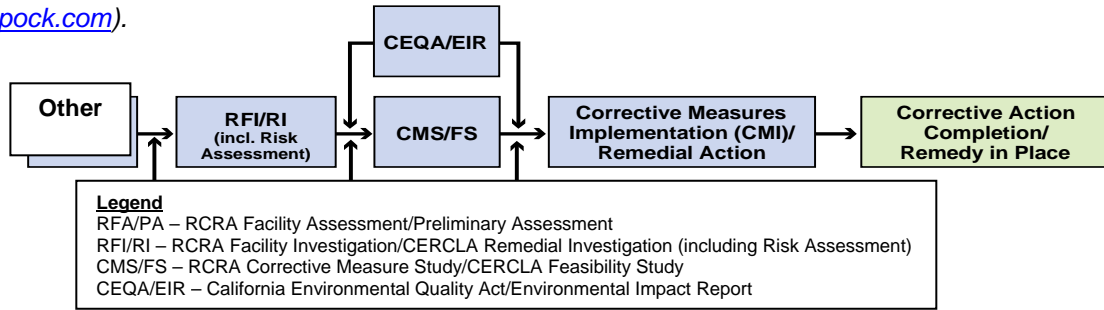


Topock Project Executive Abstract

<p>Document Title:</p> <p>Topock IM-3 Combined Fourth Quarter 2011 Monitoring Report, Jul-Dec 2011 Semiannual, and Jan-Dec 2011 Annual Operation and Maintenance Report</p> <p>Submitting Agency/ Authored by: 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: January 13, 2012</p> <p>Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other)</p> <p>PG&E</p> <p>Document ID Number:</p> <p>PGE20120113B</p>
<p>Priority Status: <input type="checkbox"/> HIGH <input type="checkbox"/> MED <input checked="" type="checkbox"/> LOW</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 & 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 waste discharge ARARs 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 Fourth Quarter 2011 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. This report also covers the IM-3 operation and maintenance activities during the July – December 2011 semiannual and January – December 2011 annual periods.</p> <p>Written by: PG&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 Fourth Quarter 2011 Monitoring Report, Jul-Dec 2011 Semiannual, and Jan-Dec 2011 Annual Operation and Maintenance Report is related to the Interim Measure. PG&E is currently operating the IM-3 groundwater treatment system as authorized by the U.S. Department of the Interior (DOI) Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) as documented in Attachment A to the Letter Agreement issued July 26, 2011 from the Colorado River Basin Regional Water Quality Control Board (Regional Water Board) to DOI, and the subsequent Letter of Concurrence issued August 18, 2011 from DOI to the Regional Water Board.</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).





**Pacific Gas and
Electric Company**

Curt Russell
Topock Site Manager
GT&D Remediation

Topock Compressor Station
145453 National Trails Hwy
Needles, CA 92363

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

760.326.5582
Fax: 760.326.5542
Email: gcr4@pge.com

January 13, 2012

Pamela S. Innis
Topock Remedial Project Manager
U.S. Department of the Interior
Office of Environmental Policy and Compliance
P.O Box 2507 (D-108)
Denver Federal Center, Building 56
Denver, CO 80225-0007

Robert Perdue
Executive Officer
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 Combined Fourth Quarter 2011 Monitoring and
Semiannual July - December 2011 / Annual January - December 2011
Operation and Maintenance Report
PG&E Topock Compressor Station, Needles, California
Interim Measure No. 3 Groundwater Treatment System
(Document ID: PGE20120113B)**

Dear Ms. Innis and Mr. Perdue:

Enclosed is the Combined Fourth Quarter 2011 Monitoring and Semiannual July - December 2011 / Annual January - December 2011 Operation and Maintenance Report for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station, Interim Measure (IM) No. 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

Ms. Pamela S. Innis/DOI and Mr. Robert Perdue/Regional Water Board

January 13, 2012

Page 2

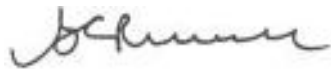
August 18, 2011 from DOI to the Regional Water Board. Quarterly monitoring reports are required to be submitted by the fifteenth day of the month following the end of the quarter.

Since initial operation in July 2005, the IM-3 groundwater treatment system has treated approximately 459,000,000 gallons of water through December 31, 2011.

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,



Curt Russell
Topock Site Manager

Enclosures:

Topock IM-3 Combined Fourth Quarter 2011 Monitoring and Semiannual July - December 2011 /
Annual January - December 2011 Operation and Maintenance Report

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

**Combined Fourth Quarter 2011 Monitoring
and Semiannual July - December 2011 /
Annual January - December 2011
Operation and Maintenance Report**

**Interim Measure No. 3 Groundwater
Treatment System**

Document ID: PGE20120113B

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

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

on behalf of
Pacific Gas and Electric Company

January 13, 2012

CH2MHILL
155 Grand Avenue, Suite 800
Oakland, CA 94612

**Combined Fourth Quarter 2011 Monitoring and
Semiannual July - December 2011/ Annual January - December 2011
Operation and Maintenance 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

January 13, 2012

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



Dennis Fink,
Project Engineer

Contents

	Page
1.0 Introduction.....	1-1
2.0 Sampling Station Locations.....	2-1
3.0 Description of Activities	3-1
3.1 Groundwater Treatment System.....	3-1
3.2 Groundwater Treatment System Flow Rates for Fourth Quarter 2011	3-2
3.3 Sampling and Analytical Procedures	3-3
4.0 Analytical Results.....	4-1
5.0 Semiannual Operation and Maintenance.....	5-1
5.1 Flowmeter Calibration Records.....	5-1
5.2 Volumes of Groundwater Treated	5-2
5.3 Residual Solids Generated (Sludge)	5-2
5.4 Reverse Osmosis Concentrate Generated	5-3
5.5 Summary of ARARs Compliance.....	5-3
5.6 Operation and Maintenance - Required Shutdowns	5-3
5.7 Treatment Plant Modifications.....	5-3
6.0 Conclusions	6-1
7.0 Certification.....	7-1

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

Appendixes

- A Semiannual Operations and Maintenance Log, July 1, 2011 through December 31, 2011
- B Daily Volumes of Groundwater Treated
- C Flowmeter Calibration Records
- D Fourth Quarter 2011 Laboratory Analytical Reports

Acronyms and Abbreviations

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

1.0 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 in the Colorado River floodplain and management of extracted groundwater. The groundwater extraction, treatment, and injection systems are collectively referred to as Interim Measure No. 3 (IM-3). Currently, the IM-3 facilities include a groundwater extraction system, conveyance piping, a groundwater treatment plant, and an injection well field for the discharge of the treated groundwater. Figure 1 shows the location of the IM-3 extraction, conveyance, treatment, and injection facilities. (All figures and tables are provided 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 California Regional Water Quality Control Board, Colorado River Basin (Regional Water Board) Waste Discharge Requirements (WDR) 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).

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). The WDR Order No. R7-2006-0060 expired on September 20, 2011 and was replaced by DOI enforcement of the 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 the IM-3 groundwater treatment system monitoring activities during the Fourth Quarter 2011; the operation and maintenance activities during the July 1, 2011 to December 31, 2011 semiannual period (Third and Fourth Quarters 2011); and (by reference; see Section 3.0) the operation and maintenance activities during the January 1, 2011 to June 30, 2011 semiannual period (First and Second Quarters 2011). 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.

2.0 Sampling Station Locations

Table 1 lists the locations of sampling stations. 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.

3.0 Description of Activities

The treatment system was initially operated between July 25 and July 28, 2005 for the 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. Since initial operation in July 2005, the IM-3 groundwater treatment system has treated approximately 459,000,000 gallons of water and removed 5,039 pounds of total chromium through December 31, 2011.

This report describes Fourth Quarter 2011 monitoring activities and the July 1, 2011 through December 31, 2011 (Third and Fourth Quarters) operation and maintenance activities related to the IM-3 groundwater treatment system. IM-3 monitoring activities from January 1, 2011 through September 30, 2011 (First, Second, and Third Quarter monitoring) were presented in the following monitoring reports:

- *IM No. 3 First Quarter 2011 Monitoring Report for Groundwater Treatment System Waste Discharge Requirements Order No. R7-2006-0060*, submitted to the Regional Water Board April 15, 2011.
- *IM No. 3 Second Quarter 2011 Monitoring / Semiannual January 1- June 30, 2011 Operation and Maintenance Report for Groundwater Treatment System Waste Discharge Requirements Order No. R7-2006-0060*, submitted to the Regional Water Board July 15, 2011.
- *IM-3 Third Quarter 2011 Monitoring Report*, submitted to the DOI and Regional Water Board October 14, 2011.

The IM-3 operation and maintenance activities from January 1, 2011 through June 30, 2011 (First and Second Quarter 2011 operation and maintenance) were reported in the Second Quarter 2011 Monitoring/Semiannual Operation and Maintenance Report listed above; these operation and maintenance data are incorporated in the present report by reference. The present report therefore also serves as the annual January through December 2011 Operation and Maintenance Report for IM-3.

3.1 Groundwater Treatment System

The treatment system was initially operated between July 25 and July 28, 2005 for the WDR-mandated startup phase. Discharge to the injection wells was initiated July 31, 2005 after successfully completing the startup phase in accordance with Order 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.

Operation of the groundwater treatment system results in the following three effluent streams:

- **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, which occurs either when a sludge waste storage bin reaches capacity, or within 90 days of the start date for accumulation in the storage container, whichever occurs first.

3.2 Groundwater Treatment System Flow Rates for Fourth Quarter 2011

Downtime is defined as any periods when all extraction wells are not operating so that no groundwater is being extracted and piped into IM-3 as influent. Periods of planned and unplanned extraction system downtime (that together resulted in approximately 2.5 percent downtime during Fourth Quarter 2011) are summarized in the Semiannual Operations and Maintenance Log provided in Appendix A. The times shown are in Pacific Standard Time to be consistent with other data collected (e.g., water level data) at the site. Periods of planned and unplanned extraction system downtime during the months July 2011 – September 2011 are reported in the *IM-3 Third Quarter 2011 Monitoring Report, PG&E Topock Compressor Station, Needles, CA*, published October 14, 2011 and are provided in Appendix A of this report.

Data regarding daily volumes of groundwater treated and discharged are provided in Appendix B. The IM-3 groundwater treatment system flowmeter calibration records are included in Appendix C.

3.2.1 Treatment System Influent

During the Fourth Quarter 2011, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gallons per minute (gpm), excluding periods of planned and unplanned downtime. Extraction well TW-2S was not operated during Fourth Quarter 2011. Extraction well TW-2D was operated for a short period during December 2011. The operational run time for the IM groundwater extraction system (combined or individual pumping), by month, was approximately:

- 97.6 percent during October 2011
- 97.1 percent during November 2011
- 97.9 percent during December 2011

The Fourth Quarter 2011 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 IM-3 facility treated approximately 17,387,128 gallons of extracted groundwater during Fourth Quarter 2011.

In addition to extracted groundwater, during Fourth Quarter 2011 the IM-3 facility treated 35,535 gallons of water generated from the groundwater monitoring program and 28,000 gallons of injection well development water.

3.2.2 Effluent Streams

The treatment system effluent flow rate was measured by flow meters in the piping leading to injection wells IW-2 and IW-3 (Figure TP-PR-10-10-11) and in the piping running from the treated water tank T-700 to the injection wells (Figure TP-PR-10-10-04). The IM-3 facility injected 17,135,933 gallons of treatment system effluent during Fourth Quarter 2011. The monthly average flow rate to injection wells is shown in Table 2.

The reverse osmosis 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 generated 249,538 gallons of RO concentrate during Fourth Quarter 2011. The monthly average RO concentrate flow rate is shown in Table 2.

The sludge flow rate is measured by the size and weight of containers shipped offsite. Five sludge containers were shipped offsite from the IM-3 facility during Fourth Quarter 2011. The shipment dates and approximate weights are provided in Section 5.3.

3.3 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 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 Truesdail via courier under chain-of-custody documentation. The laboratories confirmed the samples were received in chilled condition upon arrival.

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 Fourth Quarter 2011, 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. The Fourth Quarter 2011 sample collection schedule is shown in Table 3.

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.

4.0 Analytical Results

The analytical results and laboratory reports for the IM-3 groundwater treatment system monitoring program between January 1, 2011 and June 30, 2011 were included in the First Quarter and Second Quarter Monitoring Reports submitted to the Regional Water Board. The analytical results and laboratory report between July 1, 2011 and September 30, 2011 were included in Third Quarter Monitoring Reports submitted to the DOI and Regional Water Board (see Section 3.0 for a complete listing of reports).

Laboratory reports for samples collected in Fourth Quarter 2011 were prepared by certified analytical laboratories, and are presented in Appendix D. The Fourth Quarter 2011 analytical results are presented in Tables 4, 5, 6, and 7:

- Influent analytical results are presented in Table 4.
- Effluent analytical results are presented in Table 5. There were no exceedances of effluent limitations during the reporting period.
- Reverse osmosis concentrate analytical results are presented in Table 6.
- Sludge analytical results are presented in Table 7.

The sludge is required to have an aquatic bioassay test annually. The aquatic bioassay test was conducted on a September 2011 sample, and the results were presented in the Third Quarter Monitoring Report submitted to the DOI and the Regional Water Board on October 14, 2011.

Table 8 identifies the following information for each analysis:

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

5.0 Semiannual Operation and Maintenance

This section includes the Semiannual Operation and Maintenance Report for the IM-3 groundwater treatment system for the period July 1, 2011 through December 31, 2011. The IM-3 operation and maintenance activities for January 1, 2011 through June 30, 2011 were reported in the Second Quarter 2011 Monitoring and Semiannual January 1- June 30, 2011 Operation and Maintenance Report, submitted July 15, 2011.

All operations and maintenance records are maintained at the facility, including site inspection forms, process monitoring records, hazardous waste generator records (i.e., waste manifests), and self-monitoring reports. These records will be maintained onsite for a period of at least 5 years. Operational programmable logic controller data (flow rates, system alarms, process monitoring data, etc.) are maintained electronically via data historian software. Operations and maintenance records are also archived using maintenance software. The subsections below summarize the operations and maintenance activities during this semiannual reporting period.

5.1 Flowmeter Calibration Records

The IM-3 groundwater treatment system flowmeter calibration records are included in Appendix C. Flowmeter calibrations are performed in a timely manner consistent with the use, flow, material, and manufacturer recommendations. The following flowmeters are used at the plant to measure groundwater flow:

Location	Flowmeter Location ID	Current Flowmeter Serial No.	Date of Calibration	Date of Installation
Extraction well PE-1	FIT-103	6C037216000	7/15/11	12/13/11
Extraction well TW-3D	FIT-102	6C037116000	7/15/11	12/13/11
Extraction well TW-2D ^a	FIT-101	7700F216000	11/30/06	7/6/11
Extraction well TW-2S ^b	FIT-100	6A022016000	11/29/04	7/28/05
Injection well IW-02	FIT-1202	6C036F16000	8/6/10	1/5/11
Injection well IW-03	FIT-1203	6A022116000	8/6/10	12/15/10
Combined IW-02 and IW-03	FIT-700	7700C616000	7/25/11	12/13/11
Reverse osmosis concentrate	FIT-701	6C037316000	2/26/09	4/1/11

Notes:

^a TW-2D is a backup extraction well only operated for brief testing and sampling periods since January 2006.

^b TW-2S is a backup extraction well only operated for brief testing and sampling periods since October 2005.

5.2 Volumes of Groundwater Treated

Data regarding daily volumes of groundwater treated between July 1, 2011 and December 31, 2011 are provided in Appendix B. The daily volumes of groundwater treated from January 1, 2011 through June 30, 2011 were reported in the Second Quarter 2011 Monitoring and Semiannual January 1- June 30, 2011 Operation and Maintenance Report, submitted July 15, 2011.

Approximately 34,085,405 gallons of groundwater were extracted and treated between July 1, 2011 and December 31, 2011. Treatment of this water at the IM-3 facility is being performed in accordance with the conditions of ARARs.

Additionally, approximately 38,060 gallons of well purge water (generated during well development, monitoring well sampling, and/or aquifer testing) and 48,700 gallons of injection well re-development water were treated at the IM-3 facility during the July 1, 2011 through December 31, 2011 semiannual period.

A total of approximately 33,451,064 gallons of treated groundwater was injected back into the Alluvial Aquifer between July 1, 2011 and December 31, 2011.

5.3 Residual Solids Generated (Sludge)

During the July 1, 2011 through December 31, 2011 reporting period, nine containers of sludge were shipped offsite for disposal. The containers of sludge shipped offsite for disposal from January 1, 2011 through June 30, 2011 were reported in the Second Quarter 2011 Monitoring and Semiannual January 1- June 30, 2011 Operation and Maintenance Report, submitted July 15, 2011. The sludge was shipped to U.S. Ecology in Beatty, Nevada for disposal. A listing of each shipment during the July 1, 2011 through December 31, 2011 reporting period is provided below.

Date Sludge Bin Removed from Site	Approximate Quantity from Waste Manifests (cubic yards)	Approximate Wet Weight (lbs)	Type of Shipment
8/3/2011	8	16,020	non-RCRA hazardous waste
8/15/2011	8	13,640	non-RCRA hazardous waste
9/6/2011	8	10,380	non-RCRA hazardous waste
9/6/2011	8	10,360	non-RCRA hazardous waste
10/6/2011	8	20,360	non-RCRA hazardous waste
10/26/2011	8	14,380	non-RCRA hazardous waste
10/26/2011	8	15,140	non-RCRA hazardous waste
11/30/2011	8	10,380	non-RCRA hazardous waste
11/30/2011	8	14,420	non-RCRA hazardous waste

Notes:

The approximate wet weight is provided by the disposal facility based on full container weight less the empty container weight.

RCRA = Resource Conservation and Recovery Act.

5.4 Reverse Osmosis Concentrate Generated

Data regarding daily volumes of reverse osmosis concentrate generated are provided in Appendix B, as measured by flowmeter FIT-701 (Figures PR-10-03 and PR-10-04). From July 1, 2011 through December 31, 2011, approximately 525,628 gallons of RO concentrate were transported to Liquid Environmental Solutions in Phoenix, Arizona for disposal. The daily volumes of RO concentrate generated from January 1, 2011 through June 30, 2011 were reported in the Semiannual January 1- June 30, 2011 Operation and Maintenance Report, submitted July 15, 2011.

5.5 Summary of ARARs Compliance

No ARARs violations were identified during the July 1, 2011 through December 31, 2011 semiannual reporting period, nor during the January 1, 2011 through December 31, 2011 annual reporting period.

5.6 Operation and Maintenance – Required Shutdowns

Records of routine maintenance are kept onsite. The summary of operation or maintenance issues that required the groundwater extraction system to be shut down during the January 1, 2011 through June 30, 2011 period was reported in the Second Quarter 2011 Monitoring and Semiannual January 1- June 30, 2011 Operation and Maintenance Report, submitted July 15, 2011.

Appendix A contains a summary of the operation or maintenance issues that required the groundwater extraction system to be shut down during the July 1, 2011 through December 31, 2011 semiannual reporting period.

Activities during the Third Quarter 2011 included one extended shutdown. The extraction system downtime was 3 days and 11 hours, and occurred August 15 – 18, 2011, due to a planned plant outage for maintenance.

No extended shutdowns of the IM-3 extraction system occurred during the Fourth Quarter 2011.

5.7 Treatment Plant Modifications

No major IM-3 treatment plant modifications that affected the quality or quantity of treated effluent were performed during the January 1, 2011 through December 31, 2011 annual period.

6.0 Conclusions

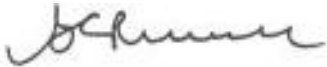
There were no exceedances of effluent limitations during the reporting period.

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.

7.0 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: January 13, 2012

Tables

TABLE 1
 Sampling Station Descriptions
Fourth Quarter 2011 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

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

Note:

= Sequential sample identification number at each sample station.

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

TABLE 2
 Flow Monitoring Results
Fourth Quarter 2011 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

Parameter	System Influent^{a,b} (gpm)	System Effluent^b (gpm)	Reverse Osmosis Concentrate^b (gpm)
October 2011 Average Monthly Flowrate	131.4	128.8	1.8
November 2011 Average Monthly Flowrate	131.5	129.7	1.8
December 2011 Average Monthly Flowrate	130.9	129.6	2.1

Notes:

gpm: gallons per minute

^a Extraction wells TW-3D and PE-1 were operated during the Fourth Quarter 2011. Extraction wells TW-2D and TW-2S were not operated during the Fourth Quarter 2011.

^b The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during the Fourth Quarter 2011 is approximately 0.6 percent.

TABLE 3
 Sample Collection Dates
Fourth Quarter 2011 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

Parameter	Sample Collection Dates	Results
Influent	October 4, 2011	See Table 4
	November 1, 2011	
	December 6, 2011	
Effluent	October 4, 2011	See Table 5
	October 11, 2011	
	October 18, 2011	
	October 26, 2011	
	November 1, 2011	
	November 8, 2011	
	November 16, 2011	
	November 22, 2011	
	November 28, 2011	
	December 6, 2011	
	December 13, 2011	
	December 20, 2011	
December 27, 2011		
Reverse Osmosis Concentrate	October 11, 2011	See Table 6
Sludge ^a	October 11, 2011	See Table 7

Notes:

^a Sludge samples analysis is required quarterly by composite.

TABLE 4

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
 Influent Monitoring Results ^a
 Fourth Quarter 2011 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Monthly																						
Sample ID	Date	TDS	Turbidity	Specific Conductance	Field ^c pH	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate (as N)	Nitrite (as N)	Sulfate	Iron	Zinc
		mg/L	NTU	µmhos/cm	pH units	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L
Analytes Units ^b	MDL	0.400	0.0140	0.0380	---	0.0980	1.40	2.80	0.0012	0.110	0.250	0.180	0.0015	0.110	0.0250	0.0980	0.250	0.270	0.0670	0.0550	0.00036	0.500	1.30	3.90
SC-100B-WDR-329	10/4/2011	4580	ND (0.100)	7850	7.2	887	847	ND (50.0)	ND (0.500)	ND (10.0)	4.60	26.9	1.07	ND (5.00)	2.45	ND (10.0)	7.60	20.8	ND (10.0)	3.11	ND (0.0050)	554	ND (20.0)	ND (10.0)
RL		125	0.100	2.00	---	1.00	10.5	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	50.0	20.0	10.0
SC-100B-WDR-333	11/1/2011	4460	0.169	7510	7.2	871	897	ND (50.0)	1.26	ND (10.0)	4.30	28.6	1.04	ND (5.00)	1.81	ND (10.0)	7.20	22.2	ND (10.0)	3.28	ND (0.0050)	595	ND (20.0)	ND (10.0)
RL		125	0.100	2.00	---	1.00	21.0	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	12.5	20.0	10.0
SC-100B-WDR-338	12/6/2011	4390	0.178	7750	7.2	920	910	ND (50.0)	ND (0.500)	ND (10.0)	3.70	28.0	1.08	ND (5.00)	1.50	ND (10.0)	7.20	20.0	ND (10.0)	3.35	ND (0.0050)	528	ND (20.0)	ND (10.0)
RL		250	0.100	2.00	---	1.00	21.0	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	25.0	20.0	10.0

NOTES:

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

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

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

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

TABLE 5
 Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
 Effluent Monitoring Results^a
 Fourth Quarter 2011 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Effluent Limits ^b	Ave. Monthly	NA	NA	NA	6.5-8.4	6.5-8.4	25	8	NA	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	6.5-8.4	50	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sampling Frequency	Weekly							Monthly																	
Analytes Units ^c	TDS	Turbidity	Specific Conductance	Field pH ^e	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate (as N)	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	mg/L	µg/L	µg/L		
MDL ^d	0.400	0.0140	0.0380	---	0.0980	0.0270	2.80	0.0012	0.110	0.250	0.180	0.0015	0.110	0.0250	0.0980	0.230	0.270	0.0670	0.0550	0.00036	1.00	1.30	3.90		
Sample ID	Date																								
SC-700B-WDR-329	10/4/2011	4260	ND (0.100)	7480	7.00	ND (1.00)	ND (1.00)	ND (50.0)	ND (0.500)	ND (10.0)	ND (1.00)	10.9	1.04	ND (5.00)	2.09	ND (10.0)	3.00	18.6	ND (10.0)	2.92	ND (0.0050)	501	ND (20.0)	ND (10.0)	
RL		125	0.100	2.00	---	1.00	1.00	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	25.0	20.0	10.0	
SC-700B-WDR-330	10/11/2011	4360	0.110	7630	7.00	1.30	ND (1.00)	---	---	---	---	---	---	---	---	---	2.00	---	---	---	---	---	---	---	
RL		125	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-331	10/18/2011	4300	ND (0.100)	7540	7.10	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	9.60	---	---	---	---	---	---	---	
RL		125	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-332	10/25/2011	4230	ND (0.100)	7390	7.00	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	7.90	---	---	---	---	---	---	---	
RL		125	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-333	11/1/2011	4340	ND (0.100)	7110	7.10	ND (1.00)	ND (1.00)	ND (50.0)	1.14	ND (10.0)	ND (1.00)	14.3	1.01	ND (5.00)	1.50	ND (10.0)	9.80	17.1	ND (10.0)	3.03	ND (0.0050)	519	ND (20.0)	35.3	
RL		125	0.100	2.00	---	1.00	1.00	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	50.0	20.0	10.0	
SC-700B-WDR-334	11/8/2011	4400	ND (0.100)	7250	7.00	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	6.50	---	---	---	---	---	---	---	
RL		125	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-335	11/15/2011	4150	ND (0.100)	7120	7.10	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	11.1	---	---	---	---	---	---	---	
RL		125	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-336	11/22/2011	4400	ND (0.100)	7030	7.00	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	4.10	---	---	---	---	---	---	---	
RL		125	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	2.00	---	---	---	---	---	---	---	
SC-700B-WDR-337	11/29/2011	4180	ND (0.100)	7120	7.00	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	12.9	---	---	---	---	---	---	---	
RL		125	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-338	12/6/2011	5120	ND (0.100)	7130	7.20	1.10	ND (1.00)	ND (50.0)	ND (0.500)	ND (10.0)	ND (1.00)	15.4	1.06	ND (5.00)	1.32	ND (10.0)	9.90	18.1	ND (10.0)	4.74	ND (0.0050)	477	ND (20.0)	ND (10.0)	
RL		250	0.100	2.00	---	1.00	1.00	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	25.0	20.0	10.0	
SC-700B-WDR-339	12/13/2011	4150	ND (0.100)	6990	7.00	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	7.50	---	---	---	---	---	---	---	
RL		125	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-340	12/20/2011	4280	ND (0.100)	7120	7.10	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	6.50	---	---	---	---	---	---	---	
RL		125	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-341	12/27/2011	4240	ND (0.100)	7160	7.10	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	5.70	---	---	---	---	---	---	---	
RL		125	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	

TABLE 5

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

Effluent Monitoring Results^a

Fourth Quarter 2011 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

NOTES:

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

- ^a Sampling location for all effluent samples is tap on pipe downstream from tank T-700 to injection wells (see attached P&ID TP-PR-10-10-04).
- ^b In addition to the listed effluent limits, the ARARs state that the effluent shall not contain heavy metals, chemicals, pesticides or other constituents in concentrations toxic to human health.
- ^c Units reported in this table are those units required in the ARARs.
- ^d MDL listed is the target MDL by analysis method; however, the MDL may change for each sample analysis due to the dilution required by the matrix to meet the method QC requirements. The target MDL for each method/analyte combination is calculated annually.
- ^e Starting 11/20/2007, analysis of pH was switched from California certified laboratory analysis to field method pursuant to the Water Board letter dated October 16, 2007 – Clarification of Monitoring and Reporting Program Requirements, stating that pH measurements may be conducted in the field.

