	SampType:	LCS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	9/9/2019	RunNo:	136391			
Client ID:	LCSW	Batch ID:	75309	TestNo:	EPA 200.8			Analysis Date:	9/9/2019	SeqNo:	3508043			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		10.281		1.0	10.00	0		103	85	115				

Sample ID	N037355-001A-MS	SampType:	MS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	9/9/2019	RunNo:	136391			
Client ID:	ZZZZZZ	Batch ID:	75309	TestNo:	EPA 200.8			Analysis Date:	9/10/2019	SeqNo:	3508049			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		11.303		1.0	10.00	1.842		94.6	75	125				

Sample ID	N037355-001A-MSD	SampType:	MSD	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	9/9/2019	RunNo:	136391			
Client ID:	ZZZZZZ	Batch ID:	75309	TestNo:	EPA 200.8			Analysis Date:	9/10/2019	SeqNo:	3508055			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		11.392		1.0	10.00	1.842		95.5	75	125	11.30	0.781	20	

## Qualifiers:

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



ASSET LABORATORIES

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037313  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 218.6\_WU\_PGE

Sample ID	MB-R136400	SampType:	MBLK	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	136400		
Client ID:	PBW	Batch ID:	R136400	TestNo:	EPA 218.6			Analysis Date:	9/11/2019	SeqNo:	3509908		
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-R136400	SampType:	LCS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	136400		
Client ID:	LCSW	Batch ID:	R136400	TestNo:	EPA 218.6			Analysis Date:	9/11/2019	SeqNo:	3509909		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 4.948 0.20 5.000 0 99.0 90 110

Sample ID	N037403-001AMS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	136400		
Client ID:	ZZZZZZ	Batch ID:	R136400	TestNo:	EPA 218.6			Analysis Date:	9/11/2019	SeqNo:	3509910		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 4.697 1.0 5.000 0 93.9 90 110

Sample ID	N037405-001AMS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	136400		
Client ID:	ZZZZZZ	Batch ID:	R136400	TestNo:	EPA 218.6			Analysis Date:	9/11/2019	SeqNo:	3509911		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 4.901 1.0 5.000 0 98.0 90 110

Sample ID	N037403-001AMSD	SampType: MSD	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 136400					
Client ID:	ZZZZZZ	Batch ID: R136400	TestNo: EPA 218.6		Analysis Date: 9/11/2019	SeqNo: 3509913					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 4.961 1.0 5.000 0 99.2 90 110 4.697 5.47 20

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037313  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 218.6\_WU\_PGE**

Sample ID	N037405-001ADUP	SampType:	DUP	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	136400		
Client ID:	ZZZZZZ	Batch ID:	R136400	TestNo:	EPA 218.6			Analysis Date:	9/11/2019	SeqNo:	3509917		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	ND	1.0						0	0	20	
---------------------	----	-----	--	--	--	--	--	---	---	----	--

Sample ID	N037313-002CMS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	136400		
Client ID:	ZZZZZZ	Batch ID:	R136400	TestNo:	EPA 218.6			Analysis Date:	9/11/2019	SeqNo:	3509919		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	1.100	0.20	1.000	0.07670	102	90	110				
---------------------	-------	------	-------	---------	-----	----	-----	--	--	--	--

Sample ID	N037313-001BMS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	136400		
Client ID:	ZZZZZZ	Batch ID:	R136400	TestNo:	EPA 218.6			Analysis Date:	9/11/2019	SeqNo:	3509923		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	692.960	10	250.0	440.3	101	90	110				
---------------------	---------	----	-------	-------	-----	----	-----	--	--	--	--

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

# ASSET Laboratories

# ANALYTICAL RESULTS

Print Date: 18-Sep-19

CLIENT:	CH2M HILL	Client Sample ID:	SC-100B-WDR-593
Lab Order:	N037313	Collection Date:	9/4/2019 12:25:00 PM
Project:	PG&E Topock, 680375CH.04.IM.OP.00	Matrix:	WATER
Lab ID:	N037313-001		