TABLE 6

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
 Reverse Osmosis Concentrate Monitoring Results ^a
 Fourth Quarter 2011 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Quarterly																					
Sample ID	Date	TDS	Specific Conductance	Field ^c pH	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		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
Analytes Units ^b		MDL																					
		0.400	0.0380	---	0.00011	0.00027	0.00012	0.00028	0.0022	0.00018	0.00047	0.00048	0.00012	0.0250	0.00011	0.0040	0.000075	0.000075	0.00034	0.00018	0.00012	0.00037	0.0013
SC-701-WDR-330	10/11/2011	24800	36700	7.0	0.00320	0.00210	ND (0.0100)	0.00110	0.0744	ND (0.0010)	ND (0.0030)	ND (0.0050)	ND (0.0050)	13.2	ND (0.0100)	0.105	ND (0.0010)	ND (0.0100)	0.0188	ND (0.0050)	ND (0.0010)	ND (0.0050)	0.0110
RL		500	2.00	---	0.0010	0.0021	0.0100	0.0010	0.0100	0.0010	0.0030	0.0050	0.0050	0.500	0.0100	0.0100	0.0010	0.0100	0.0100	0.0050	0.0010	0.0050	0.0100

NOTES:

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

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

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

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

TABLE 7

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
 Sludge Monitoring Results^a
 Fourth Quarter 2011 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Quarterly																		
Analytes Units ^b MDL	Sample ID Date	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		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
		0.0117	0.230	0.0146	0.0196	0.0112	0.0040	0.0136	0.0133	0.0138	0.0050	0.0236	0.0201	0.00015	0.0128	0.0161	0.0111	0.0067	0.0088	0.0194
		4720	39.4	79.9	ND (4.81)	58.3	ND (1.92)	11.6	9.38	111	25.8	8.93	9.46	ND (0.196)	39.8	ND (4.81)	ND (4.81)	ND (4.81)	133	57.8
	RL	9.62	7.93	4.81	4.81	4.81	1.92	4.81	4.81	4.81	3.97	4.81	4.81	0.196	4.81	4.81	4.81	4.81	4.81	4.81

NOTES:

(---) = not required by the ARARs Monitoring and Reporting Program
 mg/kg = milligrams per kilogram
 mg/L = milligrams per liter
 MDL = method detection limit
 ND = parameter not detected at the listed reporting limit
 RL = project reporting limit

^a Sampling location for all sludge samples is the sludge collection bin (see attached P&ID TP-PR-10-10-06).

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

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
 Monitoring Information
 Fourth Quarter 2011 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-329	Ron Phelps	10/4/2011	1:00:00 PM	TLI	EPA 120.1	SC	10/7/2011	Gautam Savani
					TLI	EPA 200.7	AL	10/12/2011	Ethel Suico
					TLI	EPA 200.7	B	10/12/2011	Ethel Suico
					TLI	EPA 200.7	FE	10/12/2011	Ethel Suico
					TLI	EPA 200.7	FETD	10/12/2011	Ethel Suico
					TLI	EPA 200.7	ZN	10/12/2011	Ethel Suico
					TLI	EPA 200.8	AS	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	10/26/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MND	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MO	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	10/24/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	10/5/2011	Maksim Gorbunov
					TLI	EPA 300.0	FL	10/5/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	10/5/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	10/5/2011	Giawad Ghenniwa
					FIELD	HACH	PH	10/4/2011	Ron Phelps
					TLI	SM 2320B	ALKB	10/11/2011	Kim Luck
					TLI	SM 2320B	ALKC	10/11/2011	Kim Luck
					TLI	SM2130B	TRB	10/5/2011	Gautam Savani
					TLI	SM2540C	TDS	10/6/2011	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	10/5/2011	Maria Mangarova
					TLI	SM4500NO2B	NO2N	10/5/2011	Jenny Tankunakorn
SC-100B	SC-100B-WDR-333	Ron Phelps	11/1/2011	12:00:00 PM	TLI	EPA 120.1	SC	11/2/2011	Gautam Savani
					TLI	EPA 200.7	AL	11/11/2011	Ethel Suico
					TLI	EPA 200.7	B	11/15/2011	Ethel Suico
					TLI	EPA 200.7	FE	11/11/2011	Ethel Suico
					TLI	EPA 200.7	FETD	11/11/2011	Ethel Suico
					TLI	EPA 200.7	ZN	11/15/2011	Ethel Suico
					TLI	EPA 200.8	AS	11/16/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	11/17/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	11/17/2011	Katia Kiarashpoor

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Fourth Quarter 2011 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-333	Ron Phelps	11/1/2011	12:00:00 PM	TLI	EPA 200.8	CU	11/12/2011	Katia Kiarashpoor					
					TLI	EPA 200.8	MN	11/12/2011	Katia Kiarashpoor					
					TLI	EPA 200.8	MND	11/19/2011	Katia Kiarashpoor					
					TLI	EPA 200.8	MO	11/12/2011	Katia Kiarashpoor					
					TLI	EPA 200.8	NI	11/12/2011	Katia Kiarashpoor					
					TLI	EPA 200.8	PB	11/12/2011	Katia Kiarashpoor					
					TLI	EPA 200.8	SB	11/12/2011	Katia Kiarashpoor					
					TLI	EPA 218.6	CR6	11/2/2011	Maksim Gorbunov					
					TLI	EPA 300.0	FL	11/2/2011	Giawad Ghenniwa					
					TLI	EPA 300.0	NO3N	11/2/2011	Giawad Ghenniwa					
					TLI	EPA 300.0	SO4	11/3/2011	Giawad Ghenniwa					
					FIELD	HACH	PH	11/1/2011	Ron Phelps					
					TLI	SM 2320B	ALKB	11/8/2011	Kim Luck					
					TLI	SM 2320B	ALKC	11/8/2011	Kim Luck					
					TLI	SM2130B	TRB	11/2/2011	Gautam Savani					
					TLI	SM2540C	TDS	11/2/2011	Jenny Tankunakorn					
					TLI	SM4500NH3D	NH3N	11/3/2011	Maria Mangarova					
					TLI	SM4500NO2B	NO2N	11/2/2011	Jenny Tankunakorn					
					SC-100B	SC-100B-WDR-338	Ron Phelps	12/6/2011	1:30:00 PM	TLI	EPA 120.1	SC	12/8/2011	Gautam Savani
										TLI	EPA 200.7	AL	12/13/2011	Ethel Suico
TLI	EPA 200.7	B	12/16/2011	Ethel Suico										
TLI	EPA 200.7	FE	12/13/2011	Ethel Suico										
TLI	EPA 200.7	FETD	12/13/2011	Ethel Suico										
TLI	EPA 200.7	NI	12/13/2011	Ethel Suico										
TLI	EPA 200.7	ZN	12/13/2011	Ethel Suico										
TLI	EPA 200.8	AS	12/31/2011	Katia Kiarashpoor										
TLI	EPA 200.8	BA	12/31/2011	Katia Kiarashpoor										
TLI	EPA 200.8	CR	12/31/2011	Katia Kiarashpoor										
TLI	EPA 200.8	CU	1/9/2012	Katia Kiarashpoor										
TLI	EPA 200.8	MN	1/7/2012	Katia Kiarashpoor										
TLI	EPA 200.8	MND	1/9/2012	Katia Kiarashpoor										
TLI	EPA 200.8	MO	12/31/2011	Katia Kiarashpoor										
TLI	EPA 200.8	PB	12/31/2011	Katia Kiarashpoor										
TLI	EPA 200.8	SB	1/9/2012	Katia Kiarashpoor										
TLI	EPA 218.6	CR6	12/8/2011	Maksim Gorbunov										
TLI	EPA 300.0	FL	12/7/2011	Giawad Ghenniwa										

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Fourth Quarter 2011 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-338	Ron Phelps	12/6/2011	1:30:00 PM	TLI	EPA 300.0	NO3N	12/7/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	12/7/2011	Giawad Ghenniwa
					FIELD	HACH	PH	12/6/2011	Ron Phelps
					TLI	SM 2320B	ALKB	12/7/2011	Kim Luck
					TLI	SM 2320B	ALKC	12/7/2011	Kim Luck
					TLI	SM2130B	TRB	12/7/2011	Gautam Savani
					TLI	SM2540C	TDS	12/8/2011	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	12/7/2011	Maria Mangarova
					TLI	SM4500NO2B	NO2N	12/7/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-329	Ron Phelps	10/4/2011	1:00:00 PM	TLI	EPA 120.1	SC	10/7/2011	Gautam Savani
					TLI	EPA 200.7	AL	10/12/2011	Ethel Suico
					TLI	EPA 200.7	B	10/12/2011	Ethel Suico
					TLI	EPA 200.7	FE	10/12/2011	Ethel Suico
					TLI	EPA 200.7	ZN	10/12/2011	Ethel Suico
					TLI	EPA 200.8	AS	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MO	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	10/24/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	10/5/2011	Maksim Gorbunov
					TLI	EPA 300.0	FL	10/5/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	10/5/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	10/5/2011	Giawad Ghenniwa
					FIELD	HACH	PH	10/4/2011	Ron Phelps
					TLI	SM2130B	TRB	10/5/2011	Gautam Savani
TLI	SM2540C	TDS	10/6/2011	Jenny Tankunakorn					
TLI	SM4500NH3D	NH3N	10/5/2011	Maria Mangarova					
TLI	SM4500NO2B	NO2N	10/5/2011	Jenny Tankunakorn					
SC-700B	SC-700B-WDR-330	Ron Phelps	10/11/2011	1:00:00 PM	TLI	EPA 120.1	SC	10/12/2011	Gautam Savani
					TLI	EPA 200.8	CR	10/13/2011	Maksim Gorbunov
					TLI	EPA 200.8	MN	10/13/2011	Maksim Gorbunov
					TLI	EPA 218.6	CR6	10/12/2011	Sonya Bersudsky

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Fourth Quarter 2011 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-330	Ron Phelps	10/11/2011	1:00:00 PM	FIELD	HACH	PH	10/11/2011	Ron Phelps
					TLI	SM2130B	TRB	10/12/2011	Gautam Savani
					TLI	SM2540C	TDS	10/14/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-331	Ron Phelps	10/18/2011	1:30:00 PM	TLI	EPA 120.1	SC	10/21/2011	Gautam Savani
					TLI	EPA 200.8	CR	10/26/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	10/26/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	10/19/2011	Maksim Gorbunov
					FIELD	HACH	PH	10/18/2011	Ron Phelps
					TLI	SM2130B	TRB	10/19/2011	Gautam Savani
					TLI	SM2540C	TDS	10/19/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-332	Ron Phelps	10/25/2011	10:00:00 AM	TLI	EPA 120.1	SC	10/26/2011	Gautam Savani
					TLI	EPA 200.8	CR	11/9/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	11/9/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	10/27/2011	Maksim Gorbunov
					FIELD	HACH	PH	10/25/2011	Ron Phelps
					TLI	SM2130B	TRB	10/26/2011	Gautam Savani
					TLI	SM2540C	TDS	10/27/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-333	Ron Phelps	11/1/2011	12:00:00 PM	TLI	EPA 120.1	SC	11/2/2011	Gautam Savani
					TLI	EPA 200.7	AL	11/11/2011	Ethel Suico
					TLI	EPA 200.7	B	11/15/2011	Ethel Suico
					TLI	EPA 200.7	FE	11/11/2011	Ethel Suico
					TLI	EPA 200.7	ZN	11/15/2011	Ethel Suico
					TLI	EPA 200.8	AS	11/16/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	11/17/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	11/17/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MO	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	11/12/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	11/2/2011	Maksim Gorbunov
					TLI	EPA 300.0	FL	11/2/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	11/2/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	11/3/2011	Giawad Ghenniwa

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Fourth Quarter 2011 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-333	Ron Phelps	11/1/2011	12:00:00 PM	FIELD	HACH	PH	11/1/2011	Ron Phelps
					TLI	SM2130B	TRB	11/2/2011	Gautam Savani
					TLI	SM2540C	TDS	11/2/2011	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	11/3/2011	Maria Mangarova
					TLI	SM4500NO2B	NO2N	11/2/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-334	Ron Phelps	11/8/2011	11:00:00 AM	TLI	EPA 120.1	SC	11/11/2011	Gautam Savani
					TLI	EPA 200.8	CR	11/22/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	11/22/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	11/11/2011	Maksim Gorbunov
					FIELD	HACH	PH	11/8/2011	Ron Phelps
					TLI	SM2130B	TRB	11/9/2011	Gautam Savani
					TLI	SM2540C	TDS	11/14/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-335	Ron Phelps	11/15/2011	10:00:00 AM	TLI	EPA 120.1	SC	11/16/2011	Gautam Savani
					TLI	EPA 200.8	CR	12/28/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	12/28/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	11/16/2011	Maksim Gorbunov
					FIELD	HACH	PH	11/15/2011	Ron Phelps
					TLI	SM2130B	TRB	11/16/2011	Gautam Savani
					TLI	SM2540C	TDS	11/17/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-336	Ron Phelps	11/22/2011	10:30:00 AM	TLI	EPA 120.1	SC	11/23/2011	Gautam Savani
					TLI	EPA 200.8	CR	12/4/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	12/4/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	11/23/2011	Maksim Gorbunov
					FIELD	HACH	PH	11/22/2011	Ron Phelps
					TLI	SM2130B	TRB	11/23/2011	Gautam Savani
					TLI	SM2540C	TDS	11/22/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-337	Ron Phelps	11/29/2011	10:00:00 AM	TLI	EPA 120.1	SC	11/30/2011	Gautam Savani
					TLI	EPA 200.8	CR	12/16/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	12/16/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	11/30/2011	Maksim Gorbunov
					FIELD	HACH	PH	11/29/2011	Ron Phelps
					TLI	SM2130B	TRB	11/30/2011	Gautam Savani
					TLI	SM2540C	TDS	11/30/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-338	Ron Phelps	12/6/2011	1:30:00 PM	TLI	EPA 120.1	SC	12/8/2011	Gautam Savani

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Fourth Quarter 2011 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-338	Ron Phelps	12/6/2011	1:30:00 PM	TLI	EPA 200.7	AL	12/13/2011	Ethel Suico
					TLI	EPA 200.7	B	12/16/2011	Ethel Suico
					TLI	EPA 200.7	FE	12/13/2011	Ethel Suico
					TLI	EPA 200.7	NI	12/13/2011	Ethel Suico
					TLI	EPA 200.7	ZN	12/13/2011	Ethel Suico
					TLI	EPA 200.8	AS	12/31/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	12/31/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	12/31/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	1/9/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	1/7/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MO	12/31/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	12/31/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	1/9/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	12/8/2011	Maksim Gorbunov
					TLI	EPA 300.0	FL	12/7/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	12/7/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	12/7/2011	Giawad Ghenniwa
					FIELD	HACH	PH	12/6/2011	Ron Phelps
					TLI	SM2130B	TRB	12/7/2011	Gautam Savani
					TLI	SM2540C	TDS	12/8/2011	Jenny Tankunakorn
TLI	SM4500NH3D	NH3N	12/7/2011	Maria Mangarova					
TLI	SM4500NO2B	NO2N	12/7/2011	Jenny Tankunakorn					
SC-700B	SC-700B-WDR-339	Ron Phelps	12/13/2011	1:30:00 PM	TLI	EPA 120.1	SC	12/14/2011	Gautam Savani
					TLI	EPA 200.8	CR	1/4/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	12/30/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	12/16/2011	Maksim Gorbunov
					FIELD	HACH	PH	12/13/2011	Ron Phelps
					TLI	SM2130B	TRB	12/14/2011	Gautam Savani
					TLI	SM2540C	TDS	12/16/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-340	Ron Phelps	12/20/2011	1:30:00 PM	TLI	EPA 120.1	SC	12/28/2011	Gautam Savani
					TLI	EPA 200.8	CR	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	1/8/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	12/22/2011	Maksim Gorbunov
					FIELD	HACH	PH	12/20/2011	Ron Phelps
					TLI	SM2130B	TRB	12/21/2011	Gautam Savani
					TLI	SM2540C	TDS	12/22/2011	Jenny Tankunakorn

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
 Monitoring Information
 Fourth Quarter 2011 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-341	Ron Phelps	12/27/2011	10:30:00 AM	TLI	EPA 120.1	SC	12/28/2011	Mark Kotani
					TLI	EPA 200.8	CR	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	1/8/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	12/28/2011	Maksim Gorbunov
					FIELD	HACH	PH	12/27/2011	Ron Phelps
					TLI	SM2130B	TRB	12/29/2011	Kim Luck
					TLI	SM2540C	TDS	12/28/2011	Jenny Tankunakorn
SC-701	SC-701-WDR-330	Ron Phelps	10/11/2011	3:00:00 PM	TLI	EPA 120.1	SC	10/14/2011	Gautam Savani
					TLI	EPA 200.7	BA	10/25/2011	Ethel Suico
					TLI	EPA 200.7	MN	10/25/2011	Ethel Suico
					TLI	EPA 200.7	MO	10/24/2011	Ethel Suico
					TLI	EPA 200.8	AG	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	AS	10/14/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BE	10/26/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CD	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CO	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	10/14/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	10/14/2011	Katia Kiarashpoor
					TLI	EPA 200.8	HG	10/14/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	10/14/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SE	10/14/2011	Katia Kiarashpoor
					TLI	EPA 200.8	TL	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	V	10/26/2011	Katia Kiarashpoor
					TLI	EPA 200.8	ZN	10/24/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	10/13/2011	Maksim Gorbunov
TLI	EPA 300.0	FL	10/11/2011	Giawad Ghenniwa					
FIELD	HACH	PH	10/11/2011	Ron Phelps					
TLI	SM2540C	TDS	10/14/2011	Jenny Tankunakorn					
Phase Separator	SC-Sludge-WDR-330	Ron Phelps	10/11/2011	3:20:00 PM	TLI	EPA 300.0	FL	10/11/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	10/11/2011	Giawad Ghenniwa
					TLI	EPA 6010B	AG	10/20/2011	Ethel Suico
					TLI	EPA 6010B	AS	10/20/2011	Ethel Suico
					TLI	EPA 6010B	BA	10/20/2011	Ethel Suico

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
 Monitoring Information
 Fourth Quarter 2011 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	SC-Sludge-WDR-330	Ron Phelps	10/11/2011	3:20:00 PM	TLI	EPA 6010B	BE	10/19/2011	Ethel Suico
					TLI	EPA 6010B	CD	10/20/2011	Ethel Suico
					TLI	EPA 6010B	CO	10/20/2011	Ethel Suico
					TLI	EPA 6010B	CR	10/20/2011	Ethel Suico
					TLI	EPA 6010B	CU	10/20/2011	Ethel Suico
					TLI	EPA 6010B	MN	10/20/2011	Ethel Suico
					TLI	EPA 6010B	MO	10/20/2011	Ethel Suico
					TLI	EPA 6010B	NI	10/20/2011	Ethel Suico
					TLI	EPA 6010B	PB	10/20/2011	Ethel Suico
					TLI	EPA 6010B	SB	10/20/2011	Ethel Suico
					TLI	EPA 6010B	SE	10/20/2011	Ethel Suico
					TLI	EPA 6010B	TL	10/20/2011	Ethel Suico
					TLI	EPA 6010B	V	10/20/2011	Ethel Suico
					TLI	EPA 6010B	ZN	10/20/2011	Ethel Suico
					TLI	SM2540B	MOIST	10/17/2011	Gautam Savani
					TLI	SW 6020A	HG	11/8/2011	Katia Kiarashpoor
					TLI	SW 7199	CR6	10/24/2011	David Blackburn

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
 Monitoring Information
 Fourth Quarter 2011 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).

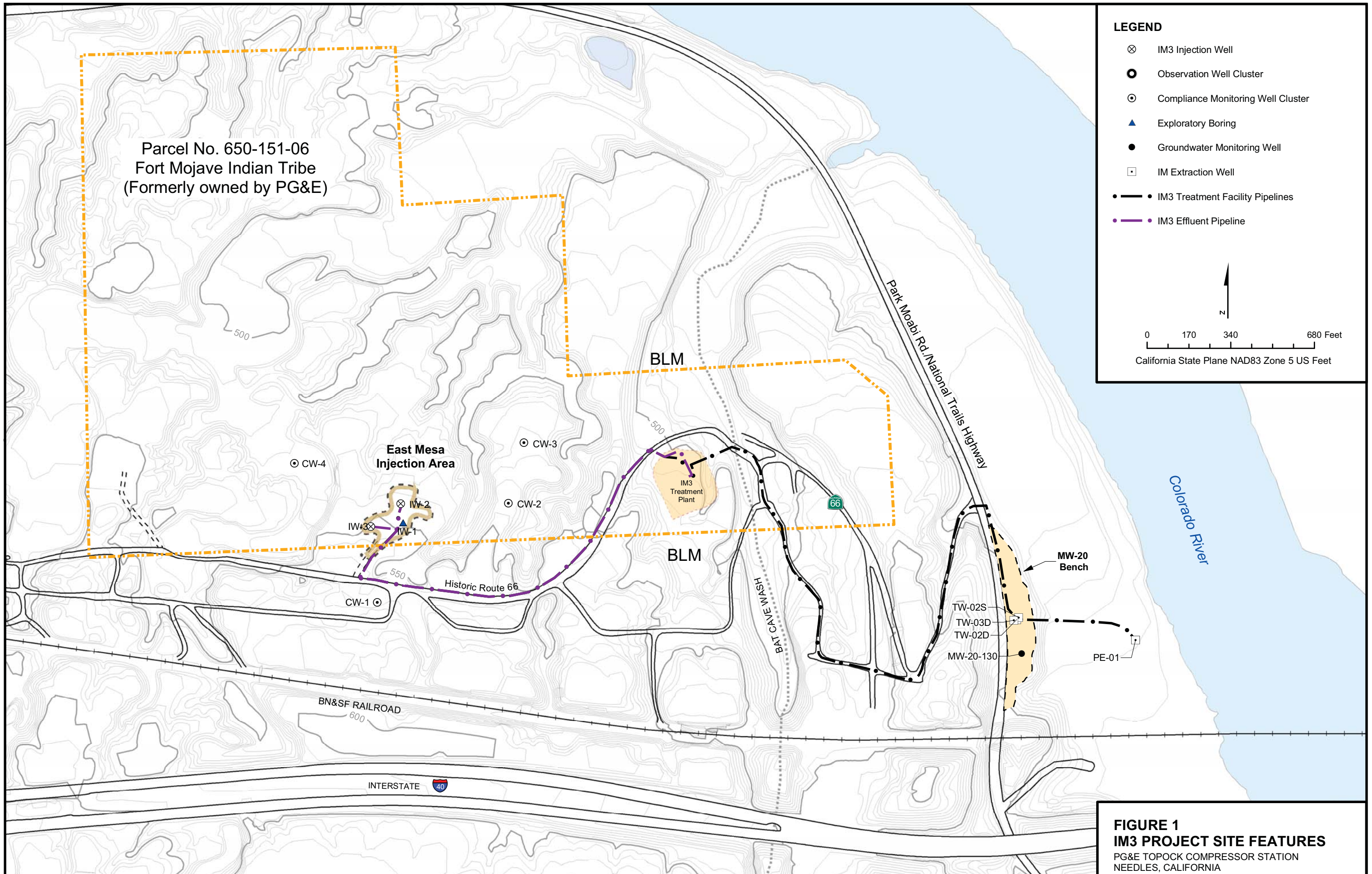
SC-100B = Sampling location for all influent samples is tap on pipe from extraction wells into tank T-100 (see attached P&ID TP-PR-10-10-04).

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

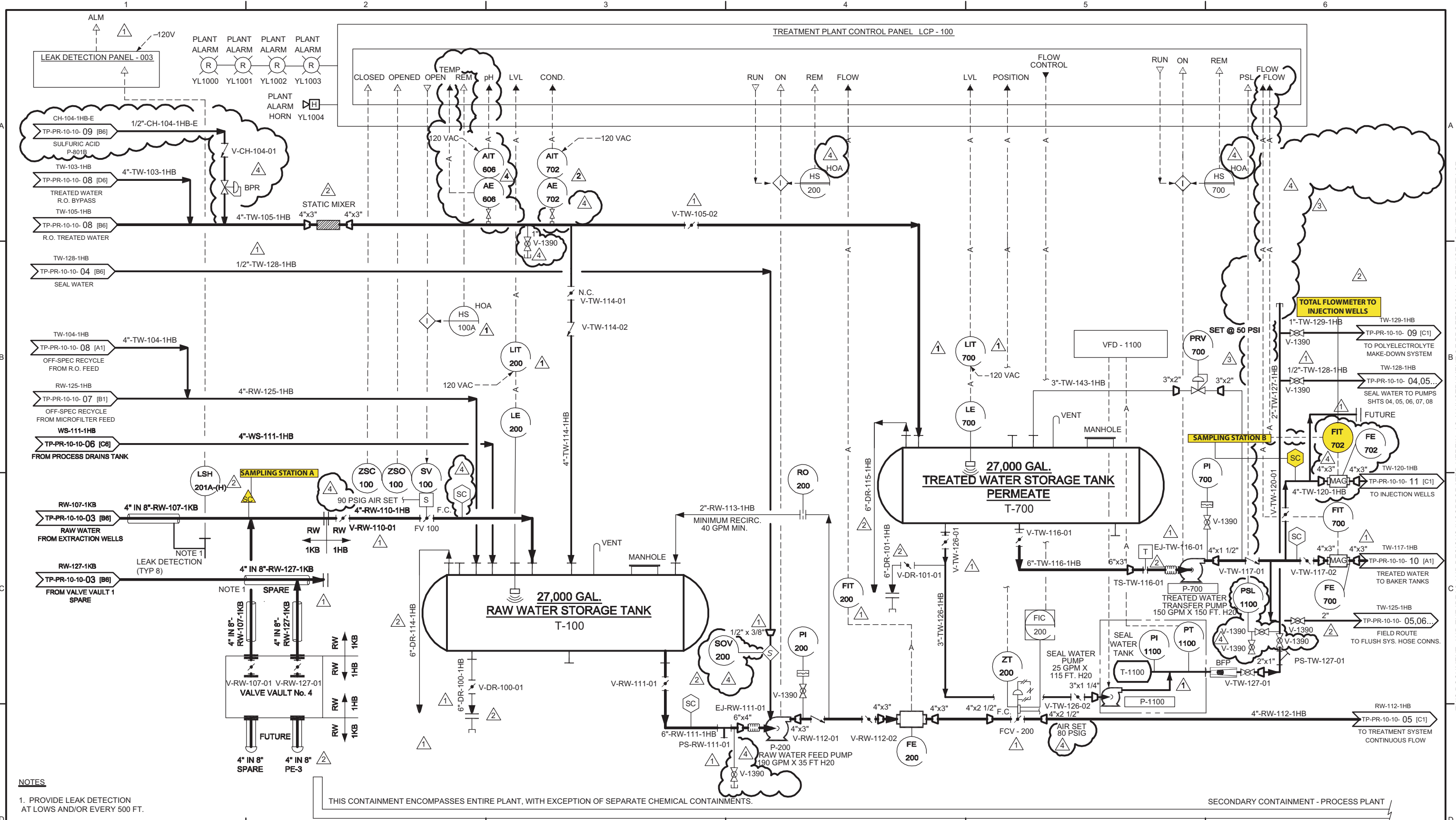
Prior to April 11, 2007 the analytical methods listed in the 40 CFR Part 136 for pH and TDS were E150.1 and E160.1, respectively. Per EPA and Department of Health Services guidelines, the analytical methods listed in the current 40 CFR Part 136 have changed to SM4500-H B and SM2540C as shown on the table.

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

Figures



**FIGURE 1
IM3 PROJECT SITE FEATURES**
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA



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					
						DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE	ISSUED	REV	DATE	SDE
0	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE	ISSUED	REV	DATE	SDE	PEM
0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL		ELECTRICAL		STATUS	PRELIMINARY				
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL		INST & CONTROL		REV.	FOR REVIEW AND APPROVAL	D	07/28/04		
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL		ARCHITECTURAL		CLIENT	APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP
3	02/14/05	ADDED RECIRC. LINE AND PRV VALVE TO T-700 - APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS		ENVIRONMENTAL		FIELD	REVISED & APPROVED FOR CONSTRUCTION	4	/ /		
4	09/21/05	REVISED PER AS-BUILT CONDITIONS	EFC	AJ	PIPING		GEN. ARRANG.		INTRA CO.					

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

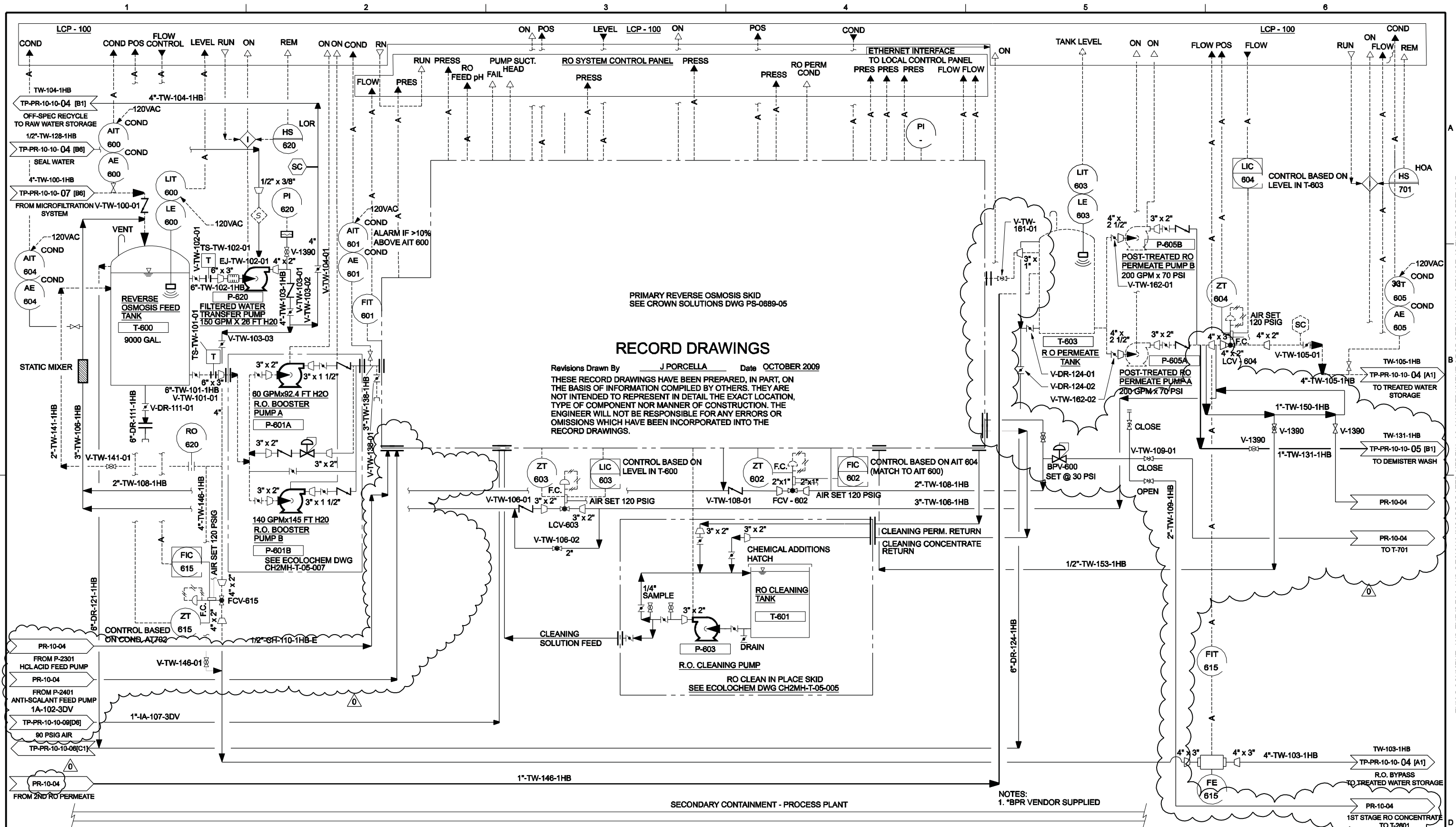
PROCESS AND INSTRUMENTATION DIAGRAM
SHEET 04
STORAGE AREA

SCALE NONE

CH2MHILL

DWG. NO. TP-PR-10-10-04 REV. 4

REUSE OF DOCUMENTS: 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 © CH2M HILL



RECORD DRAWINGS

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

SECONDARY CONTAINMENT - PROCESS PLANT

NOTES:
 1. *BPR VENDOR SUPPLIED

**** ORIGINAL STAMPED AND SIGNED BY: JOHN PORCELLA CALIFORNIA PE NO. C70145 ON 04-01-2009 ****

NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 0		DATE 10/02/09	PRINT DISTRIBUTION	STATUS				
						DISCIPLINE	REVIEWED			DISCIPLINE	REVIEWED	ISSUED	REV	DATE
A	2/12/09	INTERNAL REVIEW				CIVIL				PRELIMINARY	A	2/12/09	JP	JP
B	2/12/09	CLIENT REVIEW				ELECTRICAL				FOR REVIEW AND APPROVAL	C	4/01/09	JP	JP
C	4/01/09	FOR REVIEW AND APPROVAL	JR	JP		STRUCTURAL				APPROVED FOR CONSTRUCTION				
D	11/17/09	FINAL RECORD ISSUE	JR	JP		MECHANICAL				REVISED & APPROVED FOR CONSTRUCTION	0	10/02/09	JP	JP
						PROCESS								
						PIPING								

PACIFIC GAS & ELECTRIC CO.
 TOPOCK COMPRESSOR STATION
 INTERIM MEASURE 3
 PLANT PERFORMANCE IMPROVEMENTS

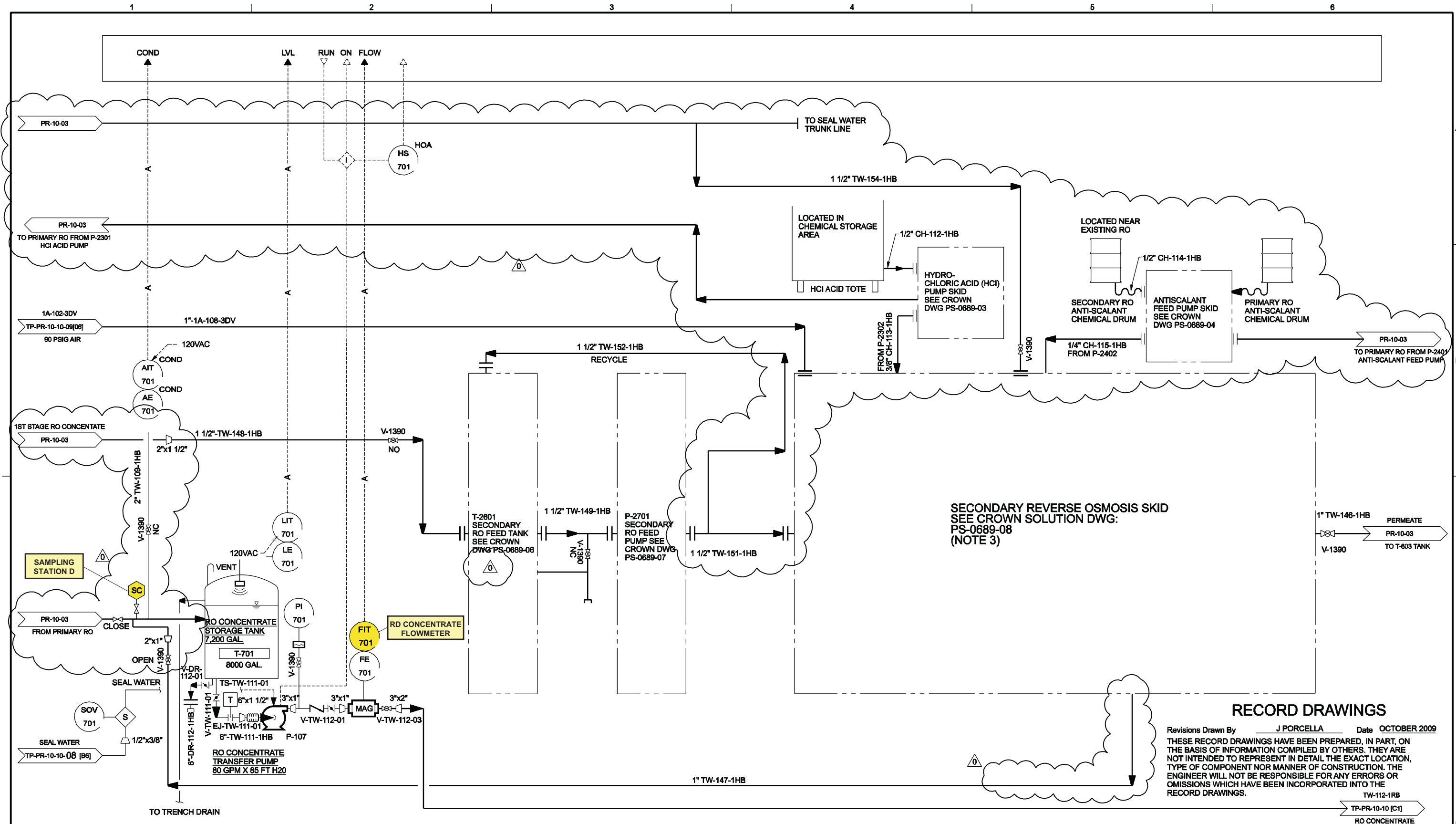
PROJECT NO. 362032

CH2MHILL

DWG. NO. PR-10-03 REV. 0

PROCESS AND INSTRUMENTATION DIAGRAM
 REVERSE OSMOSIS SYSTEM
 SHEET ONE OF TWO

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.



SECONDARY REVERSE OSMOSIS SKID
SEE CROWN SOLUTION DWG:
PS-0689-08
(NOTE 3)

RECORD DRAWINGS

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

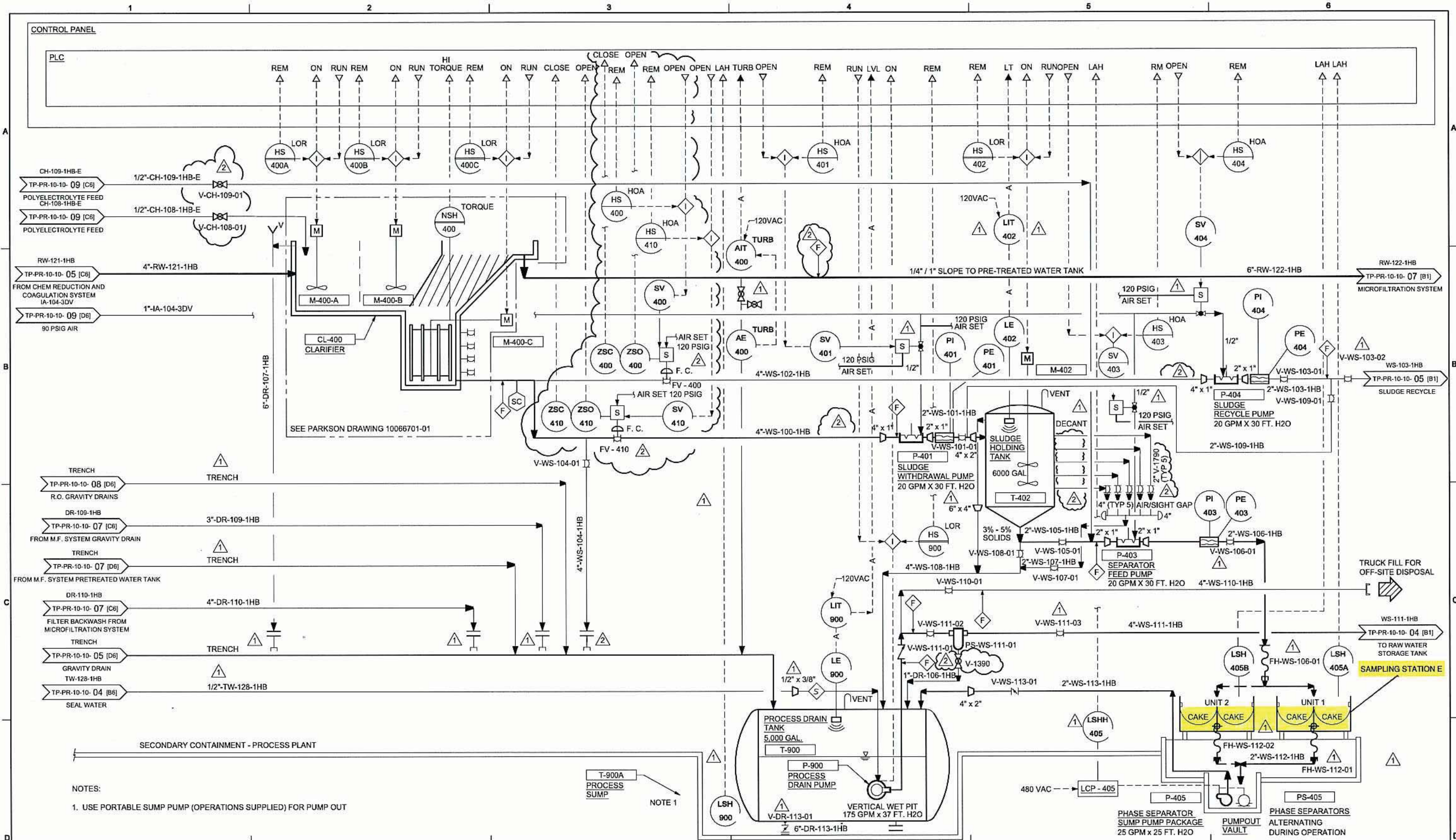
**** ORIGINAL STAMPED AND SIGNED BY: JOHN PORCELLA CALIFORNIA PE NO. C70145 ON 04-01-2009 ****

NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL		REV 0		DATE 10/02/09	PRINT DISTRIBUTION	STATUS					
					DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED			ISSUED	REV	DATE	SDE	PEM	
A	2/12/09	INTERNAL REVIEW									ISSUED					
B	2/12/09	CLIENT REVIEW			CIVIL	SJ	ELECTRICAL	FH			PRELIMINARY	A	2/12/09	JP	JP	
C	4/01/09	FOR REVIEW AND APPROVAL	JR	JP	STRUCTURAL		INST & CONTROL	JG			FOR REVIEW AND APPROVAL	C	4/01/09	JP	JP	
D	11/17/09	FINAL RECORD ISSUE	JR	JP	MECHANICAL	SJ	ARCHITECTURAL				APPROVED FOR CONSTRUCTION					
					PROCESS	DF	ENVIRONMENTAL				REVISED & APPROVED FOR CONSTRUCTION	0	10/02/09	JP	JP	
					PIPING	SJ	GEN. ARRANG.	SJ			INTRA CO.					

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
DWG. NO. PR-10-04 REV. 0

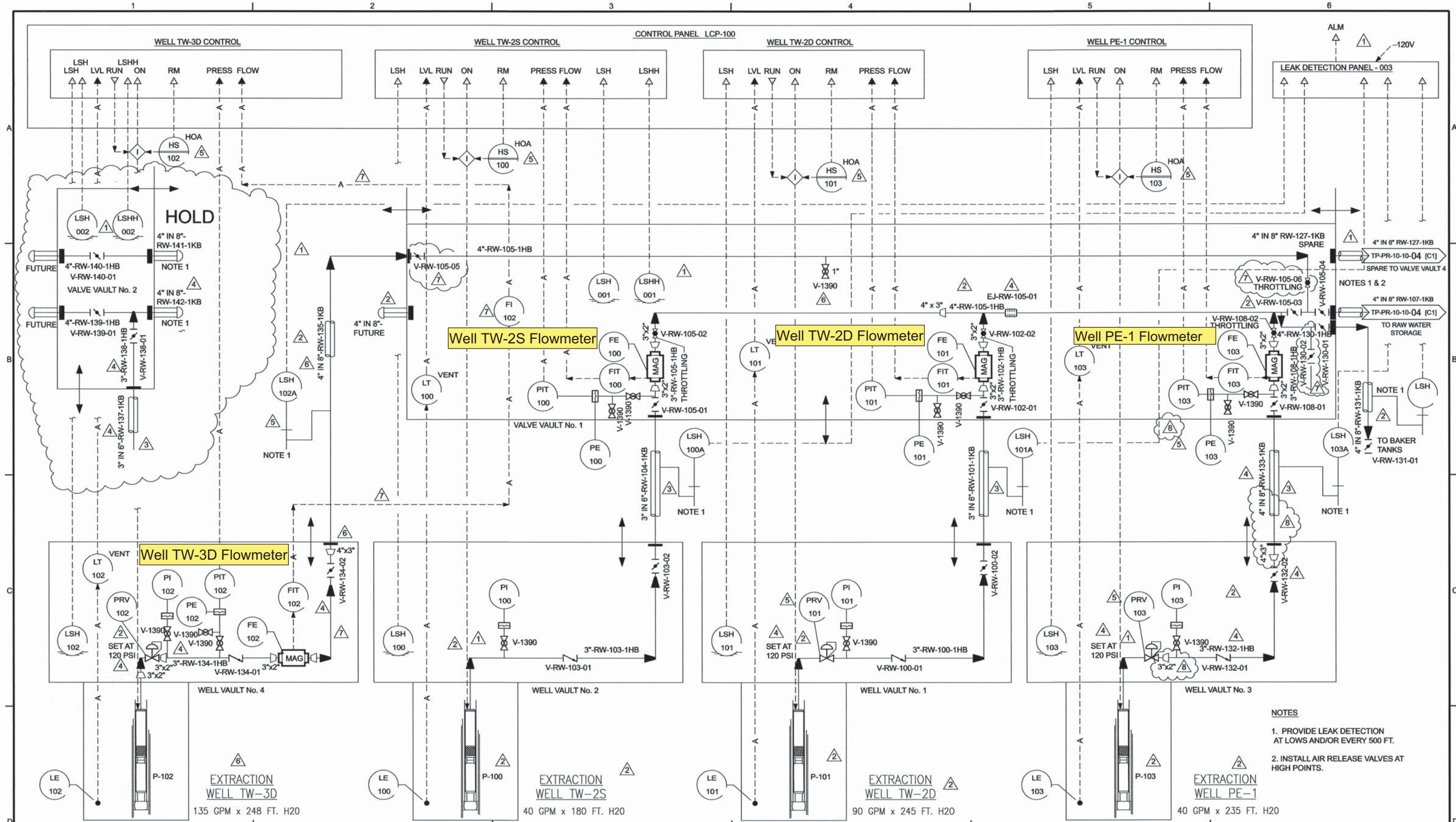
THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. REUSE OF DOCUMENTS: © CH2M HILL



NOTES:
 1. USE PORTABLE SUMP PUMP (OPERATIONS SUPPLIED) FOR PUMP OUT

NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 2	DATE 01/23/05	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 06 CLARIFICATION AND SLUDGE REMOVAL		
									ISSUED	REV	DATE	SDE		PEM	DWG. NO. TP-PR-10-10-06	REV. 2
0	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE REVIEWED			DATE	ISSUED							
0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL	ELECTRICAL		STATUS	PRELIMINARY							
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL	INST & CONTROL		REV.	FOR REVIEW AND APPROVAL	D	07/28/04					
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL	ARCHITECTURAL		CLIENT	APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP			
					PROCESS	ENVIRONMENTAL		FIELD	REVISED & APPROVED FOR CONSTRUCTION	2	01/23/05					
					PIPING	GEN. ARRANG.		INTRA CO.								

REUSE OF DOCUMENTS: 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 © CH2M HILL



- NOTES**
1. PROVIDE LEAK DETECTION AT LOWS AND/OR EVERY 500 FT.
 2. INSTALL AIR RELEASE VALVES AT HIGH POINTS.

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	ISSUED	REV	DATE	SDE	PEM
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL	---	ELECTRICAL	---	STATUS	PRELIMINARY				
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL	---	INST & CONTROL	---	REV.	FOR REVIEW AND APPROVAL	D	07/28/04		
3	03/16/05	DELETED NOTES, APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL	---	ARCHITECTURAL	---	CLIENT	APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP
4	07/20/05	RELIEF VALVE SETTINGS, WELL PE-1 LINE TAGS, HOLDS REMOVED, APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS	---	ENVIRONMENTAL	---	FIELD	REVISED & APPROVED FOR CONSTRUCTION	7	12/19/05		
5	09/27/05	FINAL RECORD ISSUE	EFC	AJ	PIPING	SDH	GEN. ARRANG.	---	INTRA CD.					
6	10/06/05	REVISED FINAL RECORD - ADDED TW-3D	EFC	AJ										
7	10/19/05	REVISED AS NOTED	EFC	AJ										



RESPONSIBLE ENGINEER:
Kenneth L. Martins
PE # CH4876 Exp. 6/30/08

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

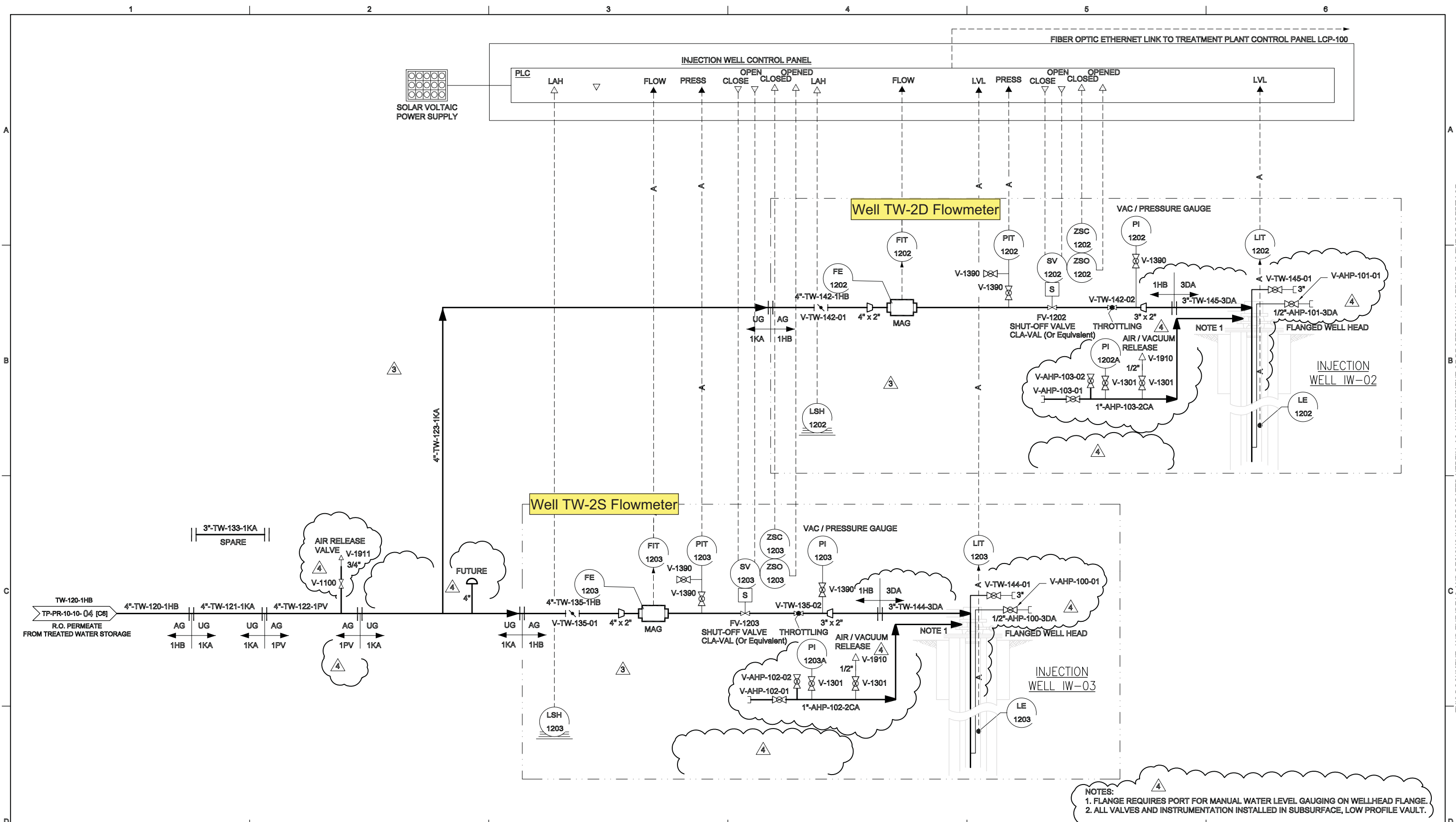
PROCESS AND INSTRUMENTATION DIAGRAM
SHEET 03
EXTRACTION WELLS
PE-1, TW-2D, TW-2S AND TW-3D

SCALE NONE

CH2MHILL

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

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. REUSE OF DOCUMENTS: © CH2M HILL



NOTES:
 1. FLANGE REQUIRES PORT FOR MANUAL WATER LEVEL GAUGING ON WELLHEAD FLANGE.
 2. ALL VALVES AND INSTRUMENTATION INSTALLED IN SUBSURFACE, LOW PROFILE VAULT.

NO.	DATE	REVISION	BY	CHK	DISCIPLINE	APPROVAL	REV 4	DATE 03/10/05	PRINT DISTRIBUTION	STATUS			
										ISSUED	REV	DATE	PEM
A	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE				
0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL		ELECTRICAL		STATUS				
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL		INST & CONTROL		REV.				
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL		ARCHITECTURAL		CLIENT				
3	02/14/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS		ENVIRONMENTAL		FIELD				
4	03/10/05	REMOVED HOLD AND APPROVED FOR CONSTRUCTION	EFC	AJ	PIPING		GEN. ARRANG.		INTRA CO.				

SCALE NONE

CH2MHILL

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

PROCESS AND INSTRUMENTATION DIAGRAM
 SHEET 11
 INJECTION WELLS

DWG. NO. TP-PR-10-10-11 REV. 4

Appendix A
Semiannual Operations and Maintenance Log,
July 1, 2011 through December 31, 2011

Semiannual Operations and Maintenance Log, July 1, 2011 through December 31, 2011

Downtime is defined as any periods when all extraction wells are not operating, so that no groundwater is being extracted and piped into IM-3 as influent. Periods of planned and unplanned extraction system downtime are summarized here. The times shown are in Pacific Standard Time to be consistent with other data collected at the site.

July 2011

- **July 3, 2011 (unplanned):** The extraction well system was offline from 9:40 p.m. to 9:52 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 12 minutes.
- **July 4, 2011 (planned):** The extraction well system was offline from 5:08 a.m. to 5:12 a.m. due to changing back to City of Needles power from generator power. Extraction system downtime was 4 minutes.
- **July 5, 2011 (unplanned):** The extraction well system was offline from 11:08 p.m. to 11:14 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 6 minutes.
- **July 6, 2011 (planned):** The extraction well system was offline from 8:04 a.m. to 11:26 a.m. and from 11:28 a.m. to 11:50 a.m. due to changing back to City of Needles power from generator power and monthly scheduled oxidation tank maintenance. Extraction system downtime was 3 hours and 44 minutes.
- **July 7, 2011 (planned):** The extraction well system was offline from 10:24 a.m. to 10:26 a.m. and from 10:46 a.m. to 10:48 a.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 4 minutes.
- **July 13-14, 2011 (unplanned):** The extraction well system was offline from 11:44 p.m. on July 13th to 12:10 a.m. on July 14th and from 12:12 a.m. to 12:58 a.m. on July 14th due to reduced microfilter performance. Extraction system downtime was 1 hour and 12 minutes.
- **July 14, 2011 (planned):** The extraction well system was offline from 10:00 a.m. to 12:32 p.m. due to scheduled maintenance on sludge control valve 410. Extraction system downtime was 2 hours and 32 minutes.
- **July 27-28, 2011 (planned):** The extraction well system was offline from 4:12 a.m. to 5:28 a.m. on July 27th and from 7:14 a.m. on July 27th to 12:46 p.m. on July 28th for monthly schedule maintenance. Extraction system downtime was 1 day and 6 hours and 48 minutes.

- **July 28, 2011 (unplanned):** The extraction well system was offline from 6:16 p.m. to 6:24 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 8 minutes.