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

## TURBIDITY

## SM 2130B

RunID: NV00922-WC_190905E	QC Batch: R136305	PrepDate	Analyst: LR
Turbidity	0.28 0.10 0.10	NTU	1 9/5/2019 11:10 AM

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



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA | P:562.219.7435 F:562.219.7436  
11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
ELAP Cert 2921  
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691  
3151 W. Post Rd., Las Vegas, NV 89118  
ELAP Cert 2676 | NV Cert NV00922  
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 18-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-593
<b>Lab Order:</b>	N037313	<b>Collection Date:</b>	9/4/2019 12:30:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037313-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
<b>TURBIDITY</b>							
<b>SM 2130B</b>							
RunID: <b>NV00922-WC_190905E</b>	QC Batch: <b>R136305</b>		PrepDate		Analyst: <b>LR</b>		
Turbidity	0.21	0.10	0.10		NTU	1	9/5/2019 11:10 AM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

[CALIFORNIA](#) | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

[NEVADA](#) | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046



**CLIENT:** CH2M HILL  
**Work Order:** N037313  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 2130\_W**

Sample ID	MB-R136305	SampType:	MBLK	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	136305		
Client ID:	PBW	Batch ID:	R136305	TestNo:	SM 2130B			Analysis Date:	9/5/2019	SeqNo:	3503603		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity		ND		0.10									

Sample ID	N037313-001ADUP	SampType:	DUP	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	136305		
Client ID:	ZZZZZZ	Batch ID:	R136305	TestNo:	SM 2130B			Analysis Date:	9/5/2019	SeqNo:	3503608		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity		0.270		0.10						0.2800	3.64	30	

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 18-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-593
<b>Lab Order:</b>	N037313	<b>Collection Date:</b>	9/4/2019 12:30:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037313-002		

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

**ANIONS BY ION CHROMATOGRAPHY**
**EPA 300.0**

RunID: NV00922-IC8_190910B	QC Batch: R136413	PrepDate	Analyst: HG
Fluoride	2.4 0.048	0.50	mg/L
			5 9/10/2019 01:27 PM

**ANIONS BY ION CHROMATOGRAPHY**
**EPA 300.0**

RunID: NV00922-IC8_190910B	QC Batch: R136413	PrepDate	Analyst: HG
Sulfate	480 2.0	25	mg/L
			50 9/10/2019 03:41 PM

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

[CALIFORNIA](#) | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

[NEVADA](#) | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037313  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 300\_W\_FPGE**

Sample ID	MB-R136413_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	136413		
Client ID:	PBW	Batch ID:	R136413	TestNo:	EPA 300.0			Analysis Date:	9/10/2019	SeqNo:	3509601		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		ND		0.10									

Sample ID	LCS-R136413_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	136413		
Client ID:	LCSW	Batch ID:	R136413	TestNo:	EPA 300.0			Analysis Date:	9/10/2019	SeqNo:	3509602		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		1.275		0.10	1.250	0	102	90	110				

Sample ID	N037313-002BDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	136413		
Client ID:	ZZZZZZ	Batch ID:	R136413	TestNo:	EPA 300.0			Analysis Date:	9/10/2019	SeqNo:	3509606		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		2.612		0.50						2.414	7.84	20	

Sample ID	N037313-002BMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	136413		
Client ID:	ZZZZZZ	Batch ID:	R136413	TestNo:	EPA 300.0			Analysis Date:	9/10/2019	SeqNo:	3509607		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		8.617		0.50	6.250	2.414	99.2	80	120				

Sample ID	N037313-002BMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	136413		
Client ID:	ZZZZZZ	Batch ID:	R136413	TestNo:	EPA 300.0			Analysis Date:	9/10/2019	SeqNo:	3509608		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		8.668		0.50	6.250	2.414	100	80	120	8.616	0.590	20	

**Qualifiers:**

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

**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037313  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_SO4PGE