August 2011

- **August 1, 2011 (unplanned):** The extraction well system was offline from 6:28 a.m. to 6:32 a.m. due to computer rebooting to clear alarms. Extraction system downtime was 4 minutes.
- **August 2, 2011 (planned):** The extraction well system was offline from 10:38 a.m. to 11:42 a.m. due to tank management to control tank levels. Extraction system downtime was 1 hour and 4 minutes.
- **August 3, 2011 (planned):** The extraction well system was offline from 12:32 p.m. to 12:34 p.m., 12:36 p.m. to 12:38 p.m., and 12:54 p.m. to 12:58 p.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 8 minutes.
- **August 3, 2011 (unplanned):** The extraction well system was offline from 7:26 p.m. to 8:18 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 52 minutes.
- **August 6, 2011 (unplanned):** The extraction well system was offline from 5:32 p.m. to 6:20 p.m. due to microfilter repair. Extraction system downtime was 48 minutes.
- **August 11, 2011 (unplanned):** The extraction well system was offline from 8:32 a.m. to 10:18 a.m. reduced microfilter performance. Extraction system downtime was 1 hour and 46 minutes.
- **August 15, 2011 (planned):** The extraction well system was offline from 3:26 a.m. to 3:54 a.m. due to tank level management in preparation for monthly schedule maintenance. Extraction system downtime was 28 minutes.
- **August 15-18, 2011 (planned):** The extraction well system was offline from 5:22 a.m. on August 15th to 12:38 p.m. on August 18th, from 12:48 p.m. to 1:34 p.m. on August 18th, and from 4:18 p.m. to 7:16 p.m. on August 18th for monthly scheduled maintenance. Extraction system downtime was 3 days and 11 hours.
- **August 22, 2011 (planned):** The extraction well system was offline from 8:32 a.m. to 10:44 a.m. and from 10:58 a.m. to 11:00 a.m. due to chemical mixing pump maintenance. Extraction system downtime was 2 hours and 14 minutes.
- **August 30, 2011 (planned):** The extraction well system was offline from 8:52 a.m. to 11:02 a.m. due to primary reverse osmosis system maintenance. Extraction system downtime was 2 hours and 10 minutes.

September 2011

- **September 2, 2011 (unplanned):** The extraction well system was offline from 7:52 a.m. to 9:00 a.m. due to microfilter maintenance. Extraction system downtime was 1 hour and 8 minutes.
- **September 3, 2011 (unplanned):** The extraction well system was offline from 11:00 a.m. to 11:28 a.m., 2:46 p.m. to 3:14 p.m., and 3:16 p.m. to 4:30 p.m. due to microfilter strainer fouling and microfilter maintenance after microfilter shutdown due to high system pressure. Extraction system downtime was 2 hours and 10 minutes.
- **September 7, 2011 (planned):** The extraction well system was offline from 10:18 a.m. to 10:22 a.m., 10:24 a.m. to 10:28 a.m., 10:50 a.m. to 10:52 a.m., 10:58 a.m. to 11:00 a.m., and 11:18 a.m. to 11:20 a.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 14 minutes.
- **September 13, 2011 (unplanned):** The extraction well system was offline from 4:18 a.m. to 4:26 a.m. due City of Needles power imbalance that shut down extraction wells and from 11:52 a.m. to 11:58 a.m. due to return to City of Needles power from generator power once City of Needles power was restored. Extraction system downtime was 14 minutes.
- **September 13, 2011 (planned):** The extraction well system was offline from 5:14 a.m. to 5:16 a.m. due to testing of leak detection system after City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 2 minutes.
- **September 14, 2011 (planned):** The extraction well system was offline from 7:32 a.m. to 7:34 a.m., 7:42 a.m. to 7:44 a.m., 7:52 a.m. to 7:54 a.m., 8:02 a.m. to 8:04 a.m., and 8:20 a.m. to 8:22 a.m. due to testing of leak detection system. Extraction system downtime was 10 minutes.
- **September 21, 2011 (planned):** The extraction well system was offline from 1:54 p.m. to 2:02 p.m. due to testing of plant instrumentation and controls updates. Extraction system downtime was 8 minutes.
- **September 28, 2011 (planned):** The extraction well system was offline from 12:22 p.m. to 12:44 p.m. due to primary reverse osmosis system maintenance. Extraction system downtime was 22 minutes.

October 2011

- **October 5, 2011 (planned):** The extraction well system was offline from 8:56 a.m. to 8:58 a.m., 9:10 a.m. to 9:12 a.m., 9:14 a.m. to 9:16 a.m., 9:58 a.m. to 10:00 a.m., and 10:36 a.m. to 10:38 a.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 10 minutes.
- **October 14, 2011 (unplanned):** The extraction well system was offline from 2:16 a.m. to 1:16 p.m., 1:26 p.m. to 3:54 p.m., and 4:10 p.m. to 4:14 p.m. due to polymer system maintenance. Extraction system downtime was 13 hours and 32 minutes.

- **October 14, 2011 (unplanned):** The extraction well system was offline from 5:26 p.m. to 6:38 p.m. due to decreased microfilter performance. Extraction system downtime was 1 hour and 12 minutes.
- **October 15, 2011 (planned):** The extraction well system was offline from 11:20 a.m. to 11:58 a.m. due to high water level in the raw water storage tank from receiving offsite water. Extraction system downtime was 38 minutes.
- **October 18, 2011 (planned):** The extraction well system was offline from 6:30 a.m. to 6:52 a.m. when City of Needles power utility adjusted power feed to plant. Extraction system downtime was 22 minutes.
- **October 25, 2011 (unplanned):** The extraction well system was offline from 12:52 p.m. to 2:28 p.m. due to reduced microfilter performance. Extraction system downtime was 1 hour and 36 minutes.
- **October 31, 2011 (unplanned):** The extraction well system was offline from 9:46 p.m. to 9:58 a.m. due to reduced microfilter performance. Extraction system downtime was 12 minutes.

November 2011

- **November 1, 2011 (planned):** The extraction well system was offline from 11:22 a.m. to 3:34 p.m. due to plant maintenance. Extraction system downtime was 4 hours and 12 minutes.
- **November 2, 2011 (planned):** The extraction well system was offline from 12:54 p.m. to 2:04 p.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 1 hour and 10 minutes.
- **November 4, 2011 (planned):** The extraction well system was offline from 5:20 p.m. to 5:52 p.m. due to well maintenance. Extraction system downtime was 32 minutes.
- **November 9, 2011 (planned):** The extraction well system was offline from 10:20 a.m. to 2:54 p.m. due to reverse osmosis system maintenance. Extraction system downtime was 4 hours and 34 minutes.
- **November 14, 2011 (unplanned):** The extraction well system was offline from 4:48 p.m. to 5:46 p.m. due to blower malfunction. Extraction system downtime was 58 minutes.
- **November 16, 2011 (planned):** The extraction well system was offline from 10:10 a.m. to 12:40 p.m. due to cleaning of an iron oxidation tank. Extraction system downtime was 2 hours and 30 minutes.
- **November 18, 2011 (unplanned):** The extraction well system was offline from 5:24 a.m. to 8:26 a.m. and 8:44 a.m. to 9:24 a.m. due to a ferrous chloride pumping system malfunction causing low ferrous chloride flow alarms that shut down extraction wells. Extraction system downtime was 3 hours and 42 minutes.

- **November 20, 2011 (unplanned):** The extraction well system was offline from 3:14 p.m. to 3:18 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 4 minutes.
- **November 30, 2011 (unplanned):** The extraction well system was offline from 6:50 p.m. to 9:44 p.m. due to a microfilter valve failure. Extraction system downtime was 2 hours and 54 minutes.

December 2011

- **December 1, 2011 (unplanned):** The extraction well system was offline from 12:52 p.m. to 1:08 p.m. due to reduced microfilter performance. Extraction system downtime 16 minutes.
- **December 2, 2011 (planned):** The extraction well system was offline from 2:44 p.m. to 4:32 p.m. due to microfilter flow valve replacement. Extraction system downtime was 1 hour and 48 minutes.
- **December 2, 2011 (planned):** The extraction well system was offline from 10:46 p.m. to 10:52 p.m. due to cleaning of the raw water storage tank strainer. Extraction system downtime was 6 minutes.
- **December 7, 2011 (planned):** The extraction well system was offline from 2:38 p.m. to 3:14 p.m. due to critical alarm and leak detection system testing. Extraction system downtime was 36 minutes.
- **December 8, 2011 (unplanned):** The extraction well system was offline from 6:58 a.m. to 7:04 a.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 6 minutes.
- **December 9, 2011 (unplanned):** The extraction well system was offline from 6:58 a.m. to 7:00 a.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 2 minutes.
- **December 12, 2011 (unplanned):** The extraction well system was offline from 3:48 p.m. to 3:52 p.m. due to groundwater sampling of extraction wells TW-2D and TW-2S. Extraction system downtime was 4 minutes.
- **December 14, 2011 (planned):** The extraction well system was offline from 12:20 p.m. to 3:10 p.m. due to monthly scheduled plant maintenance. Extraction system downtime was 2 hours and 50 minutes.
- **December 16, 2011 (unplanned):** The extraction well system was offline from 7:46 a.m. to 7:48 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 2 minutes.
- **December 19, 2011 (planned):** The extraction well system was offline from 11:38 a.m. to 2:02 p.m. due to maintenance of an iron oxidation tank. Extraction system downtime was 2 hours and 24 minutes.

- **December 28, 2011 (planned):** The extraction well system was offline from 7:40 a.m. to 9:40 a.m. and 9:42 a.m. to 2:52 p.m. due to monthly scheduled plant maintenance. Extraction system downtime was 7 hours and 10 minutes.

Appendix B
Daily Volumes of Groundwater Treated

July 2011 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

Month	Day	Year	Extraction Well System					Injection Well System			RO Brine
			TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
July	1	2011	--	--	155,544	39,407	194,951	13,219	186,692	199,911	3,035
July	2	2011	--	--	155,832	38,927	194,759	4,701	182,844	187,546	3,200
July	3	2011	--	--	154,348	37,881	192,229	0	191,998	191,998	6,531
July	4	2011	--	--	155,638	38,210	193,848	0	182,453	182,453	3,013
July	5	2011	--	--	154,808	38,976	193,785	5,509	183,702	189,212	3,277
July	6	2011	--	--	130,077	33,645	163,723	4	159,114	159,118	3,043
July	7	2011	--	--	153,636	37,634	191,270	1,905	187,242	189,147	3,274
July	8	2011	--	--	156,069	38,105	194,174	2	185,789	185,791	3,058
July	9	2011	--	--	155,961	38,169	194,130	6	190,563	190,569	3,168
July	10	2011	--	--	156,457	37,504	193,961	2	187,687	187,689	3,170
July	11	2011	--	--	156,169	37,884	194,053	4	187,963	187,966	6,200
July	12	2011	--	--	156,126	37,997	194,124	9,605	180,517	190,122	121
July	13	2011	--	--	154,211	37,825	192,036	56,430	133,471	189,901	3,036
July	14	2011	--	--	132,187	33,171	165,358	119,203	50,157	169,360	3,156
July	15	2011	--	--	155,884	38,704	194,588	189,122	363	189,485	3,164
July	16	2011	--	--	156,375	38,092	194,466	188,464	24	188,488	3,162
July	17	2011	--	--	156,322	38,213	194,535	191,135	24	191,159	3,036
July	18	2011	--	--	156,618	38,118	194,736	190,840	24	190,864	1,550
July	19	2011	--	--	157,129	37,403	194,532	188,128	29	188,157	4,608
July	20	2011	--	--	156,948	37,760	194,708	185,440	24	185,464	1
July	21	2011	--	--	157,007	37,782	194,789	184,611	28	184,639	2,891
July	22	2011	--	--	156,585	38,448	195,033	186,148	26	186,175	3,029
July	23	2011	--	--	157,034	37,705	194,739	195,362	29	195,391	3,030
July	24	2011	--	--	156,958	37,878	194,836	195,137	27	195,164	3,025
July	25	2011	--	--	156,789	38,098	194,887	190,667	26	190,693	3,282
July	26	2011	--	--	156,700	38,252	194,952	187,181	35	187,217	3,169
July	27	2011	--	--	38,172	9,775	47,947	44,798	31	44,828	2
July	28	2011	--	--	72,184	17,465	89,649	96,514	33	96,546	2
July	29	2011	--	--	156,491	38,270	194,761	188,348	29	188,377	3,040
July	30	2011	--	--	156,936	37,581	194,518	187,613	33	187,646	2,995
July	31	2011	--	--	156,955	37,691	194,645	189,069	34	189,103	3,040
Total Monthly Volumes (gal)			0	0	4,588,151	1,122,571	5,710,722	3,189,168	2,391,010	5,580,178	90,308
Average Pump/Injection Rates (gpm)			0.0	0.0	102.8	25.1	127.9	71.4	53.6	125.0	2.0

NOTES: gal: gallons gpm: gallons per minute RO: Reverse Osmosis

- a. Extraction wells TW 3D and PE 1 were operated during July 2011 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 2011.
- b. Effluent was discharged into injection wells IW-02 and IW-03.
- c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during July 2011 is approximately 0.70 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

August 2011 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

Month	Day	Year	Extraction Well System					Injection Well System			RO Brine
			TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
August	1	2011	--	--	156,439	37,622	194,062	189,102	31	189,133	2
August	2	2011	--	--	149,351	36,218	185,569	188,058	28	188,087	3,174
August	3	2011	--	--	149,451	36,648	186,100	104,097	83,466	187,563	3,025
August	4	2011	--	--	156,234	38,885	195,119	19	182,121	182,140	2,891
August	5	2011	--	--	155,718	39,714	195,432	18	191,767	191,785	3,029
August	6	2011	--	--	150,354	38,125	188,480	1	179,380	179,382	3,151
August	7	2011	--	--	156,770	38,228	194,998	2	195,680	195,682	5,937
August	8	2011	--	--	156,890	38,049	194,939	26	188,821	188,847	3,030
August	9	2011	--	--	156,747	38,232	194,979	0	183,344	183,344	6,604
August	10	2011	--	--	156,981	37,960	194,941	104,152	85,285	189,437	3,418
August	11	2011	--	--	144,801	35,365	180,165	187,827	24	187,852	3,168
August	12	2011	--	--	156,652	38,181	194,833	188,897	22	188,919	3,165
August	13	2011	--	--	156,642	38,317	194,958	189,855	23	189,877	3,175
August	14	2011	--	--	156,106	39,042	195,149	83,810	95,977	179,787	6,088
August	15	2011	--	--	31,493	7,965	39,458	12	45,339	45,352	4
August	16	2011	--	--	5	6	11	3	22	24	3
August	17	2011	--	--	6	4	10	3	25	28	2
August	18	2011	--	--	40,519	12,702	53,221	305	32,994	33,299	3,320
August	19	2011	--	--	155,750	38,720	194,470	0	195,981	195,981	2,902
August	20	2011	--	--	155,445	39,061	194,506	3	189,776	189,779	5,981
August	21	2011	--	--	154,938	39,758	194,696	11	189,725	189,736	2,606
August	22	2011	--	--	140,617	35,321	175,938	0	170,803	170,803	2,892
August	23	2011	--	--	156,071	38,431	194,502	1	188,447	188,448	5,853
August	24	2011	--	--	156,442	37,943	194,385	41,459	147,613	189,072	3,557
August	25	2011	--	--	155,479	37,962	193,441	5	188,501	188,506	3,035
August	26	2011	--	--	155,202	37,516	192,718	0	186,897	186,897	5,972
August	27	2011	--	--	155,487	37,148	192,635	0	187,199	187,199	3,026
August	28	2011	--	--	155,317	37,421	192,737	0	188,143	188,143	5,565
August	29	2011	--	--	155,084	37,682	192,766	2	191,239	191,241	3,175
August	30	2011	--	--	140,174	34,943	175,117	101,151	69,062	170,213	3,163
August	31	2011	--	--	154,678	38,287	192,965	83,305	100,411	183,716	3,143
Total Monthly Volumes (gal)			0	0	4,221,841	1,041,457	5,263,298	1,462,125	3,658,145	5,120,270	104,056
Average Pump/Injection Rates (gpm)			0.0	0.0	94.6	23.3	117.9	32.8	81.9	114.7	2.3

NOTES: gal: gallons gpm: gallons per minute RO: Reverse Osmosis

a. Extraction wells TW 3D and PE 1 were operated during August 2011 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 2011.

b. Effluent was discharged into injection wells IW-02 and IW-03.

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during August 2011 is approximately 0.74 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

September 2011 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

Month	Day	Year	Extraction Well System					Injection Well System			RO Brine
			TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
September	1	2011	--	--	154,661	38,383	193,044	1	192,973	192,974	3,163
September	2	2011	--	--	147,698	35,448	183,146	0	169,843	169,843	3,087
September	3	2011	--	--	140,401	33,725	174,126	9	175,713	175,722	6,221
September	4	2011	--	--	155,034	37,628	192,662	0	187,456	187,456	2,895
September	5	2011	--	--	154,886	37,948	192,834	0	186,980	186,980	3,058
September	6	2011	--	--	154,643	38,052	192,694	0	191,970	191,970	4
September	7	2011	--	--	149,741	37,552	187,292	4	183,943	183,947	2,942
September	8	2011	--	--	154,220	38,315	192,535	129	187,531	187,660	3,173
September	9	2011	--	--	154,417	38,129	192,546	3	187,971	187,973	2,905
September	10	2011	--	--	154,121	38,496	192,617	5	187,236	187,242	3,026
September	11	2011	--	--	154,410	38,180	192,590	174,485	18,296	192,781	5
September	12	2011	--	--	154,344	38,251	192,595	179,703	18	179,721	2,923
September	13	2011	--	--	151,510	38,666	190,176	191,170	10	191,179	3,063
September	14	2011	--	--	152,569	38,058	190,626	186,361	16	186,378	6,141
September	15	2011	--	--	154,345	37,904	192,248	191,142	21	191,163	2,910
September	16	2011	--	--	154,678	37,311	191,989	188,753	25	188,778	3,058
September	17	2011	--	--	154,390	37,739	192,129	191,373	17	191,390	3,068
September	18	2011	--	--	154,028	38,265	192,293	190,287	18	190,305	5
September	19	2011	--	--	154,600	37,419	192,019	190,483	26	190,509	3,052
September	20	2011	--	--	153,680	37,615	191,295	185,096	20	185,115	3,011
September	21	2011	--	--	151,597	37,262	188,859	187,650	22	187,672	2,912
September	22	2011	--	--	154,336	37,579	191,915	105,680	84,180	189,859	4
September	23	2011	--	--	153,921	38,093	192,014	2	185,895	185,897	2,914
September	24	2011	--	--	154,150	37,739	191,888	0	188,636	188,636	2,908
September	25	2011	--	--	153,830	38,276	192,106	0	184,799	184,799	3,186
September	26	2011	--	--	154,223	37,717	191,940	7	187,833	187,840	2,914
September	27	2011	--	--	153,530	38,720	192,251	0	189,981	189,981	1,735
September	28	2011	--	--	150,809	37,611	188,420	0	189,105	189,105	1,189
September	29	2011	--	--	154,177	37,679	191,856	4	185,644	185,648	3,316
September	30	2011	--	--	154,217	37,586	191,803	15	186,144	186,159	2,936
Total Monthly Volumes (gal)			0	0	4,593,164	1,131,346	5,724,510	2,162,363	3,452,321	5,614,683	81,726
Average Pump/Injection Rates (gpm)			0.0	0.0	106.3	26.2	132.5	50.1	79.9	130.0	1.9

NOTES: gal: gallons gpm: gallons per minute RO: Reverse Osmosis

- a. Extraction wells TW 3D and PE 1 were operated during September 2011 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 2011.
- b. Effluent was discharged into injection wells IW-02 and IW-03.
- c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during September 2011 is approximately 0.49 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

October 2011 Operational Data

IM-3 Groundwater Extraction and Treatment System
 PG&E Topock Compressor Station, Needles, California

Month	Day	Year	Extraction Well System					Injection Well System			RO Brine
			TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
October	1	2011	--	--	154,209	37,688	191,897	1	188,455	188,456	3,040
October	2	2011	--	--	154,298	37,512	191,810	3	185,357	185,359	2,900
October	3	2011	--	--	153,904	38,130	192,034	1	187,921	187,922	2,899
October	4	2011	--	--	154,382	37,728	192,110	15	186,624	186,639	3,319
October	5	2011	--	--	149,803	38,016	187,819	27,520	161,169	188,689	6
October	6	2011	--	--	154,979	37,857	192,835	137,112	53,495	190,606	3,752
October	7	2011	--	--	155,730	38,325	194,055	189,940	14	189,954	2,220
October	8	2011	--	--	156,133	37,844	193,978	188,507	12	188,519	3,054
October	9	2011	--	--	156,621	37,218	193,839	188,359	15	188,374	7
October	10	2011	--	--	156,514	37,400	193,914	111,992	78,628	190,620	3,050
October	11	2011	--	--	156,642	37,290	193,932	0	189,643	189,643	2,908
October	12	2011	--	--	156,891	36,909	193,800	1,451	187,792	189,243	3,177
October	13	2011	--	--	156,041	37,658	193,699	13	191,608	191,621	3,069
October	14	2011	--	--	58,637	14,710	73,347	42,064	22,103	64,167	1,554
October	15	2011	--	--	153,041	33,943	186,984	120,559	70,425	190,984	3,045
October	16	2011	--	--	154,845	38,646	193,492	17	193,467	193,484	4
October	17	2011	--	--	155,939	38,251	194,190	0	192,430	192,430	3,065
October	18	2011	--	--	154,292	37,234	191,526	1	184,331	184,332	3,176
October	19	2011	--	--	162,978	29,524	192,502	1,287	189,626	190,913	3,146
October	20	2011	--	--	157,413	37,549	194,962	5	190,369	190,373	3,159
October	21	2011	--	--	157,537	37,427	194,964	28	190,359	190,386	3,161
October	22	2011	--	--	157,729	37,220	194,949	31	188,737	188,768	3,029
October	23	2011	--	--	157,565	37,530	195,095	35	188,561	188,596	3,190
October	24	2011	--	--	157,821	37,176	194,997	31,329	159,630	190,959	6
October	25	2011	--	--	146,462	35,248	181,710	21,768	164,788	186,557	3,272
October	26	2011	--	--	157,260	37,895	195,156	11,288	173,097	184,386	3,173
October	27	2011	--	--	157,720	37,222	194,941	104,399	91,293	195,692	3,053
October	28	2011	--	--	157,801	37,234	195,035	191,343	13	191,356	9
October	29	2011	--	--	157,666	37,557	195,223	190,332	18	190,350	3,189
October	30	2011	--	--	157,406	38,199	195,605	191,575	17	191,592	2,917
October	31	2011	--	--	155,872	37,651	193,523	187,127	25	187,152	3,156
Total Monthly Volumes (gal)			0	0	4,734,132	1,129,789	5,863,921	1,938,099	3,810,021	5,748,120	78,704
Average Pump/Injection Rates (gpm)			0.0	0.0	106.1	25.3	131.4	43.4	85.3	128.8	1.8

NOTES: gal: gallons gpm: gallons per minute RO: Reverse Osmosis

- a. Extraction wells TW 3D and PE 1 were operated during October 2011 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 October 2011.
- b. Effluent was discharged into injection wells IW-02 and IW-03.
- c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during October 2011 is approximately 0.63 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

November 2011 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

Month	Day	Year	Extraction Well System					Injection Well System			RO Brine
			TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
November	1	2011	--	--	129,567	31,143	160,710	163,717	16	163,733	2,919
November	2	2011	--	--	149,487	36,062	185,549	186,391	1,903	188,293	10
November	3	2011	--	--	156,443	37,852	194,295	188,413	763	189,176	3,084
November	4	2011	--	--	153,619	37,051	190,670	116,113	71,055	187,168	2,912
November	5	2011	--	--	157,515	37,714	195,229	190,858	21	190,879	2,921
November	6	2011	--	--	157,794	37,235	195,029	195,938	21	195,958	2,918
November	7	2011	--	--	157,795	37,171	194,966	190,853	22	190,875	13
November	8	2011	--	--	157,709	37,475	195,184	197,956	14	197,970	3,009
November	9	2011	--	--	127,284	30,331	157,615	156,312	11	156,323	3,323
November	10	2011	--	--	157,472	37,739	195,211	192,594	17	192,611	2,866
November	11	2011	--	--	157,749	37,201	194,950	191,950	14	191,964	3,019
November	12	2011	--	--	157,897	37,193	195,090	191,808	11	191,819	710
November	13	2011	--	--	157,619	37,705	195,324	191,608	11	191,619	2,301
November	14	2011	--	--	150,900	35,980	186,880	185,664	19	185,683	3,011
November	15	2011	--	--	157,547	37,671	195,219	185,466	17	185,483	3,177
November	16	2011	--	--	140,721	33,791	174,512	173,779	9	173,788	3,154
November	17	2011	--	--	157,712	37,308	195,020	192,659	19	192,677	2,903
November	18	2011	--	--	132,282	32,149	164,431	154,847	11	154,858	3,206
November	19	2011	--	--	157,503	37,655	195,158	199,166	16	199,182	3,018
November	20	2011	--	--	157,172	37,323	194,495	189,560	13	189,573	3,042
November	21	2011	--	--	157,696	37,209	194,906	190,117	18	190,135	3,031
November	22	2011	--	--	157,546	37,423	194,969	191,106	16	191,122	2,880
November	23	2011	--	--	157,831	36,937	194,768	171,161	19,151	190,312	2,968
November	24	2011	--	--	157,911	36,833	194,744	190,051	14	190,065	2,903
November	25	2011	--	--	157,341	38,039	195,380	196,131	13	196,144	3,190
November	26	2011	--	--	157,548	37,662	195,210	188,445	26	188,471	247
November	27	2011	--	--	157,753	37,404	195,158	193,382	10	193,392	2,799
November	28	2011	--	--	157,875	37,073	194,949	187,737	12	187,749	3,047
November	29	2011	--	--	158,169	36,740	194,909	191,245	15	191,259	3,041
November	30	2011	--	--	137,873	33,593	171,465	140,333	34,877	175,210	3,100
Total Monthly Volumes (gal)			0	0	4,589,331	1,092,661	5,681,992	5,475,360	128,132	5,603,492	78,721
Average Pump/Injection Rates (gpm)			0.0	0.0	106.2	25.3	131.5	126.7	3.0	129.7	1.8

NOTES: gal: gallons gpm: gallons per minute RO: Reverse Osmosis

- a. Extraction wells TW 3D and PE 1 were operated during November 2011 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 November 2011.
- b. Effluent was discharged into injection wells IW-02 and IW-03.
- c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during November 2011 is approximately 0.00 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

December 2011 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

Month	Day	Year	Extraction Well System					Injection Well System			RO Brine
			TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
December	1	2011	--	--	155,445	37,039	192,484	176,400	17	176,417	3,147
December	2	2011	--	--	144,561	34,370	178,931	188,143	17	188,159	2,919
December	3	2011	--	--	157,138	37,818	194,956	190,143	18	190,161	3,047
December	4	2011	--	--	157,592	37,171	194,763	189,589	13	189,602	3,153
December	5	2011	--	--	157,325	37,623	194,948	187,956	8	187,964	3,157
December	6	2011	--	--	157,573	37,110	194,684	192,759	8	192,766	3,152
December	7	2011	--	--	153,111	36,175	189,286	192,625	12	192,638	3,102
December	8	2011	--	--	153,959	36,918	190,877	185,103	1,327	186,431	3,151
December	9	2011	--	--	156,946	37,364	194,310	173,671	12,746	186,416	3,173
December	10	2011	--	--	157,204	37,298	194,502	197,184	16	197,201	2,901
December	11	2011	--	--	157,456	36,909	194,366	189,891	17	189,908	3,044
December	12	2011	--	8,740	141,673	33,599	184,013	181,587	30	181,616	3,037
December	13	2011	--	7,496	141,921	37,358	186,775	188,715	12	188,727	3,157
December	14	2011	--	--	136,328	32,780	169,108	171,991	382	172,374	3,295
December	15	2011	--	--	155,126	36,955	192,081	167,991	20,129	188,119	3,166
December	16	2011	--	--	155,123	36,372	191,496	191,669	17	191,687	2,955
December	17	2011	--	--	155,355	36,563	191,918	190,095	12	190,107	2,895
December	18	2011	--	--	155,499	36,456	191,956	194,193	11	194,205	2,901
December	19	2011	--	--	139,459	32,870	172,329	174,290	14	174,304	3,024
December	20	2011	--	--	155,411	36,478	191,890	186,226	16	186,242	2,911
December	21	2011	--	--	155,227	36,896	192,123	187,186	261	187,447	3,181
December	22	2011	--	--	155,446	36,428	191,874	192,420	11	192,431	3,027
December	23	2011	--	--	155,709	36,046	191,755	191,514	10	191,524	10
December	24	2011	--	--	155,788	36,043	191,831	189,744	13	189,756	3,037
December	25	2011	--	--	155,286	36,961	192,248	190,505	9	190,514	3,037
December	26	2011	--	--	155,294	36,977	192,271	190,072	12	190,084	3,009
December	27	2011	--	--	155,437	36,750	192,188	190,175	9	190,184	3,015
December	28	2011	--	--	108,352	25,714	134,066	131,178	16	131,194	3,145
December	29	2011	--	--	155,274	36,900	192,174	187,833	13	187,846	3,116
December	30	2011	--	--	155,013	37,447	192,460	198,247	14	198,261	3,095
December	31	2011	--	--	155,045	37,257	192,302	190,022	16	190,038	3,156
Total Monthly Volumes (gal)			0	16,237	4,706,076	1,118,649	5,840,962	5,749,116	35,206	5,784,322	92,113
Average Pump/Injection Rates (gpm)			0.0	0.4	105.4	25.1	130.8	128.8	0.8	129.6	2.1

NOTES: gal: gallons gpm: gallons per minute RO: Reverse Osmosis

- a. Extraction wells TW-3D and PE-1 were operated during December 2011 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 December 2011.
- b. Effluent was discharged into injection wells IW-02 and IW-03.
- c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during December 2011 is approximately 0.61 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

Appendix C
Flowmeter Calibration Records

Endress+Hauser

People for Process Automation

Flow Calibration with Adjustment

30201334-1304708

WWRA-008929F

Purchase order number

US-465002381-20 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C037216000

Serial N°

Tag N°

FCP-6.F

Calibration rig

155.6102 us.gal/min ($\pm 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9184

Calibration factor

20

Zero point

76.8 °F

Water temperature

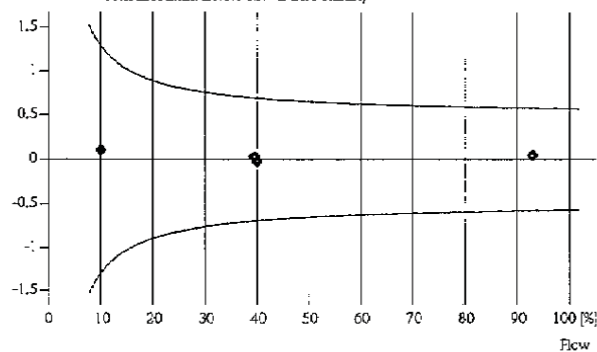
Flow [%]	Flow [us.gal/min]	Duration [s]	V target [us.gal]	V meas. [us.gal]	Δ o.r.* [%]	Outp.** [mA]
9.9	15.4	30.2	7.7528	7.7611	0.11	5.59
39.5	61.4	30.2	30.907	30.917	0.03	10.32
39.9	62.1	30.2	31.246	31.239	-0.02	10.38
93.0	144.7	30.2	72.803	72.836	0.05	18.88
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.

Tolerance limit: $\pm 0.5\%$ o.r.* \pm Zero stability



For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cemay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).



Leonard McGee

Operator

Certified acc. to
ISO 9001, Reg.-N° 030502.2
ISO 14001, Reg.-N° EMS561046

07-15-2011

Date of calibration

Endress+Hauser Flowtec, Division USA
2330 Endress Place
Greenwood, IN 46143

Flow Calibration without Adjustment

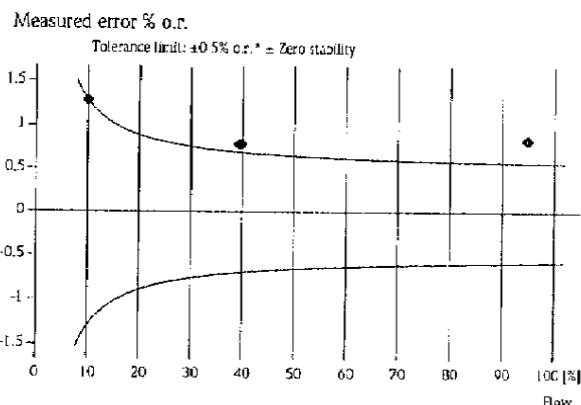
30201330-1304708

WWRA-008929F
 Purchase order number
 US-465002381-20 / Endress+Hauser Flowtec
 Order N°/Manufacturer
 23P50-ALIA1AA022AW
 Order code
 PROMAG 23 P 2"
 Transmitter/Sensor
 6C037216000
 Serial N°
 Tag N°

FCP-6.F
 Calibration rig
 155.6102 us.gal/min (± 100%)
 Calibrated full scale
 Current 4 - 20 mA
 Calibrated output
 0.9258
 Calibration factor
 20
 Zero point
 75.9 °F
 Water temperature

Flow [%]	Flow [us.gal/min]	Duration [s]	V target [us.gal]	V meas. [us.gal]	Δ o.r.* [%]	Outp.** [mA]
9.9	15.4	30.2	7.7490	7.8501	1.31	5.60
39.3	61.1	30.2	30.760	31.006	0.80	10.34
39.7	61.8	30.2	31.109	31.358	0.80	10.41
94.9	147.7	30.2	74.312	74.944	0.85	19.31
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

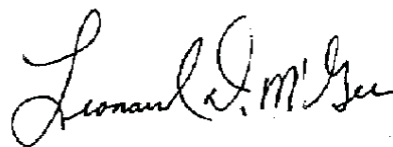
*o.r.: of rate
 **Calculated value (4 - 20 mA)



For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).



Leonard McGee
 Operator

Certified acc. to
 ISO 9001, Reg.-N° 030502.2
 ISO 14001, Reg.-N° EMS561046

07-15-2011

Date of calibration

Endress+Hauser Flowtec, Division USA
 2330 Endress Place
 Greenwood, IN 46143

Flow Calibration with Adjustment

30201328-1304707

WWRA008929F

Purchase order number

US-465002380-10 / Endress+Hauser Flowtec

Order: N°/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C037116000

Serial N°

Tag N°

FCP-6.F

Calibration rig

155.6102 us.gal/min ($\pm 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9106

Calibration factor

0

Zero point

75.4 °F

Water temperature

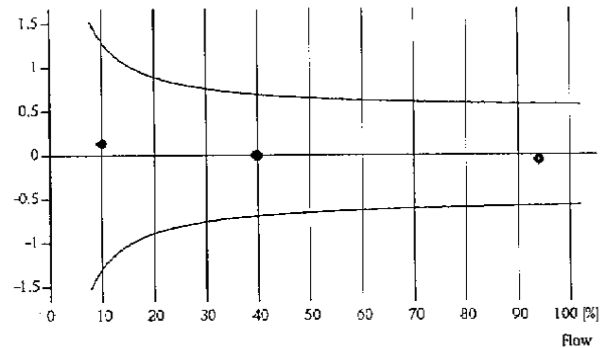
Flow [%]	Flow [us.gal./min]	Duration [%]	V target [us.gal]	V meas. [us.gal]	Δ o.r.* [%]	Outp.** [mA]
9.9	15.4	30.2	7.7531	7.7639	0.14	5.59
39.4	61.4	30.2	30.874	30.873	0.00	10.31
39.9	62.1	30.2	31.207	31.206	0.00	10.38
94.1	146.4	30.2	73.642	73.601	-0.05	19.04
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate

** Calculated value (4 - 20 mA)

Measured error % o.r.

Tolerance limit: $\pm 0.5\%$ o.r.* \pm Zero stability



For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Carnay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).

07-15-2011

Date of calibration

Endress+Hauser Flowtec, Division USA
2330 Endress Place
Greenwood, IN 46143

Leonard McGee

Operator

Certified acc. to
ISO 9001, Reg.-N° 030502.2
ISO 14001, Reg.-N° EMSS61046



People for Process Automation

Flow Calibration without Adjustment

30201327-1304707

WWRA008929F

Purchase order number

US-465002380-10 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C037116000

Serial N°

Tag N°

FCP-6.F

Calibration rig

155.6102 us.gal/min ($\pm 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9195

Calibration factor

0

Zero point

74.9 °F

Water temperature

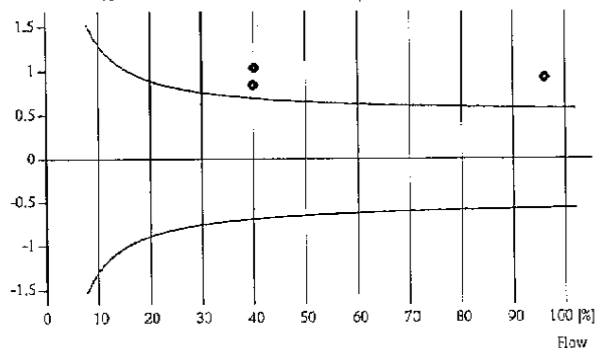
Flow [%]	Flow [us.gal/min]	Duration [s]	V target [us.gal]	V meas [us.gal]	Δ o.r.* [%]	Outp.** [mA]
10.0	15.5	30.2	7.7934	7.9184	1.60	5.62
39.8	61.9	30.2	31.146	31.410	0.85	10.42
40.0	62.2	30.2	31.325	31.654	1.05	10.47
96.0	149.4	30.2	75.197	75.894	0.93	19.51
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.

Tolerance limit: $\pm 0.5\%$ o.r.* \pm Zero stability



For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).

Leonard McGee

Operator

Certified acc. to
ISO 9001, Reg.-N° 030502.2
ISO 14001, Reg.-N° EMS561046

07-15-2011

Date of calibration

Endress+Hauser Flowtec, Division USA
2330 Endress Place
Greenwood, IN 46143

Flow Calibration with Adjustment

90092171-1385072

WWRA-000923-F

Purchase order number

US-19050353-20 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter, Sensor

7700F216000

Serial N°

~~FIT-103~~

Installed at TW-2D 7/6/11

~~PE-1~~

AR

Tag N°

FCP-6.F

Calibration rig

155.6102 GPM ($\pm 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9289

Calibration factor

0

Zero point

74.9 °F

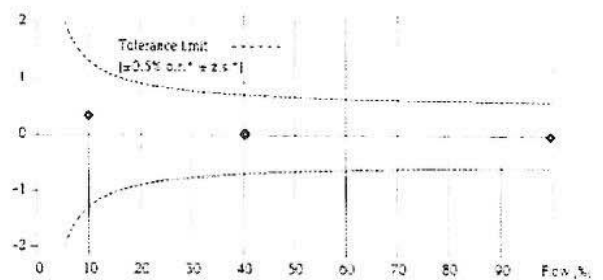
Water temperature

Flow [m³]	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ corr. [%]	Outp.** [mA]
10.0	15.5	30.1	7.7642	7.7895	0.33	5.60
40.5	62.9	30.1	31.549	31.556	0.02	10.47
40.5	62.9	30.1	31.546	31.541	-0.02	10.47
99.7	155.1	30.1	77.735	77.718	-0.02	19.95
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*Flow of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



*Zero stability

For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.
 The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

M. E. Trueblood Jr.

Morris E. Trueblood Jr.

Operator

Certified acc. to
 MIL-STD-45662A
 ISO 9001, Reg-N° 030502.2

11-30-2006

Date of calibration

Endress+Hauser Flowtec, Division USA
 2330 Endress Place
 Greenwood, IN 46143

Flow Calibration with Adjustment

30057870-1275191

41724888

Purchase Order Number

USA-49310090-40 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1RA022AW

Order Code

PROMAG 23 P 2"

Transmitter/Sensor

6A022016000

Serial N°

FIT-101 / TW-2 S / installed 7/28/05

Tag N°

FCP-6.C

Calibration rig

155.6102 GPM ($\pm 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9207

Calibration factor

0

Zero point

74.1 °F

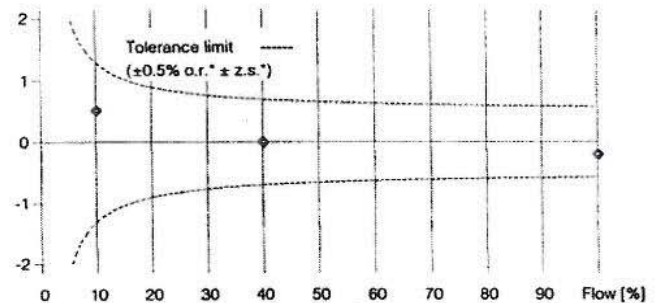
Water temperature

Flow [%]	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ o.r.* [%]	Outp.** [mA]
10.0	15.6	30.0	7.7910	7.8318	0.52	5.61
40.0	62.3	30.0	31.157	31.160	0.01	10.40
40.1	62.4	30.0	31.229	31.229	0.00	10.42
100.2	155.9	30.0	78.017	77.856	-0.21	20.00
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



*z.s.: Zero stability

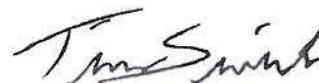
For detailed data concerning output specifications of the unit under test, see technical informations (TI)

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

11-29-2004

Date of calibration

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143



Tim Swick

Operator

Certified acc. to
MIL-STD-45662A
ISO 9001, Reg.-N° 030502.2

Flow Calibration with Adjustment

30171212-1304705

WWRA-006931-F

Purchase order number

US-19068473-30 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C036F16000

Serial N°

Tag N°

FCP-6.F

Calibration rig

155.6102 us.gal/min ($\cong 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9101

Calibration factor

-34

Zero point

78.7 °F

Water temperature

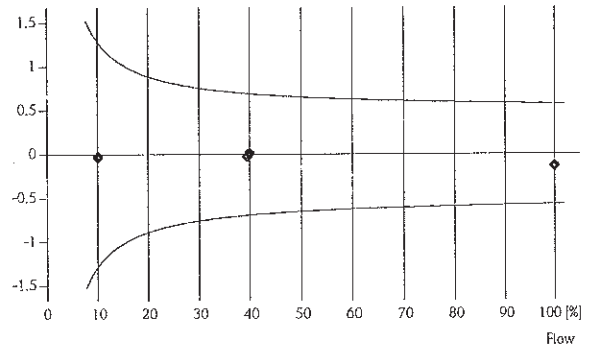
Flow [%]	Flow [us.gal/min]	Duration [s]	V target [us.gal]	V meas. [us.gal]	Δ o.r.* [%]	Outp.** [mA]
10.1	15.7	30.2	7.8942	7.8921	-0.03	5.61
39.5	61.5	30.2	30.956	30.950	-0.02	10.32
39.9	62.1	30.2	31.263	31.268	0.02	10.39
100.0	155.7	30.2	78.338	78.232	-0.14	19.98
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.

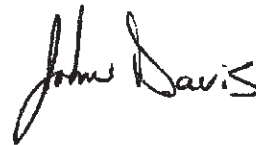
Tolerance limit: $\pm 0.5\%$ o.r.* \pm Zero stability



For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).



John Davis

Operator

Certified acc. to
 MIL-STD-45662A
 ISO 9001, Reg.-N° 030502.2

08-06-2010

Date of calibration

Endress+Hauser Flowtec, Division USA
 2330 Endress Place
 Greenwood, IN 46143

Flow Calibration with Adjustment

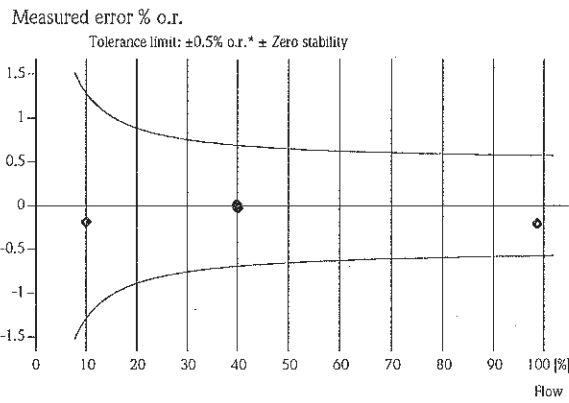
30171217-1275192

WWRA-006931-F
 Purchase order number
 US-19068473-20 / Endress+Hauser Flowtec
 Order N°/Manufacturer
 23P50-AL1A1RA022AW
 Order code
 PROMAG 23 P 2"
 Transmitter/Sensor
 6A022116000
 Serial N°
 Tag N°

FCP-6.F
 Calibration rig
 155.6102 us.gal/min ($\pm 100\%$)
 Calibrated full scale
 Current 4 - 20 mA
 Calibrated output
 0.9092
 Calibration factor
 0
 Zero point
 79.6 °F
 Water temperature

Flow [%]	Flow [us.gal/min]	Duration [s]	V target [us.gal]	V meas. [us.gal]	Δ o.r.* [%]	Outp.** [mA]
10.0	15.5	30.2	7.8009	7.7865	-0.18	5.59
39.9	62.0	30.2	31.203	31.209	0.02	10.38
40.1	62.4	30.2	31.360	31.353	-0.02	10.41
98.8	153.8	30.2	77.402	77.243	-0.20	19.78
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

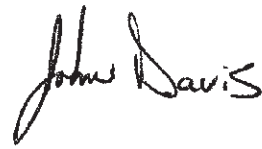
*o.r.: of rate
 **Calculated value (4 - 20 mA)



For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).



08-06-2010
 Date of calibration
 Endress+Hauser Flowtec, Division USA
 2330 Endress Place
 Greenwood, IN 46143

John Davis
 Operator
 Certified acc. to
 MIL-STD-45662A
 ISO 9001, Reg.-N° 030502.2

Flow Calibration without Adjustment

30171214-1275192

WWRA-006931-F

Purchase order number

US-19068473-20 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1RA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6A022116000

Serial N°

Tag N°

FCP-6.F

Calibration rig

155.6102 us.gal/min ($\pm 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9111

Calibration factor

0

Zero point

79.2 °F

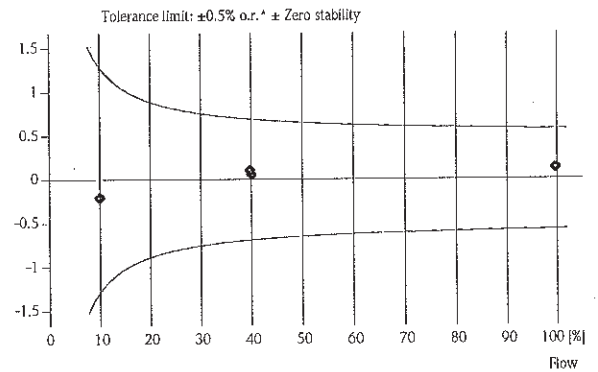
Water temperature

Flow [%]	Flow [us.gal/min]	Duration [s]	V target [us.gal]	V meas. [us.gal]	Δ o.r.* [%]	Outp.** [mA]
10.0	15.5	30.2	7.8089	7.7928	-0.21	5.59
39.8	61.9	30.2	31.149	31.183	0.11	10.37
40.0	62.3	30.2	31.347	31.364	0.06	10.41
99.8	155.3	30.2	78.162	78.264	0.13	19.99
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).



John Davis

Operator

Certified acc. to
 MIL-STD-45662A
 ISO 9001, Reg.-N° 030502.2

08-06-2010

Date of calibration

Endress+Hauser Flowtec, Division USA
 2330 Endress Place
 Greenwood, IN 46143



People for Process Automation

Flow Calibration with Adjustment

30202337-1-385113

WWRA008929F
Purchase order number
US-465002382-30 / Endress+Hauser Flowtec
Order N°/Manufacturer
23P80-AL1A1AA022AW
Order code
PROMAG 23 P 3"
Transmitter/Sensor
7700C616000
Serial N°
-
Tag N°

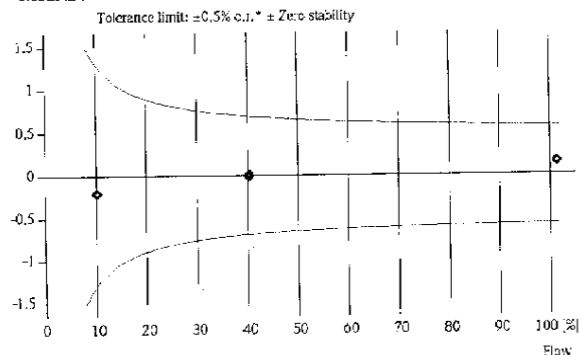
FCP-7.1.B
Calibration rig
398.3621 us.gal/min (± 100%)
Calibrated full scale
Current 4 - 20 mA
Calibrated output
1.1670
Calibration factor
35
Zero point
82.3 °F
Water temperature

Flow [%]	Flow [us.gal/min]	Duration [s]	V target [us.gal]	V meas. [us.gal]	Δ o.r.* [%]	Outp.** [mA]
10.1	40.0	60.1	40.074	39.992	-0.20	5.60
40.2	160.2	60.1	160.332	160.322	-0.01	10.43
40.2	160.2	60.1	160.400	160.424	0.01	10.44
101.4	404.0	60.1	404.438	405.041	0.15	20.25
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.

The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).

07-25-2011

Date of calibration

Endress+Hauser Flowtec, Division USA
2330 Endress Place
Greenwood, IN 46143

Taylor Shepard

Operator

Certified acc. to
ISO 9001, Reg.-N° 030502.2
ISO 14001, Reg.-N° EMS561046



People for Process Automation

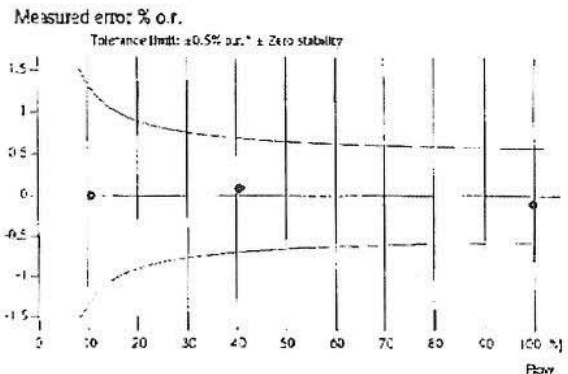
Flow Calibration with Adjustment

20132467-1304709

WWRA-004329-F
 Purchase order number
 US-19061458-10 / Endress+Hauser Flowtec
 Order N°/Manufacturer
 23P50-AL1A1AAC22AW
 Order code
 PROMAG 23 P 2"
 Transmitter/Sensor
 6C037316C00
 Serial N° *Installed at RO Concentrate 4/1/2011*
~~FIT-205~~ ~~FIT-1702~~ ~~IW-02~~ **AR**
 Tag N°

FCP-6.C
 Calibration rig
 155.6102 GPM ($\pm 100\%$)
 Calibrated full scale
 Current 4 - 20 mA
 Calibrated output
 0.9146
 Calibration factor
 0
 Zero point
 76.2 °F
 Water temperature

Flow m³	Flow (GPM)	Duration h	V target (US GAL)	V meas (US GAL)	Δ out.* %	Outp.** (mA)
10.0	15.5	30.1	7.7933	7.7939	0.01	5.63
40.2	62.5	30.1	31.394	31.422	0.09	10.43
40.2	62.5	30.1	31.416	31.448	0.10	10.44
99.8	155.3	30.1	78.006	77.928	-0.10	19.95
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-



*o.r.: of rate
 **Calibrated value (4 - 20 mA)

For detailed data concerning output specifications of the unit under test, see technical informations (TI), chapter Performance characteristics.
 The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.
 Endress+Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).

C2-26-2009
 Date of calibration:
 Endress+Hauser Flowtec, Division USA
 2330 Endress Place
 Greenwood, IN 46143

William Darnell
 William Darnell
 Operator:
 Certified acc. to
 MIL-STD-4562A
 ISO 9001, Reg. N° 030502.2

Appendix D
Fourth Quarter 2011 Laboratory
Analytical Reports

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

November 3, 2011

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: REVISED CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-187, GROUNDWATER
MONITORING PROJECT, TLI NO.: 997603

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-187 groundwater-monitoring project for Total Dissolved and Hexavalent Chromium, Total Dissolved Solids, and Specific Conductivity. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on October 4, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Per Mr. Shawn Duffy's request, the pH analysis was cancelled.

Samples for Total Dissolved Chromium were analyzed by method EPA 200.8 with the approval of Mr. Shawn Duffy of CH2M Hill.

Due to analyst error, the results for Total Dissolved Solids by SM 2540C were reported incorrectly. It was determined that the analyst inadvertently switched the sample I.D.s during the analysis. The sample I.D.s and results have been corrected and the revised report pages and raw data are attached.

No other violations or non-conformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
for
Mona Nassimi
Manager, Analytical Services

Michael Ngo
Michael Ngo
Quality Assurance/Quality Control Officer



Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 997603
Date Received: October 4, 2011
Revision 1; November 3, 2011

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
997603-001	PE-01-187	E120.1	NONE	10/4/2011	12:30	EC	4930	umhos/cm	2.00
997603-001	PE-01-187	E200.8	LABFLT	10/4/2011	12:30	Chromium	10.1	ug/L	1.0
997603-001	PE-01-187	E218.6	LABFLT	10/4/2011	12:30	Chromium, hexavalent	11.1	ug/L	0.20
997603-001	PE-01-187	SM2540C	NONE	10/4/2011	12:30	Total Dissolved Solids	2900	mg/L	125
997603-002	TW-03D-187	E120.1	NONE	10/4/2011	12:22	EC	8420	umhos/cm	2.00
997603-002	TW-03D-187	E200.8	LABFLT	10/4/2011	12:22	Chromium	1010	ug/L	4.0
997603-002	TW-03D-187	SM2540C	NONE	10/4/2011	12:22	Total Dissolved Solids	5040	mg/L	125
997603-002	TW-03D-187	SM3500-CrB	LABFLT	10/4/2011	12:22	Chromium, hexavalent	991	ug/L	100

ND: Non Detected (below reporting limit)

Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01 will have two (2) significant figures.
Result above or equal to 0.01 will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Laboratory No. 997603

Page 1 of 8

Printed 11/2/2011

Samples Received on 10/4/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-187	997603-001	10/04/2011 12:30	Water
TW-03D-187	997603-002	10/04/2011 12:22	Water

Specific Conductivity - EPA 120.1

Batch 10EC11B

10/7/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997603-001 Specific Conductivity	umhos/cm	10/07/2011	1.00	0.0380	2.00	4930
997603-002 Specific Conductivity	umhos/cm	10/07/2011	1.00	0.0380	2.00	8420

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 997603-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	4940	4930	0.203	0 - 10

Duplicate

Lab ID = 997653-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7330	7340	0.136	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	702	706	99.4	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	704	706	99.7	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	707	706	100.	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

008



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 8

Project Number: 424973.01.DM

Printed 11/2/2011

Chrome VI by EPA 218.6

Batch 10CrH11H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997603-001 Chromium, Hexavalent	ug/L	10/10/2011 09:05	1.05	0.0400	0.20	11.1

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 997603-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	11.2	11.1	0.835	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.93	5.00	98.6	90 - 110

Matrix Spike

Lab ID = 997603-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	27.8	27.0(15.9)	105.	90 - 110

Matrix Spike

Lab ID = 997604-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	4.69	5.25(5.25)	89.3	90 - 110

Matrix Spike

Lab ID = 997604-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	0.00	1.06(1.06)	0.00	90 - 110

Matrix Spike

Lab ID = 997604-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	137.	136.(78.8)	102.	90 - 110

Matrix Spike

Lab ID = 997604-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	0.00	1.06(1.06)	0.00	90 - 110

Matrix Spike

Lab ID = 997604-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	0.00	1.06(1.06)	0.00	90 - 110

Matrix Spike

Lab ID = 997604-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	4.68	5.25(5.25)	89.2	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 6 of 8

Printed 11/3/2011
Revised

Chromium, Hexavalent by SM 3500-Cr B

Batch 10CrH11A

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 997603-002 Chromium, Hexavalent, ug/L, 10/07/2011 19:04, 10.0, 43.5, 100., 991.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Chromium, Hexavalent, ug/L, 1.00, ND

Duplicate

Lab ID = 997746-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 25.0, 2870, 2840, 1.12, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 91.9, 100., 91.9, 90 - 110

Matrix Spike

Lab ID = 997746-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 25.0, 5260, 5340(2500), 97.0, 85 - 115

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 54.3, 60.0, 90.5, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 56.7, 60.0, 94.5, 90 - 110

Total Dissolved Solids by SM 2540 C

Batch 10TDS11A

10/6/2011

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 997603-001 Total Dissolved Solids, mg/L, 10/06/2011, 1.00, 0.400, 125, 2900. Row 2: 997603-002 Total Dissolved Solids, mg/L, 10/06/2011, 1.00, 0.400, 125, 5040.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Total Dissolved Solids, mg/L, 1.00, ND

Duplicate

Lab ID = 997645-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Total Dissolved Solids, mg/L, 1.00, 124, 127, 2.39, 0 - 5

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Total Dissolved Solids, mg/L, 1.00, 484, 500., 96.8, 90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 7 of 8
Printed 11/2/2011

Metals by EPA 200.8, Dissolved

Batch 101011A

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include 997603-001 Chromium and 997603-002 Chromium.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row: Chromium ug/L 1.00 ND

Duplicate

Lab ID = 997604-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Chromium ug/L 5.00 ND 0.00 0 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium ug/L 1.00 51.3 50.0 102. 85 - 115

Matrix Spike

Lab ID = 997604-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium ug/L 5.00 235. 250.(250.) 94.2 75 - 125

Matrix Spike Duplicate

Lab ID = 997604-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Chromium ug/L 5.00 242. 250.(250.) 97.0 75 - 125

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium ug/L 1.00 51.9 50.0 104. 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium ug/L 1.00 50.1 50.0 100. 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium ug/L 1.00 52.4 50.0 105. 90 - 110

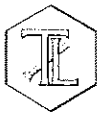
MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium ug/L 1.00 52.6 50.0 105. 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Chromium ug/L 1.00 50.1 50.0 100. 90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 8

Project Number: 424973.01.DM

Printed 11/2/2011

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	53.5	50.0	107.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.0	50.0	98.0	80 - 120

Serial Dilution

Lab ID = 997603-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	100	955.	1010	5.62	0 - 10

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Revised 11/2/11

Batch: 10TDS11A

Date Calculated: 10/7/11

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	74.2342	74.2344	74.2344	0.0000	No	0.0002	2.0	25.0	ND	1
997551	20	50.6110	50.6726	50.6726	0.0000	No	0.0616	3080.0	125.0	3080.0	1
997556-1	480	105.3572	105.3594	105.3592	0.0002	No	0.0020	4.2	5.2	ND	1
997556-2	480	105.2916	105.2926	105.2926	0.0000	No	0.0010	2.1	5.2	ND	1
997577-16	50	51.0895	51.1261	51.1261	0.0000	No	0.0366	732.0	50.0	732.0	1
997577-23	100	76.5274	76.5586	76.5586	0.0000	No	0.0312	312.0	25.0	312.0	1
997602-1	20	75.3063	75.3915	75.3915	0.0000	No	0.0852	4260.0	125.0	4260.0	1
997602-2	20	49.4177	49.5093	49.5093	0.0000	No	0.0916	4580.0	125.0	4580.0	1
997603-2	20	47.0085	47.1092	47.1092	0.0000	No	0.1007	5035.0	125.0	5035.0	1
997603-1	20	51.1310	51.1891	51.1891	0.0000	No	0.0581	2905.0	125.0	2905.0	1
997645-1	100	72.4709	72.4836	72.4836	0.0000	No	0.0127	127.0	25.0	127.0	1
997645-1D	100	67.7381	67.7505	67.7505	0.0000	No	0.0124	124.0	25.0	124.0	1
LCS	100	67.2182	67.2666	67.2666	0.0000	No	0.0484	484.0	25.0	484.0	1
LCS											1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

C = mL of sample filtered.