Sample ID	<b>MB-R136413_SO4</b>	SampType:	<b>MBLK</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>136413</b>
Client ID:	<b>PBW</b>	Batch ID:	<b>R136413</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>9/10/2019</b>	SeqNo:	<b>3509651</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate ND 0.50

Sample ID	<b>LCS-R136413_SO4</b>	SampType:	<b>LCS</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>136413</b>
Client ID:	<b>LCSW</b>	Batch ID:	<b>R136413</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>9/10/2019</b>	SeqNo:	<b>3509652</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 4.003 0.50 4.000 0 100 90 110

Sample ID	<b>N037225-001BMS</b>	SampType:	<b>MS</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>136413</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R136413</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>9/10/2019</b>	SeqNo:	<b>3509656</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 241.944 10 80.00 162.0 100 80 120

Sample ID	<b>N037225-001BMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>136413</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R136413</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>9/10/2019</b>	SeqNo:	<b>3509657</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 242.666 10 80.00 162.0 101 80 120 241.9 0.298 20

Sample ID	<b>N037314-002CDUP</b>	SampType:	<b>DUP</b>	TestCode:	<b>300_W_SO4P</b>	Units:	<b>mg/L</b>	Prep Date:		RunNo:	<b>136413</b>
Client ID:	<b>ZZZZZZ</b>	Batch ID:	<b>R136413</b>	TestNo:	<b>EPA 300.0</b>			Analysis Date:	<b>9/10/2019</b>	SeqNo:	<b>3509660</b>
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 482.865 25 480.5 0.496 20

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037313  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W\_SO4PGE

Sample ID	N037313-002BMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	136413		
Client ID:	ZZZZZZ	Batch ID:	R136413	TestNo:	EPA 300.0			Analysis Date:	9/10/2019	SeqNo:	3509662		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		675.005		25	200.0	478.5	98.3	80	120				

### Qualifiers:

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



**ASSET LABORATORIES**

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**ASSET Laboratories**
**ANALYTICAL RESULTS**

Print Date: 18-Sep-19

<b>CLIENT:</b>	CH2M HILL	<b>Client Sample ID:</b>	SC-700B-WDR-593
<b>Lab Order:</b>	N037313	<b>Collection Date:</b>	9/4/2019 12:30:00 PM
<b>Project:</b>	PG&E Topock, 680375CH.04.IM.OP.00	<b>Matrix:</b>	WATER
<b>Lab ID:</b>	N037313-002		

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

**NITRATE/NITRITE-N BY CADMIUM REDUCTION**
**SM4500-NO3F**

RunID: <b>NV00922-WC_190916F</b>	QC Batch: <b>R136491</b>	PrepDate	Analyst: <b>MB</b>
Nitrate/Nitrite as N	2.7 0.16	0.25 mg/L	5 9/16/2019

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


**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

**CALIFORNIA** | P:562.219.7435 F:562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

**NEVADA** | P:702.307.2659 F:702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

**CLIENT:** CH2M HILL  
**Work Order:** N037313  
**Project:** PG&E Topock, 680375CH.04.IM.OP.00

**ANALYTICAL QC SUMMARY REPORT****TestCode: 4500N03F\_W**

Sample ID	MB-R136491	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	136491		
Client ID:	PBW	Batch ID:	R136491	TestNo:	SM4500-NO3			Analysis Date:	9/16/2019	SeqNo:	3513045		
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-R136491	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	136491		
Client ID:	LCSW	Batch ID:	R136491	TestNo:	SM4500-NO3			Analysis Date:	9/16/2019	SeqNo:	3513046		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		0.556		0.050	0.5000	0	111	85	115				

Sample ID	N037148-012EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	136491		
Client ID:	ZZZZZZ	Batch ID:	R136491	TestNo:	SM4500-NO3			Analysis Date:	9/16/2019	SeqNo:	3513048		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		0.331		0.050						0.3220	2.73	20	

Sample ID	N037176-004BMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	136491		
Client ID:	ZZZZZZ	Batch ID:	R136491	TestNo:	SM4500-NO3			Analysis Date:	9/16/2019	SeqNo:	3513050		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		24.435		2.5	25.00	0	97.7	75	125				

Sample ID	N037176-004BMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	136491		
Client ID:	ZZZZZZ	Batch ID:	R136491	TestNo:	SM4500-NO3			Analysis Date:	9/16/2019	SeqNo:	3513051		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N		26.250		2.5	25.00	0	105	75	125	24.44	7.16	20	

**Qualifiers:**

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



**ASSET LABORATORIES**  
ANALYTICAL QUALITY ASSURANCE

CALIFORNIA | P: 562.219.7435 F: 562.219.7436  
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703  
 ELAP Cert 2921  
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691  
 3151 W. Post Rd., Las Vegas, NV 89118  
 ELAP Cert 2676 | NV Cert NV00922  
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"









**F 1**

**CH2MHILL**

## CHAIN OF CUSTODY RECORD

Project Name PG&E Topock			Container:										Number of Containers	COMMENTS
Location PG&E Topock			Preservatives:											
Project Number 680375CH.04.IM.OP.00			Filtered:											
Project Manager Scott O'Donnell			Holding Time:											
Sample Manager Shawn Duffy														
Task Order														
Project IM3PLANT-ARAR-WDR-591														
Turnaround Time 10 Days														
Shipping Date:														
COC Number: <del>594</del> 593														
DATE	TIME	Matrix	1 Liter Poly	1 Liter Poly	1 Liter Poly	250 ml Poly	1 Liter Poly	1 Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly			
SC-100B-WDR- <del>594</del> 593	9-4-19	12:25	Water			X	X		X		X	N037313-01	3	PH = 7.21
SC-700B-WDR- <del>594</del> 593	9-4-19	12:30	Water	X	X	X	X	X	X		X	-02	4	PH = 7.18
TOTAL NUMBER OF CONTAINERS												7		

Approved by		Signatures	Date/Time	9-4-19 11:30	<b>Shipping Details</b>  <b>Method of Shipment:</b> FedEx  <b>On Ice:</b> yes / no  <b>Airbill No:</b>  <b>Lab Name:</b> ASSET Laboratories  <b>Lab Phone:</b> (702) 307-2659	<b>ATTN:</b>  <b>Sample Custody</b>  and  <b>Marlon Cartin</b>	<b>Special Instructions:</b>  SC-700B Total metals List: Cr,Al,Sb,As,Ba,B,Cu,Pb,Mn,Mo,Ni,Fe,Zn  <b>Report Copy to</b>  Doug Scott (970) 731-0636
Sampled by			9-4-19 12:30				
Relinquished by			9-4-19 16:00				
Received by			9-4-19 16:00				
Relinquished by			9-4-19 18:41				
Received by			9-4-19 18:41				

3.8°C 30#2 v2b



## 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: 9/4/2019 Workorder: N037313  
 Rep sample Temp (Deg C): 3.8 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
2. Custody seals intact, signed, dated on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
3. Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
4. Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
5. Sampler's name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
6. Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
7. Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
8. Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
9. Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
10. Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
11. All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
13. Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>
15. Did the bottle labels indicate correct preservatives used?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
16. Were there Non-Conformance issues at login?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Was Client notified?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

Comments: Samples for Cr 6+ were lab filtered and then preserved with Ammonium buffer.  
 Samples for Total Metals were lab preserved with HNO3 and for Ammonia/NO3- with H2SO4.

Checklist Completed By: YR  9/5/2019

Reviewed By:  LG 091019



## ASSET Laboratories

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

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

**QC Level: Level IV**

**Subcontractor:**

Enthalpy Analytical  
2323 5th St  
Berkeley, CA 94710

TEL: (510) 486-0900  
FAX:  
Acct #:

Field Sampler: SIGNED

**05-Sep-19**

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3D		
N037313-002A / SC-700B-WDR-593	Water	9/4/2019 12:30:00 PM	32OZP	1		

**General Comments:**

Please email sample receipt acknowledgement to the PM.

Please cc [andrea.gallardo@assetlaboratories.com](mailto:andrea.gallardo@assetlaboratories.com)

Please use PO#:N37313A Please email Invoices and Account Receivable Statements to [elvira@assetlaboratories.com](mailto:elvira@assetlaboratories.com). For questions, call Marlon at (702)-307-2659. Please e-mail results to [reports.lv@assetlaboratories.com](mailto:reports.lv@assetlaboratories.com) by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. EDD Requirement Labspec7 edata.

GSO #: 546093201

	<b>Date/Time</b>		<b>Date/Time</b>
Relinquished by: <u>YRJ</u>	9/5/2019 17:00	Received by: _____	
Relinquished by: _____		Received by: _____	

## List of Analysts

### ASSET Laboratories Work Order: N037313

NAME	TEST METHOD
Claire Ignacio	EPA 200.7, EPA 200.8
Lilia Ramit	EPA 120.1, SM 2540C, SM 2130B
Hanah Glodoviza	EPA 218.6, EPA 300.0
Nancy Sibucan	SM 4500-NO3F



**ASSET LABORATORIES**  
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA  
11110 Artesia Blvd., Ste B, 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"

# 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.

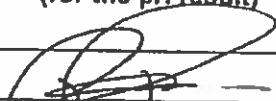
Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover Sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
1 SC-100B-588	5-9-19	1400	5-9-19	1407	HQ440D	5-9-19	00:00	-56.84	Ryan Phelps	7.20
Notes:										
2 SC-700B-588	5-9-19	13:55	5-9-19	1405	HQ440D	5-9-19	00:00	-56.84	Ryan Phelps	7.09
Notes:										
3 SC-100B-589	6-5-19	0700	6-5-19	0710	HQ440D	6-5-19	00:00	-54.61	Ryan Phelps	7.24
Notes:										
4 SC-700B-589	6-5-19	0705	6-5-19	0715	HQ440D	6-5-19	00:00	-54.61	Ryan Phelps	7.14
Notes:										
5 SC-100B	7-3-19	11:20	7-3-19	11:24	HQ440D	7-3-19	00:00	-58.07	Ryan Phelps	7.49
Notes:										
6 SC-700B	7-3-19	11:10	7-3-19	11:14	HQ440D	7-3-19	00:00	-58.07	Ryan Phelps	7.07
Notes:										
7 SC-701	7-3-19	11:13	7-3-19	11:19	HQ440D	7-3-19	00:00	-58.07	Ryan Phelps	7.83
Notes:										

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


# Analytical Bench Log Book

## WDR pH Results


If the on site laboratory pH result for T-700 tank is less than pH 6.6 or greater than pH 8.3 the Injection well should be shut down until the problem is fixed.

Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover Sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
1 SC-100B-591	8-6-19	10:35	8-6-19	10:45	HQ440D	8-6-19	0000	-55.37		7.04


Notes:

2 SC-700B-591	8-6-19	10:30	8-6-19	10:40	HQ440D	8-6-19	0000	-55.37		7.04
---------------	--------	-------	--------	-------	--------	--------	------	--------	---	------

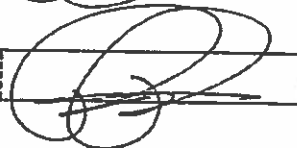
Notes:

3 SC-700B-592	8-16-19	13:05	8-16-19	13:11	HQ440D	8-6-19	12:45	-55.16		7.69
---------------	---------	-------	---------	-------	--------	--------	-------	--------	---	------

Notes:

4 SC-100B-593	9-4-19	12:25	9-4-19	12:35	HQ440D	9-4-19	0000	-54.08		7.21
---------------	--------	-------	--------	-------	--------	--------	------	--------	---	------

Notes:

5 SC-700B-593	9-4-19	12:30	9-4-19	12:34	HQ440D	9-4-19	0000	-54.08		7.18
---------------	--------	-------	--------	-------	--------	--------	------	--------	--	------

Notes:

6										
---	--	--	--	--	--	--	--	--	--	--

Notes:

7										
---	--	--	--	--	--	--	--	--	--	--

Notes:

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