RL = reporting limit.

ND = not detected (below the reporting limit)


Analyst Printed Name


Analyst Signature


Reviewer Printed Name


Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Revised 11/2/11

Batch: 10TDS11A

Date Calculated: 10/7/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
997551	5460	0.56	3549	0.87
997556-1	15.1	ND	9.815	ND
997556-2	0.65	ND	0.4225	ND
997577-16	1327	0.55	862.55	0.85
997577-23	571	0.55	371.15	0.84
997602-1	7490	0.57	4868.5	0.88
997602-2	7820	0.59	5083	0.90
997603-2	8520	0.59	5538	0.91
997603-1	5010	0.58	3256.5	0.89
997645-1	254	0.50	165.1	0.77
997645-1D	254	0.49	165.1	0.75
LCS				






TRUESDAIL LABORATORIES, INC.
14201 Franklin Avenue, Tustin, CA 92780-7008
(714)730-6239 FAX: (714) 730-6462
www.truesdail.com

CHAIN OF CUSTODY RECORD

IM3Plant-EW-187

997603

COC Number

TURNAROUND TIME 10 Days

DATE 10/04/11 PAGE 1 OF 1

COMPANY CH2M HILL /E2		PROJECT NAME PG&E Topock IM3Plant-EW		PHONE 530-229-3303 FAX 530-339-3303		ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612		P.O. NUMBER 424973.01.DM		SAMPLERS (SIGNATURE) <i>C. KueyMt</i>		COMMENTS	
Rec'd 10/04/11		s 997603										NUMBER OF CONTAINERS	
PE-01-187	10/04/11	12:30	Ground water	X	X	X	X	X	X	X		4	} PH = 7 (see p. 7)
TW-03D-187	10/04/11	12:22	Ground water	X	X	X	X	X	X	X		4	
<div style="border: 2px solid black; padding: 5px; display: inline-block;"> ALERT!! Level III QC </div>													
<div style="border: 2px solid black; padding: 5px; display: inline-block;"> For Sample Conditions See Form Attached </div>													
													TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	<i>[Signature]</i>	Printed Name	Company/ Agency	Date/ Time	10-4-11	15:30
Signature (Received)	<i>Rafael Davila</i>	Printed Name	Company/ Agency	Date/ Time	10-4-11	
Signature (Relinquished)	<i>[Signature]</i>	Printed Name	Company/ Agency	Date/ Time	10-4-11	15:13
Signature (Received)	<i>Rafael Davila</i>	Printed Name	Company/ Agency	Date/ Time	10-4-11	21:21
Signature (Relinquished)	<i>[Signature]</i>	Printed Name	Company/ Agency	Date/ Time	10/4/11	21:30
Signature (Received)	<i>[Signature]</i>	Printed Name	Company/ Agency	Date/ Time		

SAMPLE CONDITIONS

RECEIVED COOL WARM 4.7 °C °F

CUSTODY SEALED YES NO

SPECIAL REQUIREMENTS:

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
10-5-2011	997594-7	9.5	N/A	N/A	N/A	C
	-8	↓	↓	↓	↓	↓
	-9	↓	↓	↓	↓	↓
	-10	↓	↓	↓	↓	↓
	-11	↓	↓	↓	↓	↓
10-5-2011	997595-1	9.5	N/A	N/A	N/A	C
	-2	↓	↓	↓	↓	↓
	-3	↓	↓	↓	↓	↓
	-4	↓	↓	↓	↓	↓
	-5	↓	↓	↓	↓	↓
	-6	↓	↓	↓	↓	↓
	-7	↓	↓	↓	↓	↓
	-8	↓	↓	↓	↓	↓
	-9	↓	↓	↓	↓	↓
	-10	↓	↓	↓	↓	↓
	-11	↓	↓	↓	↓	↓
	-12	↓	↓	↓	↓	↓
	-13	↓	↓	↓	↓	↓
10/05/11	997602	7.0	5.0 mL	9.5	10:10am	ALi
10/5/11	997603-1	7.0	5.0 mL	9.5	10:10 Am	C
	-2	7.0	5.0 mL	9.5	10:10 Am	C
10/5/11	997604-1	9.5	N/A	N/A	N/A	C
	-2	↓	↓	↓	↓	↓
	-3	↓	↓	↓	↓	↓
	-4	↓	↓	↓	↓	↓
	-5	↓	↓	↓	↓	↓
	-6	↓	↓	↓	↓	↓
	-7	↓	↓	↓	↓	↓
	-8	↓	↓	↓	↓	↓
	-9	↓	↓	↓	↓	↓
	-10	↓	↓	↓	↓	↓
	-11	↓	↓	↓	↓	↓

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
997708(1-45/11-20)	<1	<2	10/07/11	M.M	yes	no
997709(1-35/6/10/20)	↓	↓	↓	↓	↓	↓
997745(1-6)	plant >2	>2	10/05/11	PK	NO	yes
997746(1-6)	plant >2	>2	10/05/11	PK	NO	yes
997763(1-10)	<1	<2	10/10/11	M.M	yes	NO
9977603(1-2)	<1	<2	10/9/11	PK	NO	NO
9977604(1-11)	<1	<2	10/10/11	ICK	NO	NO
9977870	<1	>2	10/12/11	ES	NO	yes @ 9:00 pm
9977871	↓	↓	↓	↓	↓	↓
997745 total + dissolved (1-7)	<1	<2	10/13/11	PK	NO	NO
997746	<1	<2	10/13/11	PK	NO	NO
9977652	<1	<2	10/13/11	PK	NO	NO
9977653(1-12)	<1	<2	10/13/11	PK	NO	NO
9977852(1-4)	>1	<2	10/13/11	M.M	yes	NO
9977891	Sludge	-	10/13/11	M.M	yes	TTL C
9977816(1-2)	Soil	-	10/13/11	M.M	yes	↓
9977867	↓	-	↓	↓	↓	↓
9977649(1-2)	plant	>2	10/12/11	PK	NO	yes
9977917	solid	-	10/14/11	M.M	yes	STLC
9977871	>1	<2	10/14/11	M.M	yes	NO
9977872	↓	↓	↓	↓	↓	↓
9977875	↓	↓	↓	↓	↓	↓
9977876	↓	↓	↓	↓	↓	↓
9977880	↓	↓	↓	↓	↓	↓
9977881	↓	↓	↓	↓	↓	↓
9977877	↓	↓	↓	↓	↓	↓
9977893	↓	↓	↓	↓	↓	↓
9977920	solid	-	10/14/11	M.M	yes	TTL C
9977987	<1	<2	10/19/11	M.M	yes	- NO
9977919(1-2)	<1	<2	10/20/11	M.M	yes	NO
9977956	>1	<2	↓	↓	↓	↓
9977958	↓	↓	↓	↓	↓	↓
998008	↓	↓	↓	↓	↓	↓
998016(1-2)	>1	↓	↓	↓	↓	↓
998030(1-5)	<1	<2	10/21/11	M.M	yes	NO
997968	<1	>2	10/21/11	ES	NO	yes @ 9:00 pm
998095	>1	<2	10/25/11	M.M	yes	-
998060	↓	↓	↓	↓	↓	-
998076	↓	↓	↓	↓	↓	-
998077	↓	↓	↓	↓	↓	-
998036	solid	-	↓	↓	yes	TTL C
998093	↓	-	↓	↓	↓	↓
998110(1-9)	<1	<2	10/26/11	M.M	yes	-
998111	↓	↓	↓	↓	↓	-
998112(1-7)	↓	↓	↓	↓	↓	-
998113(1-8)	↓	↓	↓	↓	↓	-
998114(1-8)	↓	↓	↓	↓	↓	-
998115(1-11)	↓	↓	↓	↓	↓	-
997884(1-6)	plant	>2	10/17/11	PK	NO	yes on 10/17/11



ALERT !!
Level III QC

Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 997603

Date Delivered: 10/04/11 Time: 2130 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.2°C Yes No N/A
7. Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client N/A
12. Were samples pH checked? pH = 8.6-0.0 Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other _____

16. Comments: _____

17. Sample Check-In completed by **Truesdail** Log-In/Receiving: _____

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

November 10, 2011

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-330 PROJECT, SLUDGE
MONITORING,
TLI NO.: 997829

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-330 project sludge monitoring. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.


The samples were received and delivered with the chain of custody on October 11, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

All final results and associated dilution factors are reported on a dry weight basis.

No violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


fo - Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Soil Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 997829

Date: November 10, 2011

Collected: October 11, 2011

Received: October 11, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 300.0	Anions	Giawad Ghenniwa
SM 2540 B	% Moisture	Gautam Savani
SW 6010B	Metals by ICP	Ethel Suico
SW 6020	Metals by ICP/MS	Katia Kiarashpoor
SW 7199	Hexavalent Chromium	David Blackburn



Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 997829
Date Received: October 11, 2011

Analytical Results Summary

<u>Lab I.D.</u>	<u>Sample I.D.</u>	<u>Sample Time</u>	<u>SW 7199</u> Hexavalent Chromium <u>mg/kg</u>	<u>EPA 300.0</u> Fluoride <u>mg/kg</u>	<u>EPA 300.0</u> Nitrate as N <u>mg/kg</u>	<u>SM 2540 B</u> % Moisture <u>%</u>
997829	SC-Sludge-WDR-330	15:20	39.4	25.8	23.2	49.6

ND: Non Detected (below reporting limit)
mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01ppm will have two (2) significant figures.
Result above or equal to 0.01ppm will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.



Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 997829
Date Received: October 11, 2011

Analytical Results Summary

METALS ANALYSIS: Total Metal Analyses as Requested

Lab I.D.	Sample ID	Sample Coll. Time	Date of Analysis	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead
				SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
997829	SC-Sludge-WDR-330	15:20		79.9	ND	58.3	ND	11.6	4720	9.38	111	8.93
				Manganese	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	
				SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
				10/20/11	10/20/11	10/20/11	10/20/11	10/20/11	10/20/11	10/20/11	10/20/11	
				455	9.46	39.8	ND	ND	ND	133	57.8	
				Mercury								
				SW 6020								
				mg/kg								
				11/08/11								

NOTES:
ND: Not detected, or below limit of detection

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Soil Sample
Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM
Prep. Batch: 11CrH11J

Laboratory No.: 997829
Date: November 10, 2011
Collected: October 11, 2011
Received: October 11, 2011
Prep/ Analyzed: October 24, 2011
Analytical Batch: 11CrH11J

Investigation: Hexavalent Chromium by IC Using Method SW 7199

Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
997829	SC-Sludge-WDR-330	15:20	14:39	mg/kg	10.0	7.93	39.4

QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	997829	39.4	39.8	1.00%	< 20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	997829	39.4	10.0	15.9	159	193	198	96.8%	75-125%	Yes
IMS	997829	39.4	50.0	40.9	2044	1990	2083	95.5%	75-125%	Yes
PDMS	997829	39.4	25.0	12.7	317	373	357	105%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
Blank	ND	<0.400	---	<0.400	Yes
MRCSS	2.11	2.00	105%	90% - 110%	Yes
MRCVS#1	2.08	2.00	104%	90% - 110%	Yes
LCS	2.08	2.00	104%	80% - 120%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

REPORT

Attention: Shawn Duffy

Laboratory No.: 997829

Sample: One (1) Soil Sample

Date: November 10, 2011

Project Name: PG&E Topock Project

Collected: October 11, 2011

Project No.: 424973.01.DM

Received: October 11, 2011

P.O. No.: 424973.01.DM

Prep/ Analyzed: October 17, 2011

Analytical Batch: 10SOLID11E

Investigation:

Total Solids by SM 2540 B

Analytical Results % Moisture

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Units</u>	<u>Results</u>
997829	SC-Sludge-WDR-330	15:20	%	49.6

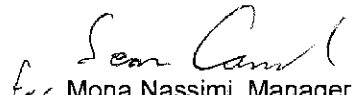
QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	997829	49.6	49.7	0.23%	≤ 20%	Yes

ND: Below the reporting limit (Not Detected).

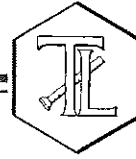
DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


for Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Soil Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

P.O. No.: 424973.01.DM

Laboratory No.: 997829

Date: November 10, 2011

Collected: October 11, 2011

Received: October 11, 2011

Prep/ Analyzed: October 11, 2011

Analytical Batch: 10AN11J

Investigation:

Fluoride by Ion Chromatography using EPA 300.0

Analytical Results Fluoride

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
997829	SC-Sludge-WDR-330	15:20	13:21	mg/kg	1.00	3.97	25.8

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	997833-1	1.50	1.49	0.53%	≤ 20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	997833-1	1.50	1.00	2.00	2.00	3.41	3.50	95.6%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
Blank	ND	<0.500	---	<0.500	Yes
MRCCS	4.11	4.00	103%	90% - 110%	Yes
MRCVS#1	3.13	3.00	104%	90% - 110%	Yes
MRCVS#2	3.12	3.00	104%	90% - 110%	Yes
LCS	4.10	4.00	103%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


Mona Nassimi, Manager
Analytical Services

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Soil Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

P.O. No.: 424973.01.DM

Laboratory No.: 997829

Date: November 10, 2011

Collected: October 11, 2011

Received: October 11, 2011

Prep/ Analyzed: October 11, 2011

Analytical Batch: 10AN11J

Investigation: Nitrate as N by Ion Chromatography using EPA 300.0

Analytical Results Nitrate as N

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
997829	SC-Sludge-WDR-330	15:20	13:21	mg/kg	1.00	7.93	23.2

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	997673-1	22.7	22.7	0.10%	≤ 20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	997673-1	22.7	10.0	4.00	40.0	65.3	62.7	106%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
Blank	ND	<0.500	---	<0.500	Yes
MRCSS	3.96	4.00	99.1%	90% - 110%	Yes
MRCVS#1	3.00	3.00	100%	90% - 110%	Yes
MRCVS#2	2.99	3.00	99.6%	90% - 110%	Yes
MRCVS#3	2.99	3.00	99.6%	90% - 110%	Yes
LCS	3.96	4.00	99.1%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


Mona Nassimi, Manager
Analytical Services

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

015

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Samples: One (1) Soil Sample
Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Investigation: Total Metal Analyses as Requested

Laboratory No.: 997829

Reported: November 10, 2011

Collected: October 11, 2011

Received: October 11, 2011

Analyzed: See Below

Analytical Results

SAMPLE ID: SC-Sludge-WDR-330		Time Collected: 15:20		LAB ID: 997829				
Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Antimony	SW 6010B	79.9	5.00	mg/kg	4.81	102011A	10/20/11	13:37
Arsenic	SW 6010B	ND	5.00	mg/kg	4.81	102011A	10/20/11	13:37
Barium	SW 6010B	58.3	5.00	mg/kg	4.81	102011A	10/20/11	13:37
Beryllium	SW 6010B	ND	2.00	mg/kg	1.92	101911A	10/19/11	12:07
Cadmium	SW 6010B	11.6	5.00	mg/kg	4.81	102011A	10/20/11	13:37
Chromium	SW 6010B	4720	10.0	mg/kg	9.62	102011A	10/20/11	13:37
Cobalt	SW 6010B	9.38	5.00	mg/kg	4.81	102011A	10/20/11	13:37
Copper	SW 6010B	111	5.00	mg/kg	4.81	102011A	10/20/11	13:37
Lead	SW 6010B	8.93	5.00	mg/kg	4.81	102011A	10/20/11	13:37
Manganese	SW 6010B	455	5.00	mg/kg	4.81	102011A	10/20/11	13:37
Mercury	SW 6020	ND	10.0	mg/kg	0.196	110711C	11/08/11	07:35
Molybdenum	SW 6010B	9.46	5.00	mg/kg	4.81	102011A	10/20/11	13:37
Nickel	SW 6010B	39.8	5.00	mg/kg	4.81	102011A	10/20/11	13:37
Selenium	SW 6010B	ND	5.00	mg/kg	4.81	102011A	10/20/11	13:37
Silver	SW 6010B	ND	5.00	mg/kg	4.81	102011A	10/20/11	13:37
Thallium	SW 6010B	ND	5.00	mg/kg	4.81	102011A	10/20/11	13:37
Vanadium	SW 6010B	133	5.00	mg/kg	4.81	102011A	10/20/11	13:37
Zinc	SW 6010B	57.8	5.00	mg/kg	4.81	102011A	10/20/11	13:37

NOTES:

Sample results and reporting limits reported on a dry weight basis.

ND: Not detected, or below limit of detection.

DF: Dilution factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

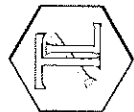

Mona Nassimi, Manager
Analytical Services

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

016

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy
Samples: One (1) Soil Sample
Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 997829
Reported: November 10, 2011
Collected: October 11, 2011
Received: October 11, 2011

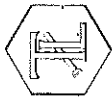
Quality Control/Quality Assurance Report

DIGESTED BLANK

MRCVS

MRCSS

Parameter	Method	Batch	Units	Blank	RL	MRCSS			MRCVS				
						Observed Value	TRUE Value	% Rec	Control Limits	Observed Value	TRUE Value	% Rec	Control Limits %
Antimony	SW 6010B	102011A	mg/kg	ND	2.00	5.02	5.00	100%	90-110%	4.86	5.00	97.2%	90-110%
Arsenic	SW 6010B	102011A	mg/kg	ND	0.500	5.00	5.00	100%	90-110%	4.79	5.00	95.8%	90-110%
Barium	SW 6010B	102011A	mg/kg	ND	1.00	5.27	5.00	105%	90-110%	5.08	5.00	102%	90-110%
Beryllium	SW 6010B	101911A	mg/kg	ND	1.00	4.87	5.00	97.5%	90-110%	4.75	5.00	95.0%	90-110%
Cadmium	SW 6010B	102011A	mg/kg	ND	0.500	5.08	5.00	102%	90-110%	4.91	5.00	98.2%	90-110%
Chromium	SW 6010B	102011A	mg/kg	ND	1.00	4.97	5.00	99.4%	90-110%	4.84	5.00	96.9%	90-110%
Cobalt	SW 6010B	102011A	mg/kg	ND	1.00	4.90	5.00	98.0%	90-110%	4.83	5.00	96.5%	90-110%
Copper	SW 6010B	102011A	mg/kg	ND	1.00	5.02	5.00	100%	90-110%	4.76	5.00	95.2%	90-110%
Lead	SW 6010B	102011A	mg/kg	ND	1.00	4.77	5.00	95.4%	90-110%	4.61	5.00	92.3%	90-110%
Manganese	SW 6010B	102011A	mg/kg	ND	1.00	5.00	5.00	100%	90-110%	4.77	5.00	95.5%	90-110%
Mercury	SW 6020	110711C	mg/kg	ND	0.100	0.00201	0.00200	100%	90-110%	0.00199	0.00200	99.6%	90-110%
Molybdenum	SW 6010B	102011A	mg/kg	ND	1.00	4.89	5.00	97.9%	90-110%	4.84	5.00	96.8%	90-110%
Nickel	SW 6010B	102011A	mg/kg	ND	1.00	4.97	5.00	99.3%	90-110%	4.82	5.00	96.4%	90-110%
Selenium	SW 6010B	102011A	mg/kg	ND	1.00	4.99	5.00	99.8%	90-110%	4.90	5.00	98.1%	90-110%
Silver	SW 6010B	102011A	mg/kg	ND	1.00	4.94	5.00	98.9%	90-110%	4.74	5.00	94.9%	90-110%
Thallium	SW 6010B	102011A	mg/kg	ND	2.00	4.96	5.00	99.2%	90-110%	4.86	5.00	97.1%	90-110%
Vanadium	SW 6010B	102011A	mg/kg	ND	1.00	4.98	5.00	99.6%	90-110%	4.78	5.00	95.6%	90-110%
Zinc	SW 6010B	102011A	mg/kg	ND	2.00	5.25	5.00	105%	90-110%	5.04	5.00	101%	90-110%



TRUESDAIL LABORATORIES, INC.

Report Continued

INTERFERENCE CHECK STANDARD (ICS A+B #1)

INTERFERENCE CHECK STANDARD (ICS A+B #2)

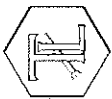
Parameter	Method	Units	ICS		% Rec.	Control Limits	ICS		% Rec.	Control Limits
			Obs.	Theo.			Obs.	Theo.		
Arsenic	SW 6010B	mg/kg	1.88	2.00	94.2%	80-120%	1.84	2.00	92.2%	80-120%
Cadmium	SW 6010B	mg/kg	1.93	2.00	96.7%	80-120%	1.91	2.00	95.6%	80-120%
Chromium	SW 6010B	mg/kg	1.86	2.00	93.2%	80-120%	1.90	2.00	95.2%	80-120%
Cobalt	SW 6010B	mg/kg	1.90	2.00	95.2%	80-120%	1.88	2.00	94.1%	80-120%
Copper	SW 6010B	mg/kg	1.93	2.00	96.5%	80-120%	1.91	2.00	95.7%	80-120%
Manganese	SW 6010B	mg/kg	1.89	2.00	94.7%	80-120%	1.85	2.00	92.4%	80-120%
Mercury	SW 6020	mg/kg	0.00200	0.00200	100%	80-120%	0.00203	0.00200	101%	80-120%
Molybdenum	SW 6010B	mg/kg	0.0366	0.0400	91.5%	80-120%	0.0361	0.0400	90.3%	80-120%
Nickel	SW 6010B	mg/kg	1.90	2.00	95.2%	80-120%	1.88	2.00	93.9%	80-120%
Silver	SW 6010B	mg/kg	1.72	2.00	85.9%	80-120%	1.67	2.00	83.3%	80-120%
Zinc	SW 6010B	mg/kg	2.01	2.00	101%	80-120%	2.00	2.00	99.8%	80-120%

LABORATORY CONTROL SAMPLES

SAMPLE DUPLICATES

Parameter	Method	Units	LCS		% Rec.	Control Limits	SAMPLE ID		% RPD	Precision Control Limits %
			Obs.	Theo.			SAMPLE RESULT	DUP RESULT		
Antimony	SW 6010B	mg/kg	111.1	100	111%	85-115%	997829	79.9	80.3	0.50%
Arsenic	SW 6010B	mg/kg	108	100	108%	85-115%	997829	ND	ND	0.00%
Barium	SW 6010B	mg/kg	102	100	102%	85-115%	997829	58.3	66.9	13.7%
Beryllium	SW 6010B	mg/kg	102	100	102%	85-115%	997829	ND	ND	0.00%
Cadmium	SW 6010B	mg/kg	106	100	106%	85-115%	997829	11.6	11.5	0.84%
Chromium	SW 6010B	mg/kg	99.0	100	99.0%	85-115%	997829	4720	4790	1.47%
Cobalt	SW 6010B	mg/kg	104	100	104%	85-115%	997829	9.38	9.75	3.84%
Copper	SW 6010B	mg/kg	108	100	108%	85-115%	997829	111	95.5	15.3%
Lead	SW 6010B	mg/kg	93.2	100	93.2%	85-115%	997829	8.93	7.91	12.1%
Manganese	SW 6010B	mg/kg	101	100	101%	85-115%	997829	455	442	2.96%
Mercury	SW 6020	mg/kg	0.225	0.200	113%	85-115%	997829	ND	ND	0.00%
Molybdenum	SW 6010B	mg/kg	108	100	108%	85-115%	997829	9.46	9.79	3.42%
Nickel	SW 6010B	mg/kg	104	100	104%	85-115%	997829	39.8	41.0	3.04%
Selenium	SW 6010B	mg/kg	110	100	110%	85-115%	997829	ND	ND	0.00%
Silver	SW 6010B	mg/kg	98.2	100	98.2%	85-115%	997829	ND	ND	0.00%
Thallium	SW 6010B	mg/kg	106	100	106%	85-115%	997829	ND	ND	0.00%
Vanadium	SW 6010B	mg/kg	93.0	100	93.0%	85-115%	997829	133	136	2.15%
Zinc	SW 6010B	mg/kg	111	100	111%	85-115%	997829	57.8	59.8	3.40%

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

MATRIX SPIKE		Sample Result	DF	Spike Level	Total Amt. of Spike	Theo. Value	MS Obs.	% Rec.	Accuracy Control Limits %		
Sample ID	Parameter	Units	Method	Result	DF	Spike Level	Total Amt. of Spike	Theo. Value	MS Obs.	% Rec.	Accuracy Control Limits %
997829	Antimony	mg/kg	SW 6010B	79.9	5.00	192	961	1041	998	95.5%	75-125%
997829	Arsenic	mg/kg	SW 6010B	0.00	5.00	192	961	961	903	93.9%	75-125%
997829	Barium	mg/kg	SW 6010B	58.3	5.00	192	961	1020	960	93.8%	75-125%
997829	Beryllium	mg/kg	SW 6010B	0.00	2.00	96.1	192	192	215	112%	75-125%
997829	Cadmium	mg/kg	SW 6010B	11.6	5.00	192	961	973	901	92.5%	75-125%
997829	Chromium	mg/kg	SW 6010B	4720	10.0	192	1923	6643	6445	89.7%	75-125%
997829	Cobalt	mg/kg	SW 6010B	9.38	5.00	192	961	971	900	92.6%	75-125%
997829	Copper	mg/kg	SW 6010B	111	5.00	192	961	1073	1000	92.4%	75-125%
997829	Lead	mg/kg	SW 6010B	8.93	5.00	192	961	970	790	81.2%	75-125%
997829	Manganese	mg/kg	SW 6010B	455	5.00	192	961	1417	1302	88.1%	75-125%
997829	Mercury	mg/kg	SW 6020	0.166	10.0	0.0390	0.390	0.556	0.551	98.5%	75-125%
997829	Molybdenum	mg/kg	SW 6010B	9.46	5.00	192	961	971	921	94.8%	75-125%
997829	Nickel	mg/kg	SW 6010B	39.8	5.00	192	961	1001	923	91.9%	75-125%
997829	Selenium	mg/kg	SW 6010B	0.00	5.00	192	961	961	896	93.2%	75-125%
997829	Silver	mg/kg	SW 6010B	0.00	5.00	192	961	961	864	89.9%	75-125%
997829	Thallium	mg/kg	SW 6010B	0.00	5.00	192	961	961	902	93.8%	75-125%
997829	Vanadium	mg/kg	SW 6010B	133	5.00	192	961	1095	972	87.2%	75-125%
997829	Zinc	mg/kg	SW 6010B	57.8	5.00	192	961	1019	1012	99.2%	75-125%

ND: Not detected, or below limit of detection.

DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Mona Nassimi, Manager
Analytical Services

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Dry Weight Calculations

Date Calculated: 11/10/2011

	Sample Result Wet Weight mg/kg	Dilution Factor	% Moisture %	Sample Result Dry* Weight mg/kg	Reported Value mg/kg	Reporting Limit Wet Weight mg/kg	Reporting Limit Dry Weight mg/kg
Fluoride	13.036	---	49.6	25.8533	25.8	2.00	3.97
Nitrate as N	11.690	---	49.6	23.1839	23.2	4.00	7.93
Hexavalent Chromium	19.8686	---	49.6	39.4038	39.4	4.00	7.93
Hexavalent Chromium - Dup	20.0673	---	49.6	39.7979	39.8	4.00	7.93
Hexavalent Chromium - MS	97.3202	---	49.6	193.007	193	4.00	7.93
Hexavalent Chromium - IMS	1005.659	---	49.6	1994.445	1990	20.0	39.7
Hexavalent Chromium - PDMS	187.9424	---	49.6	372.731	373	10.0	19.8
Antimony	40.29	5.00	49.6	79.9040	79.9	2.426	4.81
Arsenic	ND	5.00	49.6	ND	ND	2.426	4.81
Barium	29.41	5.00	49.6	58.3266	58.3	2.426	4.81
Beryllium	0.6659	2.00	49.6	1.3206	ND	0.9706	1.92
Cadmium	5.834	5.00	49.6	11.5701	11.6	2.426	4.81
Chromium	2380	10.0	49.6	4720.07	4720	4.853	9.62
Cobalt	4.729	5.00	49.6	9.3787	9.38	2.426	4.81
Copper	56.16	5.00	49.6	111.3777	111	2.426	4.81
Lead	4.501	5.00	49.6	8.9265	8.93	2.426	4.81
Manganese	229.5	5.00	49.6	455.1494	455	2.426	4.81
Mercury	0.08396	10.00	49.6	0.16651	ND	0.0988	0.196
Molybdenum	4.771	5.00	49.6	9.4620	9.46	2.426	4.81
Nickel	20.07	5.00	49.6	39.8033	39.8	2.426	4.81
Selenium	ND	5.00	49.6	ND	ND	2.426	4.81
Silver	ND	5.00	49.6	ND	ND	2.426	4.81
Thallium	ND	5.00	49.6	ND	ND	2.426	4.81
Vanadium	67.20	5.00	49.6	133.273	133	2.426	4.81
Zinc	29.16	5.00	49.6	57.8308	57.8	2.426	4.81

Sample Result in Dry Weight = [Sample_w / (100-%Moisture)]*100

where:

Sample_w = Sample result in wet weight

EZ Condon

TRUESDAIL LABORATORIES, INC.



TOTAL SOLIDS BY SM 2540 B

Date of Analysis: 10/17/11

Analytical Batch: 10SOLID11E
Oven Temp, °C: 105

Lab No.	Dish Number	Weight of dish, g	Wt of wet sample, g	Wt of wet sample+ dish, g	Wt of dried residue+dish,g	Wt of dried residue, g	% Total Solids	% Moisture
997829	1	1.2715	2.0685	3.3400	2.3145	1.0430	50.423	49.577
997829D	2	1.2743	2.0907	3.3650	2.3261	1.0518	50.309	49.691

Relative Percent Difference			
Sample ID	Sample	Sample Dup	RPD
997829	49.577	49.691	0.2

$$\% \text{ Total Solids} = \frac{(A - B) * 100}{C - B} = \frac{\text{Weight of dried residue} * 100}{\text{Weight of wet sample}}$$

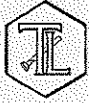
Where:
 A = Weight of dried Residue + Dish, g
 B = Weight of dish, g
 C = Weight of wet sample + Dish, g

G. Savani
 Analyst Name

[Signature]
 Analyst Signature

Mark
 Reviewer Name

Mo
 Reviewer Signature



Sample Integrity & Analysis Discrepancy Form

Client: CH2M HILL

Lab # 997829

Date Delivered: 10/11/11 Time: 21:30 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4°C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = See COC Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other _____

16. Comments: _____

17. Sample Check-In completed by **Truesdail** Log-In/Receiving: Alex

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

November 7, 2011

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-330 PROJECT, GROUNDWATER
MONITORING,
TLI NO.: 997830

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-330 project groundwater monitoring. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on October 11, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

No violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
for - Mona Nassimi
Manager, Analytical Services

Michael Ngo
Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 997830

Date: November 7, 2011

Collected: October 11, 2011

Received: October 11, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 300.0	Anions	Giawad Ghenniwa
EPA 200.7	Metals by ICP	Ethel Suico
EPA 200.8	Metals by ICP/MS	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1937

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 997830
Date Received: October 11, 2011

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
997830-001	SC-701-WDR-330	E120.1	NONE	10/11/2011	15:00	EC	36700	umhos/cm	2.00
997830-001	SC-701-WDR-330	E200.7	NONE	10/11/2011	15:00	Barium	74.4	ug/L	10.0
997830-001	SC-701-WDR-330	E200.7	NONE	10/11/2011	15:00	Manganese	28.1	ug/L	10.0
997830-001	SC-701-WDR-330	E200.7	NONE	10/11/2011	15:00	Molybdenum	105	ug/L	10.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Antimony	ND	ug/L	10.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Arsenic	1.1	ug/L	1.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Beryllium	ND	ug/L	1.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Cadmium	ND	ug/L	3.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Chromium	3.2	ug/L	1.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Cobalt	ND	ug/L	5.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Copper	ND	ug/L	5.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Lead	ND	ug/L	10.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Mercury	ND	ug/L	1.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Nickel	ND	ug/L	10.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Selenium	18.8	ug/L	10.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Silver	ND	ug/L	5.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Thallium	ND	ug/L	1.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Vanadium	ND	ug/L	5.0
997830-001	SC-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Zinc	11.0	ug/L	10.0
997830-001	SC-701-WDR-330	E218.6	LABFLT	10/11/2011	15:00	Chromium, hexavalent	2.1	ug/L	2.1
997830-001	SC-701-WDR-330	E300	NONE	10/11/2011	15:00	Fluoride	13.2	mg/L	0.500
997830-001	SC-701-WDR-330	SM2540C	NONE	10/11/2011	15:00	Total Dissolved Solids	24800	mg/L	500

ND: Non Detected (below reporting limit)
mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01ppm will have two (2) significant figures.
Result above or equal to 0.01ppm will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

004A

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800
Oakland, CA 94612

Laboratory No. 997830

Page 1 of 28

Printed 11/7/2011

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Samples Received on 10/11/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-701-WDR-330	997830-001	10/11/2011 15:00	Water

Anions By I.C. - EPA 300.0

Batch 10AN11J

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997830-001 Fluoride	mg/L	10/11/2011 10:35	5.00	0.0250	0.500	13.2

Method Blank

Parameter	Unit	DF	Result
Fluoride	mg/L	1.00	ND

Duplicate

Lab ID = 997833-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	1.00	1.49	1.50	0.401	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.10	4.00	103.	90 - 110

Matrix Spike

Lab ID = 997833-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.41	3.50(2.00)	95.7	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.11	4.00	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.13	3.00	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.12	3.00	104.	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

014



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 28

Project Number: 424973.01.DM

Printed 11/7/2011

Specific Conductivity - EPA 120.1

Batch 10EC11K

10/14/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997830-001 Specific Conductivity	umhos/cm	10/14/2011	1.00	0.0380	2.00	36700

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 997830-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	37000	36700	0.814	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	693	706	98.2	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	692	706	98.0	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	697	706	98.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	965	997	96.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	952	997	95.5	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 28

Project Number: 424973.01.DM

Printed 11/7/2011

Chrome VI by EPA 218.6

Batch 10CrH11N

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997830-001 Chromium, Hexavalent	ug/L	10/13/2011 16:22	10.5	0.273	2.1	2.1

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 997745-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	9.55	9.39	1.70	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.97	5.00	99.4	90 - 110

Matrix Spike

Lab ID = 997745-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	7.78	7.34(5.25)	108.	90 - 110

Matrix Spike

Lab ID = 997745-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.28	6.45(5.25)	96.8	90 - 110

Matrix Spike

Lab ID = 997745-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	8.76	8.35(5.25)	108.	90 - 110

Matrix Spike

Lab ID = 997745-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.42	6.21(5.25)	104.	90 - 110

Matrix Spike

Lab ID = 997745-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	35.2	35.6(26.2)	98.4	90 - 110

Matrix Spike

Lab ID = 997745-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	38.1	36.8(26.2)	105.	90 - 110

Matrix Spike

Lab ID = 997745-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	37.8	37.0(26.2)	103.	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 4 of 28
Printed 11/7/2011

Matrix Spike

Lab ID = 997830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	ND	1.06(1.06)		90 - 110

Matrix Spike

Lab ID = 997830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	3.05	6.59(5.25)	32.6	90 - 110

Matrix Spike

Lab ID = 997830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.5	12.5	12.6(10.5)	98.6	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.98	5.00	99.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.4	10.0	104.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.5	10.0	105.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.64	10.0	96.4	95 - 105



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 28

Project Number: 424973.01.DM

Printed 11/7/2011

Metals by EPA 200.7, Total

Batch 102411A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997830-001 Molybdenum	ug/L	10/24/2011 11:48	1.00	4.02	10.0	105.

Method Blank

Parameter	Unit	DF	Result
Molybdenum	ug/L	1.00	ND

Duplicate

Lab ID = 997602-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Molybdenum	ug/L	1.00	17.0	16.7	1.78	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	4900	5000	98.1	85 - 115

Matrix Spike

Lab ID = 997602-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	1960	2020(2000)	97.2	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	4860	5000	97.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	5340	5000	107.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	5320	5000	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	5150	5000	103.	90 - 110

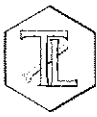
Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	40.6	40.0	102.	80 - 120

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	43.9	40.0	110.	80 - 120

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 7 of 28
Printed 11/7/2011

Metals by EPA 200.7, Total

Batch 102511A

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include Barium and Manganese with values like 74.4 and 28.1.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Rows for Barium and Manganese, both showing ND.

Duplicate

Lab ID = 997830-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Rows for Barium and Manganese.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows for Barium and Manganese.

Matrix Spike

Lab ID = 997830-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Rows for Barium and Manganese.

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows for Barium and Manganese.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Barium.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Barium.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Barium.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Manganese.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 28

Project Number: 424973.01.DM

Printed 11/7/2011

Metals by EPA 200.8, Total

Batch 101311A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997830-001 Arsenic	ug/L	10/14/2011 00:05	5.00	0.285	1.0	1.1
Chromium	ug/L	10/14/2011 00:05	5.00	0.110	1.0	3.2
Copper	ug/L	10/14/2011 00:05	5.00	0.125	5.0	ND
Mercury	ug/L	10/14/2011 00:05	5.00	0.0750	1.0	ND
Nickel	ug/L	10/14/2011 00:05	5.00	0.0750	10.0	ND
Selenium	ug/L	10/14/2011 00:05	5.00	0.340	10.0	18.8

Method Blank

Parameter	Unit	DF	Result
Aluminum	ug/L	1.00	ND
Arsenic	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Mercury	ug/L	1.00	ND
Nickel	ug/L	1.00	ND
Selenium	ug/L	1.00	ND
Copper	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 997831-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Aluminum	ug/L	5.00	ND	0.00	0	0 - 20
Arsenic	ug/L	5.00	ND	0.00	0	0 - 20
Chromium	ug/L	5.00	1.10	1.27	14.1	0 - 20
Mercury	ug/L	5.00	ND	0.00	0	0 - 20
Nickel	ug/L	5.00	ND	0.00	0	0 - 20
Selenium	ug/L	5.00	ND	0.00	0	0 - 20
Copper	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	1.97	1.98	0.303	0 - 20

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 10 of 28

Project Number: 424973.01.DM

Printed 11/7/2011

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	51.9	50.0	104.	85 - 115
Arsenic	ug/L	1.00	45.1	50.0	90.2	85 - 115
Chromium	ug/L	1.00	47.4	50.0	94.8	85 - 115
Mercury	ug/L	1.00	2.16	2.00	108.	85 - 115
Nickel	ug/L	1.00	47.3	50.0	94.6	85 - 115
Selenium	ug/L	1.00	52.7	50.0	105.	85 - 115
Copper	ug/L	1.00	48.0	50.0	96.1	85 - 115
Manganese	ug/L	1.00	47.6	50.0	95.3	85 - 115

Matrix Spike

Lab ID = 997831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	5.00	231	250.(250.)	92.4	75 - 125
Arsenic	ug/L	5.00	219.	250.(250.)	87.8	75 - 125
Chromium	ug/L	5.00	232.	251.(250.)	92.4	75 - 125
Mercury	ug/L	5.00	10.1	10.0(10.0)	101.	75 - 125
Nickel	ug/L	5.00	220.	250.(250.)	88.0	75 - 125
Selenium	ug/L	5.00	226.	250.(250.)	90.5	75 - 125
Copper	ug/L	5.00	220.	250.(250.)	87.8	75 - 125
Manganese	ug/L	5.00	230.	252.(250.)	91.2	75 - 125

Matrix Spike Duplicate

Lab ID = 997831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	5.00	226.	250.(250.)	90.3	75 - 125
Arsenic	ug/L	5.00	218.	250.(250.)	87.0	75 - 125
Chromium	ug/L	5.00	230.	251.(250.)	91.6	75 - 125
Mercury	ug/L	5.00	10.4	10.0(10.0)	104.	75 - 125
Nickel	ug/L	5.00	221.	250.(250.)	88.5	75 - 125
Selenium	ug/L	5.00	241.	250.(250.)	96.4	75 - 125
Copper	ug/L	5.00	220.	250.(250.)	88.1	75 - 125
Manganese	ug/L	5.00	228.	252.(250.)	90.4	75 - 125



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 17 of 28

Project Number: 424973.01.DM

Printed 11/7/2011

Metals by EPA 200.8, Total

Batch 102611A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997830-001 Beryllium	ug/L	10/26/2011 13:28	5.00	0.180	1.0	ND
Vanadium	ug/L	10/26/2011 13:28	5.00	0.370	5.0	ND

Method Blank

Parameter	Unit	DF	Result
Barium	ug/L	1.00	ND
Beryllium	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Vanadium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 997602-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	5.00	27.0	26.9	0.297	0 - 20
Beryllium	ug/L	5.00	ND	0.00	0	0 - 20
Chromium	ug/L	5.00	829.	822	0.896	0 - 20
Vanadium	ug/L	5.00	8.45	8.48	0.378	0 - 20
Manganese	ug/L	5.00	7.56	7.49	0.864	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	50.0	50.0	99.9	85 - 115
Beryllium	ug/L	1.00	49.8	50.0	99.5	85 - 115
Chromium	ug/L	1.00	49.3	50.0	98.6	85 - 115
Vanadium	ug/L	1.00	48.8	50.0	97.5	85 - 115
Manganese	ug/L	1.00	49.9	50.0	99.8	85 - 115

Matrix Spike

Lab ID = 997602-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	5.00	266.	277.(250.)	95.8	75 - 125
Beryllium	ug/L	5.00	246.	250.(250.)	98.4	75 - 125
Chromium	ug/L	5.00	1090	1070(250.)	108.	75 - 125
Vanadium	ug/L	5.00	266.	258.(250.)	103.	75 - 125
Manganese	ug/L	5.00	245.	257.(250.)	94.8	75 - 125

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 22 of 28

Project Number: 424973.01.DM

Printed 11/7/2011

Metals by EPA 200.8, Total

Batch 102411A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997830-001 Antimony	ug/L	10/24/2011 17:52	5.00	0.120	10.0	ND
Cadmium	ug/L	10/24/2011 17:52	5.00	0.470	3.0	ND
Cobalt	ug/L	10/24/2011 17:52	5.00	0.485	5.0	ND
Lead	ug/L	10/24/2011 17:52	5.00	0.110	10.0	ND
Silver	ug/L	10/24/2011 17:52	5.00	0.175	5.0	ND
Thallium	ug/L	10/24/2011 17:52	5.00	0.125	1.0	ND
Zinc	ug/L	10/24/2011 17:52	5.00	1.26	10.0	11.0

Method Blank

Parameter	Unit	DF	Result
Cadmium	ug/L	1.00	ND
Cobalt	ug/L	1.00	ND
Zinc	ug/L	1.00	ND
Antimony	ug/L	1.00	ND
Lead	ug/L	1.00	ND
Silver	ug/L	1.00	ND
Thallium	ug/L	1.00	ND

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cadmium	ug/L	1.00	50.0	50.0	99.9	85 - 115
Cobalt	ug/L	1.00	48.3	50.0	96.5	85 - 115
Zinc	ug/L	1.00	49.0	50.0	98.1	85 - 115
Antimony	ug/L	1.00	46.9	50.0	93.9	85 - 115
Lead	ug/L	1.00	49.8	50.0	99.6	85 - 115
Silver	ug/L	1.00	49.0	50.0	98.0	85 - 115
Thallium	ug/L	1.00	51.1	50.0	102.	85 - 115

Matrix Spike

Lab ID = 997830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Cadmium	ug/L	5.00	383.	500.(500.)	76.6	75 - 125
Cobalt	ug/L	5.00	462.	500.(500.)	92.5	75 - 125
Zinc	ug/L	5.00	476.	511(500.)	92.9	75 - 125
Antimony	ug/L	5.00	524	500.(500.)	105.	75 - 125
Lead	ug/L	5.00	415.	500.(500.)	82.9	75 - 125
Silver	ug/L	5.00	384.	500.(500.)	76.8	75 - 125
Thallium	ug/L	5.00	432.	500.(500.)	86.3	75 - 125

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 23 of 28

Project Number: 424973.01.DM

Printed 11/7/2011

Matrix Spike Duplicate

Lab ID = 997830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Cadmium	ug/L	5.00	386.	500.(500.)	77.3	75 - 125
Cobalt	ug/L	5.00	463.	500.(500.)	92.5	75 - 125
Zinc	ug/L	5.00	475.	511(500.)	92.7	75 - 125
Antimony	ug/L	5.00	517.	500.(500.)	103.	75 - 125
Lead	ug/L	5.00	417.	500.(500.)	83.3	75 - 125
Silver	ug/L	5.00	386.	500.(500.)	77.1	75 - 125
Thallium	ug/L	5.00	434.	500.(500.)	86.8	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cadmium	ug/L	1.00	50.9	50.0	102.	90 - 110
Cobalt	ug/L	1.00	48.4	50.0	96.8	90 - 110
Zinc	ug/L	1.00	50.2	50.0	100.	90 - 110
Antimony	ug/L	1.00	47.4	50.0	94.7	90 - 110
Lead	ug/L	1.00	50.4	50.0	101.	90 - 110
Silver	ug/L	1.00	50.0	50.0	99.9	90 - 110
Thallium	ug/L	1.00	51.6	50.0	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cadmium	ug/L	1.00	49.7	50.0	99.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cadmium	ug/L	1.00	49.5	50.0	99.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cadmium	ug/L	1.00	50.4	50.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cadmium	ug/L	1.00	49.9	50.0	99.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cobalt	ug/L	1.00	48.5	50.0	96.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cobalt	ug/L	1.00	47.4	50.0	94.8	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 28 of 28

Project Number: 424973.01.DM

Printed 11/7/2011

Total Dissolved Solids by SM 2540 C

Batch 10TDS11C

10/14/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997830-001 Total Dissolved Solids	mg/L	10/14/2011	1.00	0.400	500.	24800

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	1.00	ND

Duplicate

Lab ID = 997830-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	25900	24800	4.34	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	480.	500.	96.0	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services

E2 Condon



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 10TDS11C

Date Calculated: 10/19/11

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	112.3117	112.3118	112.3118	0.0000	No	0.0001	1.0	25.0	ND	1
997830	5	50.3847	50.5093	50.5089	0.0004	No	0.1242	24840.0	500.0	24840.0	1
997831	20	51.0765	51.164	51.1636	0.0004	No	0.0871	4355.0	125.0	4355.0	1
997833-1	100	72.8250	72.8817	72.8817	0.0000	No	0.0567	567.0	25.0	567.0	1
997833-2	100	65.9508	66.005	66.0046	0.0004	No	0.0538	538.0	25.0	538.0	1
997833-3	100	68.2231	68.2786	68.2786	0.0000	No	0.0555	555.0	25.0	555.0	1
997833-4	100	73.1403	73.1989	73.1985	0.0004	No	0.0582	582.0	25.0	582.0	1
997809	200	108.6910	108.7117	108.7115	0.0002	No	0.0205	102.5	12.5	102.5	1
997793	840	100.6872	100.6899	100.6899	0.0000	No	0.0027	3.2	3.0	3.2	1
997830D	5	50.1294	50.2589	50.2589	0.0000	No	0.1295	25900.0	500.0	25900.0	1
LCSD	100	111.6511	111.6991	111.6991	0.0000	No	0.0480	480.0	25.0	480.0	1
LCSD											1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

C = mL of sample filtered.

RL= reporting limit.

ND = not detected (below the reporting limit)


Analyst Printed Name


Analyst Signature


Reviewer Printed Name


Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 10TDS11C

Date Calculated: 10/19/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
997830	36700	0.68	23855	1.04
997831	7630	0.57	4959.5	0.88
997833-1	967	0.59	628.55	0.90
997833-2	960	0.56	624	0.86
997833-3	945	0.59	614.25	0.90
997833-4	1014	0.57	659.1	0.88
997809	179	0.57	116.35	0.88
997793	5.6	0.57	3.64	0.88
997830D	36700	0.71	23855	1.09
LCD				



TRUESDAIL LABORATORIES, INC.
 14201 Franklin Avenue, Tustin, CA 92780-7008
 (714)730-6239 FAX: (714) 730-6462
 www.truesdail.com

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-330]

997830

TURNAROUND TIME 10 Days
 DATE 10/11/11 PAGE 1 OF 1

COMPANY	PROJECT NAME	PHONE	ADDRESS	P.O. NUMBER	SAMPLERS (SIGNATURE)	DATE	TIME	DESCRIPTION	TITLE 22 Metals List (200.7, 200.8, 245.1)	EC (120.1)	TDS (2540 c)	Turb (2130)	Total Metals (200.7) See List Below	Ammonia (4500-NH3)	Anions (300.0) F	Anions (300.0) F, NO3, SO4	TOC (5310 C)	Total Metals (200.7) Mn	NO2 (4500-NO2B)	NUMBER OF CONTAINERS	COMMENTS
CH2M HILL /E2	PG&E Topock IM3	530-229-3303	155 Grand Ave Ste 1000 Oakland, CA 94612	408401.01.DM																	
						10/11/11	1500		X	X	X			X						3	DH=7 (Metals)
ALERT!!																					
Level III QC																					
For Sample Conditions See Form Attached																					
TOTAL NUMBER OF CONTAINERS																					

CHAIN OF CUSTODY SIGNATURE RECORD			SAMPLE CONDITIONS			
Signature (Relinquished)	Printed Name	Company/ Agency	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/>	TEMP °F
	Rafael Davila	PG&E Topock IM3				400
Signature (Received)	Printed Name	Company/ Agency	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	
	Rafael Davila	PG&E Topock IM3				
Signature (Relinquished)	Printed Name	Company/ Agency	SPECIAL REQUIREMENTS:			
	Rafael Davila	PG&E Topock IM3	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	Date/ Time	Date/ Time	
	Rafael Davila	PG&E Topock IM3	10/11/11 15:30	10/11/11 15:30	10/11/11 21:30	

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
10/10/11	997763-1	9.5	N/A	N/A	N/A	AW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
10/12/11	997830	7.0	5.0ml	9.5	8:20 a.m.	ALi
10/12/11	997831	7.0	5.0ml	9.5	8:30 a.m.	ALi
10/11/11	997709	.				
10/19/11	997987-1	9.5	N/A	N/A	N/A	AW
	-2	9.5				
	-3	9.5				
10/19/11	997988	6.0	5ml	9.5	8:20 am	AW
10/20/11	998019-1	9.5	N/A	N/A	N/A	AW
	-2	9.5	N/A	N/A	N/A	AW
10/20/11	998029-1	7.0	5.0ml	9.5	12:15 pm	AW
	-2	7.0	5.0ml	9.5	12:15pm	AW

N/A

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
997808 (1-4) 11-20	<1	<2	10/07/11	M.M	Yes	No
997809 (1-3,5,6,7,10,16)	↓	↓	↓	↓	↓	↓
9974509 (1-6)	plant >2	>2	10/05/11	PK	No	Yes
9974410 (1-6)	plant >2	>2	10/05/11	PK	No	Yes
997763 (1-10)	<1	<2	10/10/11	M.M	Yes	No
997603 (1-2)	<1	<2	10/9/11	PK	No	No
997604 (1-11)	<1	<2	10/10/11	ICK	No	No
997830	<1	>2	10/12/11	ES	No	yes @ 4:00 pm
997831	↓	↓	↓	↓	↓	↓
997745 (1-7) total + dissolved	<1	<2	10/13/11	PK	No	No
997746	<1	<2	10/13/11	PK	No	No
997652	<1	<2	10/13/11	PK	No	No
997653 (1-12)	<1	<2	10/13/11	PK	No	No
997852 (1-4)	>1	<2	10/13/11	M.M	Yes	No
997829 (1-1)	Sludge	-	10/13/11	M.M	Yes	TTL C
997816 (1-2)	Sand	-	10/13/11	M.M	Yes	↓
997867	↓	-	↓	↓	↓	↓
997649 (1-2)	plant	>2	10/12/11	PK	No	Yes
997917	Solid	-	10/14/11	M.M	Yes	STLC
997871	>1	<2	10/14/11	M.M	Yes	No
997872	↓	↓	↓	↓	↓	↓
997875	↓	↓	↓	↓	↓	↓
997876	↓	↓	↓	↓	↓	↓
997880	↓	↓	↓	↓	↓	↓
997881	↓	↓	↓	↓	↓	↓
997877	↓	↓	↓	↓	↓	↓
997893	↓	↓	↓	↓	↓	↓
997920	Solid	-	10/14/11	M.M	Yes	TTL C
997987	<1	<2	10/19/11	M.M	Yes	- No
998019 (1-2)	<1	<2	10/20/11	M.M	Yes	No
997956	>1	<2	↓	↓	↓	↓
997958	↓	↓	↓	↓	↓	↓
998008	↓	↓	↓	↓	↓	↓
998016 (1-2)	>1	↓	↓	↓	↓	↓
998030 (1-5)	<1	<2	10/21/11	M.M	Yes	No
997968	<1	>2	10/21/11	ES	No	yes @ 3:00 pm
998095	>1	<2	10/25/11	M.M	Yes	-
998060	↓	↓	↓	↓	↓	-
998076	↓	↓	↓	↓	↓	-
998077	↓	↓	↓	↓	↓	-
998036	Solid	-	↓	↓	Yes	TTL C
998093	↓	-	↓	↓	↓	↓
997110 (1-9)	<1	<2	10/26/11	M.M	Yes	-
998111	↓	↓	↓	↓	↓	-
998112 (1-7)	↓	↓	↓	↓	↓	-
998113 (1-8)	↓	↓	↓	↓	↓	-
998114 (1-8)	↓	↓	↓	↓	↓	-
998115 (1-11)	↓	↓	↓	↓	↓	-
997824 (1-6)	plant	>2	10/17/11	PK	No	Yes on 10/17/11



Sample Integrity & Analysis Discrepancy Form

Client: CH2M HILL

Lab # 997830

Date Delivered: 10/11/11 Time: 9:30 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4°C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = See COC Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other Water

16. Comments: _____

17. Sample Check-In completed by **Truesdail** Log-In/Receiving: Alex

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

October 24, 2011

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-330 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 997831

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-330 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

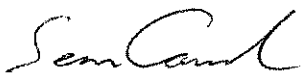
The samples were received and delivered with the chain of custody on October 11, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.


Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


for Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 997831

Date: October 24, 2011

Collected: October 11, 2011

Received: October 11, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Maksim Gorbunov
EPA 218.6	Hexavalent Chromium	Sonya Bersudsky

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 997831
Date Received: October 11, 2011

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
997831-001	SC-700B-WDR-330	E120.1	NONE	10/11/2011	13:00	EC	7630	umhos/cm	2.00
997831-001	SC-700B-WDR-330	E200.8	NONE	10/11/2011	13:00	Chromium	1.3	ug/L	1.0
997831-001	SC-700B-WDR-330	E200.8	NONE	10/11/2011	13:00	Manganese	2.0	ug/L	1.0
997831-001	SC-700B-WDR-330	E218.6	LABFLT	10/11/2011	13:00	Chromium, hexavalent	ND	ug/L	1.0
997831-001	SC-700B-WDR-330	SM2130B	NONE	10/11/2011	13:00	Turbidity	0.110	NTU	0.100
997831-001	SC-700B-WDR-330	SM2540C	NONE	10/11/2011	13:00	Total Dissolved Solids	4360	mg/L	125

ND: Non Detected (below reporting limit)
mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01ppm will have two (2) significant figures.
Result above or equal to 0.01ppm will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Laboratory No. 997831

Page 1 of 9

Printed 10/24/2011

Samples Received on 10/11/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-330	997831-001	10/11/2011 13:00	Water

Specific Conductivity - EPA 120.1

Batch 10EC111

10/12/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997831-001 Specific Conductivity	umhos/cm	10/12/2011	1.00	0.0380	2.00	7630

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 997831-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7650	7630	0.262	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	705	706	99.8	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	705	706	99.8	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710	706	100	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	1010	998	102	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	1010	998	101	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

008



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 9

Project Number: 424973.01.DM

Printed 10/24/2011

Chrome VI by EPA 218.6

Batch 10CrH11K

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997831-001 Chromium, Hexavalent	ug/L	10/12/2011 09:35	5.25	0.136	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 997653-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	15.8	15.7	0.504	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.96	5.00	99.2	90 - 110

Matrix Spike

Lab ID = 997650-018

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.41	7.03(5.30)	107.	90 - 110

Matrix Spike

Lab ID = 997650-019

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.49	7.15(5.30)	106.	90 - 110

Matrix Spike

Lab ID = 997650-020

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.05	1.06(1.06)	98.8	90 - 110

Matrix Spike

Lab ID = 997650-021

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	8.80	8.47(5.30)	106.	90 - 110

Matrix Spike

Lab ID = 997653-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.08	38.5	37.3(21.6)	105.	90 - 110

Matrix Spike

Lab ID = 997653-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.89	6.18(5.25)	94.4	90 - 110

Matrix Spike

Lab ID = 997653-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	28.6	27.8(26.2)	103.	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 9

Project Number: 424973.01.DM

Printed 10/24/2011

Matrix Spike						Lab ID = 997653-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	85.4	83.3(52.5)	104.	90 - 110
Matrix Spike						Lab ID = 997653-009
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.26	6.08(5.25)	103.	90 - 110
Matrix Spike						Lab ID = 997653-010
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.54	6.20(5.25)	106.	90 - 110
Matrix Spike						Lab ID = 997653-011
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.11	51.3	48.8(26.5)	110.	90 - 110
Matrix Spike						Lab ID = 997653-012
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.62	6.14(5.25)	109.	90 - 110
Matrix Spike						Lab ID = 997831-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.36	1.34(1.06)	102.	90 - 110
Matrix Spike						Lab ID = 997831-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.07	6.00(5.25)	101.	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.83	5.00	96.7	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103.	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100.	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.82	10.0	98.2	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.83	10.0	98.3	95 - 105

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 9

Project Number: 424973.01.DM

Printed 10/24/2011

Metals by EPA 200.8, Total

Batch 101311A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997831-001 Chromium	ug/L	10/13/2011 23:35	5.00	0.110	1.0	1.3
Manganese	ug/L	10/13/2011 23:35	5.00	0.285	1.0	2.0

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 997831-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	1.10	1.27	14.1	0 - 20
Manganese	ug/L	5.00	1.97	1.98	0.303	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.4	50.0	94.8	85 - 115
Manganese	ug/L	1.00	47.6	50.0	95.3	85 - 115

Matrix Spike

Lab ID = 997831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	232.	251.(250.)	92.4	75 - 125
Manganese	ug/L	5.00	230.	252.(250.)	91.2	75 - 125

Matrix Spike Duplicate

Lab ID = 997831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	230.	251.(250.)	91.6	75 - 125
Manganese	ug/L	5.00	228.	252.(250.)	90.4	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.8	50.0	97.6	90 - 110
Manganese	ug/L	1.00	46.1	50.0	92.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.0	50.0	93.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.4	50.0	92.9	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 9

Project Number: 424973.01.DM

Printed 10/24/2011

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	45.5	50.0	91.1	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	45.9	50.0	91.8	80 - 120

Total Dissolved Solids by SM 2540 C

Batch 10TDS11C

10/14/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997831-001 Total Dissolved Solids	mg/L	10/14/2011	1.00	0.400	125	4360

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	1.00	ND

Duplicate

Lab ID = 997830-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	25900	24800	4.34	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	480.	500.	96.0	90 - 110

Turbidity by SM 2130 B

Batch 10TUC11G

10/12/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997831-001 Turbidity	NTU	10/12/2011	1.00	0.0140	0.100	0.110

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 997831-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.111	0.110	0.905	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.33	8.00	104.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.05	8.00	101.	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project


Page 9 of 9

Project Number: 424973.01.DM

Printed 10/24/2011

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi
Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch:	10TDS11C
Date Calculated:	10/19/11

Laboratory Number	Sample volume, ml	Initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	112.3117	112.3118	112.3118	0.0000	No	0.0001	1.0	25.0	ND	1
997830	5	50.3847	50.5093	50.5089	0.0004	No	0.1242	24840.0	500.0	24840.0	1
997831	20	51.0765	51.164	51.1636	0.0004	No	0.0871	4355.0	125.0	4355.0	1
997833-1	100	72.8250	72.8817	72.8817	0.0000	No	0.0567	567.0	25.0	567.0	1
997833-2	100	65.9508	66.005	66.0046	0.0004	No	0.0538	538.0	25.0	538.0	1
997833-3	100	68.2231	68.2786	68.2786	0.0000	No	0.0555	555.0	25.0	555.0	1
997833-4	100	73.1403	73.1989	73.1985	0.0004	No	0.0582	582.0	25.0	582.0	1
997809	200	108.6910	108.7117	108.7115	0.0002	No	0.0205	102.5	12.5	102.5	1
997793	840	100.6872	100.6899	100.6899	0.0000	No	0.0027	3.2	3.0	3.2	1
997830D	5	50.1294	50.2589	50.2589	0.0000	No	0.1295	25900.0	500.0	25900.0	1
997830	100	111.6511	111.6991	111.6991	0.0000	No	0.0480	480.0	25.0	480.0	1
LCS											
LCS											1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

C = mL of sample filtered.

RL= reporting limit.

ND = not detected (below the reporting limit)

Analyst Printed Name

Analyst Signature

Mark

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 10TDS11C

Date Calculated: 10/19/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
997830	36700	0.68	23855	1.04
997831	7630	0.57	4959.5	0.88
997833-1	967	0.59	628.55	0.90
997833-2	960	0.56	624	0.86
997833-3	945	0.59	614.25	0.90
997833-4	1014	0.57	659.1	0.88
997809	179	0.57	116.35	0.88
997793	5.6	0.57	3.64	0.88
997830D	36700	0.71	23855	1.09
LCD				





TRUESDAIL LABORATORIES, INC.
 14201 Franklin Avenue, Tustin, CA 92780-7008
 (714) 730-6239 FAX: (714) 730-6462
 www.truesdail.com

CHAIN OF CUSTODY RECORD

[IMS3Plant-WDR-330]

COC Number

10 Days

TURNAROUND TIME

DATE 10/11/11

PAGE 1 OF 1

997831

COMPANY E2		DATE 10/11/11		TIME 1300		DESCRIPTION Water	
PROJECT NAME PG&E Topock	PHONE (530) 229-3303	FAX (530) 339-3303	ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612				
P.O. NUMBER 424973.01.DM	SAMPLERS (SIGNATURE)		TEAM 1				
SAMPLE I.D. SC-700B-WDR-330	Cf6 (218.6) Lab Filtered		X				
	Total Metals (200.7) Cr, Mn		X				
	Specific Conductance (120.1)		X				
	TDS (SM2540C)		X				
	Turbidity (SM2130)		X				
	NUMBER OF CONTAINERS		3				
	COMMENTS		M=6 (200.7)				
		TOTAL NUMBER OF CONTAINERS		3			

ALERT !!
Level III QC

For Sample Conditions
 See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/>	°C
<i>[Signature]</i>	Rafael	Company/ Agency	10-11-11 1530	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	4°C
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:			
<i>[Signature]</i>	Rafael	Company/ Agency	10-11-11 1530				
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time				
<i>[Signature]</i>	Rafael	Company/ Agency	10-11-11 2130				
Signature (Received)	Printed Name	Company/ Agency	Date/ Time				
<i>[Signature]</i>	Rafael	Company/ Agency	10/11/11 2130				
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time				
<i>[Signature]</i>	Rafael	Company/ Agency					
Signature (Received)	Printed Name	Company/ Agency	Date/ Time				
<i>[Signature]</i>	Rafael	Company/ Agency					

Hexavalent Chromium

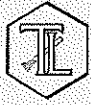
Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
10/10/11	997763-1	9.5	N/A	N/A	N/A	Qu
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
10/12/11	997830	7.0	5.0 mL	9.5	8:20 a.m.	ALi
10/12/11	997831	7.0	5.0 mL	9.5	8:30 a.m.	ALi
10/16/11	997709	.				
10/19/11	997987-1	9.5	N/A	N/A	N/A	Qu
	-2	9.5				
	-3	9.5				
10/19/11	997988	6.0	5 mL	9.5	8:20 am	Qu
10/20/11	998019-1	9.5	N/A	N/A	N/A	Qu
	-2	9.5	N/A	N/A	N/A	Qu
10/20/11	998029-1	7.0	5.0 mL	9.5	12:15 pm	Qu
	-2	7.0	5.0 mL	9.5	12:15 pm	Qu
10/21/11	998039-1	9.5	N/A	N/A	N/A	Qu
	-2					
	-3					
	-4					
	-5					

MWA

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
997708(1-45/11-20)	<1	<2	10/07/11	M.M	Yes	No
997709(1-35/10/2/16)	↓	↓	↓	↓	↓	↓
9974509(1-6)	plant >2	>2	10/05/11	PK	No	Yes
997440(1-6)	plant >2	>2	10/05/11	PK	No	Yes
997763(1-10)	<1	<2	10/10/11	M.M	Yes	No
997603(1-2)	<1	<2	10/19/11	PK	No	No
997604(1-11)	<1	<2	10/10/11	ICK	No	No
997830	<1	>2	10/12/11	ES	No	yes @ 4:00 pm
997821	↓	↓	↓	↓	↓	↓
997745 total + dissolved (1-7)	<1	<2	10/13/11	PK	No	No
997746	<1	<2	10/13/11	PK	No	No
997652	<1	<2	10/13/11	PK	No	No
997653(1-12)	<1	<2	10/13/11	PK	No	No
997852(1-4)	>1	<2	10/13/11	M.M	Yes	No
997829(1-1)	Sludge	-	10/13/11	M.M	Yes	TTL C
997816(1-2)	Soil	-	10/13/11	M.M	Yes	↓
997867	↓	-	↓	↓	↓	↓
997649(1-2)	plant	>2	10/12/11	PK	No	Yes
997917	Solid	-	10/14/11	M.M	Yes	STLC
997871	>1	<2	10/14/11	M.M	Yes	No
997872	↓	↓	↓	↓	↓	↓
997875	↓	↓	↓	↓	↓	↓
997876	↓	↓	↓	↓	↓	↓
997880	↓	↓	↓	↓	↓	↓
997881	↓	↓	↓	↓	↓	↓
997877	↓	↓	↓	↓	↓	↓
997893	↓	↓	↓	↓	↓	↓
997920	Solid	-	10/14/11	M.M	Yes	TTL C
997987	<1	<2	10/19/11	M.M	Yes	- No
998019(1-2)	<1	<2	10/20/11	M.M	Yes	No
997956	>1	<2	↓	↓	↓	↓
997958	↓	↓	↓	↓	↓	↓
998008	↓	↓	↓	↓	↓	↓
998016(1-2)	>1	↓	↓	↓	↓	↓
998030(1-5)	<1	<2	10/21/11	M.M	Yes	No
997968	<1	>2	10/21/11	ES	No	yes @ 3:00 pm



Sample Integrity & Analysis Discrepancy Form

Client: CH2M HILL

Lab # 997831

Date Delivered: 10/11/11 Time: 9:30 By: Mail Field Service Client

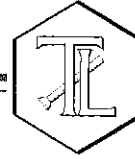
1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4°C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = See COC Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other Water

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: Alex

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

November 1, 2011

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-331 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 997988

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-331 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.


The samples were received and delivered with the chain of custody on October 18, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

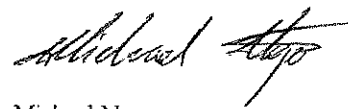
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


for
Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 997988

Date: November 1, 2011

Collected: October 18, 2011

Received: October 18, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE · JUSTIN, CALIFORNIA 92780-7008
 (714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: E2 Consulting Engineers, Inc.
 155 Grand Ave. Suite 1000
 Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 997988
Date Received: October 18, 2011

Analytical Results Summary

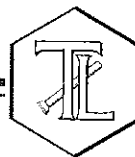
Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
997988-001	SC-700B-WDR-331	E120.1	NONE	10/18/2011	13:30	EC	7540	umhos/cm	2.0
997988-001	SC-700B-WDR-331	E200.8	NONE	10/18/2011	13:30	Chromium	ND	ug/L	1.0
997988-001	SC-700B-WDR-331	E200.8	NONE	10/18/2011	13:30	Manganese	9.6	ug/L	1.0
997988-001	SC-700B-WDR-331	E218.6	LABFLT	10/18/2011	13:30	Chromium, hexavalent	ND	ug/L	1.0
997988-001	SC-700B-WDR-331	SM2130B	NONE	10/18/2011	13:30	Turbidity	ND	NTU	0.100
997988-001	SC-700B-WDR-331	SM2540C	NONE	10/18/2011	13:30	Total Dissolved Solids	4300	mg/L	125

ND: Non Detected (below reporting limit)
 mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:
 Results below 0.01ppm will have two (2) significant figures.
 Result above or equal to 0.01ppm will have three (3) significant figures.
 Quality Control data will always have three (3) significant figures.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Laboratory No. 997988

Page 1 of 8

Printed 11/1/2011

Samples Received on 10/18/2011 8:30:00 AM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-331	997988-001	10/18/2011 13:30	Water

Specific Conductivity - EPA 120.1

Batch 10EC11M

10/21/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997988-001 Specific Conductivity	umhos/cm	10/21/2011	1.00	0.0380	2.00	7540

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 997988-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7570	7540	0.397	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	714	706	101.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	716	706	101.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710.	706	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	986	997	98.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	910.	997	91.3	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

009



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 3 of 8
Printed 11/1/2011

Chrome VI by EPA 218.6

Batch 10CrH11Q

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 997988-001 Chromium, Hexavalent, ug/L, 10/19/2011 09:39, 5.25, 0.136, 1.0, ND

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Chromium, Hexavalent, ug/L, 1.00, ND

Duplicate

Lab ID = 997987-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.05, 0.996, 1.02, 2.38, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 5.01, 5.00, 100., 90 - 110

Matrix Spike

Lab ID = 997987-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 6.62, 6.69(5.30), 98.6, 90 - 110

Matrix Spike

Lab ID = 997987-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 6.23, 6.32(5.30), 98.2, 90 - 110

Matrix Spike

Lab ID = 997987-003

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.55, 1.54(1.06), 101., 90 - 110

Matrix Spike

Lab ID = 997988-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.24, 1.22(1.06), 102., 90 - 110

Matrix Spike

Lab ID = 997988-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 5.25, 5.51, 5.51(5.25), 100.0, 90 - 110

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 5.01, 5.00, 100., 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 10.0, 10.0, 100., 95 - 105

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 8

Project Number: 424973.01.DM

Printed 11/1/2011

Metals by EPA 200.8, Total

Batch 102611A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997988-001 Chromium	ug/L	10/26/2011 15:08	5.00	0.110	1.0	ND
Manganese	ug/L	10/26/2011 15:08	5.00	0.285	1.0	9.6

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 997602-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	829.	822	0.896	0 - 20
Manganese	ug/L	5.00	7.56	7.49	0.864	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.3	50.0	98.6	85 - 115
Manganese	ug/L	1.00	49.9	50.0	99.8	85 - 115

Matrix Spike

Lab ID = 997602-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	1090	1070(250.)	108.	75 - 125
Manganese	ug/L	5.00	245.	257.(250.)	94.8	75 - 125

Matrix Spike Duplicate

Lab ID = 997602-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	1060	1070(250.)	95.6	75 - 125
Manganese	ug/L	5.00	245.	257.(250.)	95.1	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.5	50.0	98.9	90 - 110
Manganese	ug/L	1.00	50.6	50.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.2	50.0	94.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.9	50.0	95.8	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 8

Project Number: 424973.01.DM

Printed 11/1/2011

Serial Dilution

Lab ID = 997602-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	846.	822	2.89	0 - 10

Total Dissolved Solids by SM 2540 C

Batch 10TDS11D

10/19/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997988-001 Total Dissolved Solids	mg/L	10/19/2011	1.00	0.400	125	4300

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	1.00	ND

Duplicate

Lab ID = 997988-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4480	4300	3.99	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	490.	500.	98.0	90 - 110

Turbidity by SM 2130 B

Batch 10TUC11L

10/19/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997988-001 Turbidity	NTU	10/19/2011	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 997988-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.78	8.00	97.2	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.70	8.00	96.2	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 8

Project Number: 424973.01.DM

Printed 11/1/2011

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for Mona Nassimi

Mona Nassimi

Manager, Analytical Services

E2 Condon



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 10TDS11D

Date Calculated: 10/22/11

Laboratory Number	Sample volume, ml	Initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	70.3204	70.3206	70.3206	0.0000	No	0.0002	2.0	25.0	ND	1
997934-2	200	109.4413	109.4625	109.4625	0.0000	No	0.0212	106.0	12.5	106.0	1
997934-4	100	105.6284	105.6578	105.6575	0.0003	No	0.0291	291.0	25.0	291.0	1
997953	500	111.1874	111.1883	111.1882	0.0001	No	0.0008	1.6	5.0	ND	1
997988	20	51.5087	51.595	51.5947	0.0003	No	0.0860	4300.0	125.0	4300.0	1
997989D	20	47.9836	48.0535	48.0531	0.0004	No	0.0895	4475.0	125.0	4475.0	1
LCS	100	78.3848	78.4339	78.4338	0.0001	No	0.0490	490.0	25.0	490.0	1
LCS											1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$


Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

C = mL of sample filtered.

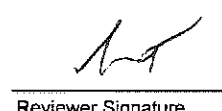
RL = reporting limit.

ND = not detected (below the reporting limit)


 Analyst Printed Name


 Analyst Signature


 Reviewer Printed Name


 Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 10TDS11D

Date Calculated: 10/22/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
997934-2	183	0.58	118.95	0.89
997934-4	530	0.55	344.5	0.84
997953	9.64	ND	6.266	ND
997988	7570	0.57	4920.5	0.87
997988D	7570	0.59	4920.5	0.91
LCS				





TRUESDAIL LABORATORIES, INC.
 14201 Franklin Avenue, Tustin, CA 92780-7008
 (714)730-6239 FAX: (714) 730-6462
 www.truesdail.com

CHAIN OF CUSTODY RECORD

(IM3)Plant-WDR-331

COC Number _____
 TURNAROUND TIME 10 Days
 DATE 10/18/11 PAGE 1 OF 1

997988

COMPANY <u>E2</u>		DATE <u>10/18/11</u>		TIME <u>1830</u>		DESCRIPTION <u>Water</u>	
PROJECT NAME <u>PG&E Topock</u>		P.O. NUMBER <u>424973.01.DM</u>		TEAM <u>1</u>		SAMPLERS (SIGNATURE) 	
PHONE <u>(530) 229-3303</u>		FAX <u>(530) 339-3303</u>		ADDRESS <u>155 Grand Ave Ste 1000</u> <u>Oakland, CA 94612</u>		ADDRESS <u>155 Grand Ave Ste 1000</u> <u>Oakland, CA 94612</u>	
Turbidity (SM2130)		TDS (SM2540C)		Specific Conductance (120.1)		Total Metals (200.7) Cr, Mn	
X		X		X		X	
Cr6 (218.6) Lab Filtered		X		X		X	
Rec'd <u>10/08/11</u>		Lab# <u>997988</u>		NUMBER OF CONTAINERS <u>3</u>		COMMENTS <u>DH=6 (200.7)</u>	
TOTAL NUMBER OF CONTAINERS <u>3</u>							

For Sample Conditions See Form Attached

**ALERT!!
Level III QC**

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/>	4.6 °C
	<u>Robert Davis</u>	<u>PG&E</u>	<u>10-18-11 15:30</u>	CUSTOMY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:			
	<u>Robert Davis</u>	<u>PG&E</u>	<u>10-18-11 21:30</u>				
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time				
	<u>Robert Davis</u>	<u>PG&E</u>	<u>10/18/11 21:30</u>				
Signature (Received)	Printed Name	Company/ Agency	Date/ Time				
	<u>Robert Davis</u>	<u>PG&E</u>	<u>10/18/11 21:30</u>				

039

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
10/10/11	997763-1	9.5	N/A	N/A	N/A	AW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
↓	↓ -10	↓	↓	↓	↓	↓
10/12/11	997830	7.0	5.0 mL	9.5	8:20 a.m.	ALi
10/12/11	997831	7.0	5.0 mL	9.5	8:30 a.m.	ALi
10/14/11	997709	.				
10/14/11	997987-1	9.5	N/A	N/A	N/A	AW
	-2	9.5	↓	↓	↓	↓
	-3	9.5	↓	↓	↓	↓
10/19/11	997988	6.0	5 mL	9.5	8:20 am	BB

ah

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
997808 (1-45) 11-20	<1	<2	10/07/11	M.M	yes	no
997809 (1-35) 10/2/11	↓	↓	↓	↓	↓	↓
9974589 (1-6)	plant >2	>2	10/05/11	PK	NO	yes
9974416 (1-6)	plant >2	>2	10/05/11	PK	NO	yes
997631 (1-10)	<1	<2	10/10/11	M.M	yes	no
997603 (1-2)	<1	<2	10/9/11	PK	NO	no
997604 (1-11)	<1	<2	10/10/11	ICK	NO	no
997870	<1	>2	10/12/11	ES	NO	yes @ 9:00 pm
997871	↓	↓	↓	↓	↓	↓
997745 total + dissolved (1-7)	<1	<2	10/13/11	PK	NO	NO
997746	<1	<2	10/13/11	PK	NO	NO
997652	<1	<2	10/13/11	PK	NO	NO
997653 (1-12)	<1	<2	10/13/11	PK	NO	NO
997852 (1-4)	>1	<2	10/13/11	M.M	yes	NO
997829 (1-1)	Sludge	-	10/13/11	M.M	yes	TTLC
997816 (1-2)	Soil	-	10/13/11	M.M	yes	↓
997867	↓	-	↓	↓	↓	↓
997649 (1-2)	plant	>2	10/12/11	PK	NO	yes
997917	Solid	-	10/14/11	M.M	yes	STLC
997871	>1	<2	10/14/11	M.M	yes	NO
997872	↓	↓	↓	↓	↓	↓
997875	↓	↓	↓	↓	↓	↓
997876	↓	↓	↓	↓	↓	↓
997880	↓	↓	↓	↓	↓	↓
997881	↓	↓	↓	↓	↓	↓
997874	↓	↓	↓	↓	↓	↓
997893	↓	↓	↓	↓	↓	↓
997920	Solid	-	10/14/11	M.M	yes	TTLC
997987	<1	<2	10/19/11	M.M	yes	- NO
998019 (1-2)	<1	<2	10/20/11	M.M	yes	NO
997956	>1	<2	↓	↓	↓	↓
997958	↓	↓	↓	↓	↓	↓
998008	↓	↓	↓	↓	↓	↓
998016 (1-2)	>1	↓	↓	↓	↓	↓
998039 (1-5)	<1	<2	10/21/11	M.M	yes	NO
997968	<1	>2	10/21/11	ES	NO	yes @ 3:00 pm
998095	>1	<2	10/25/11	M.M	yes	-
998060	↓	↓	↓	↓	↓	-
998076	↓	↓	↓	↓	↓	-
998077	↓	↓	↓	↓	↓	-
998036	Solid	-	↓	↓	yes	TTLC
998093	↓	-	↓	↓	↓	↓
998110 (1-9)	<1	<2	10/26/11	M.M	yes	-
998111	↓	↓	↓	↓	↓	-
998112 (1-7)	↓	↓	↓	↓	↓	-
998113 (1-8)	↓	↓	↓	↓	↓	-
998114 (1-8)	↓	↓	↓	↓	↓	-
998115 (1-11)	↓	↓	↓	↓	↓	-
997884 (1-6)	plant	>2	10/17/11	PK	NO	yes on 10/17/11



Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 997988

Date Delivered: 10/18/11 Time: 2:30 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition? Yes No N/A
Temperature (if yes)? 4.6 C
7. Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation? Yes No N/A
Preserved (if yes) by: Truesdail Client
12. Were samples pH checked? pH = See C.O.E. Yes No N/A
13. Were all analyses within holding time at time of receipt? Yes No N/A
If not, notify Project Manager.
14. Have Project due dates been checked and accepted? Yes No N/A
Turn Around Time (TAT): RUSH Std
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other Water

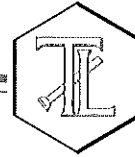
ALERT!!
Level III QC

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: Linda Stuebner

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

November 10, 2011

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-332 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 998107

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-332 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.


The samples were received and delivered with the chain of custody on October 25, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.


Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

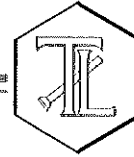
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


for Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 998107

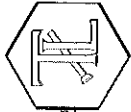
Date: November 10, 2011

Collected: October 25, 2011

Received: October 25, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov



Client: E2 Consulting Engineers, Inc.
 155 Grand Ave. Suite 1000
 Oakland, CA 94612
Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
 (714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Laboratory No.: 998107
Date Received: October 25, 2011

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
998107-001	SC-700B-WDR-332	E120.1	NONE	10/25/2011	10:00	EC	7390	umhos/cm	2.00
998107-001	SC-700B-WDR-332	E200.8	NONE	10/25/2011	10:00	Chromium	ND	ug/L	1.0
998107-001	SC-700B-WDR-332	E200.8	NONE	10/25/2011	10:00	Manganese	7.9	ug/L	1.0
998107-001	SC-700B-WDR-332	E218.6	LABFLT	10/25/2011	10:00	Chromium, hexavalent	ND	ug/L	1.0
998107-001	SC-700B-WDR-332	SM2130B	NONE	10/25/2011	10:00	Turbidity	ND	NTU	0.100
998107-001	SC-700B-WDR-332	SM2540C	NONE	10/25/2011	10:00	Total Dissolved Solids	4230	mg/L	125

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:
 Results below 0.01 ppm will have two (2) significant figures.
 Result above or equal to 0.01ppm will have three (3) significant figures.
 Quality Control data will always have three (3) significant figures.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Laboratory No. 998107

Page 1 of 7

Printed 11/10/2011

Samples Received on 10/25/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-332	998107-001	10/25/2011 10:00	Water

Specific Conductivity - EPA 120.1

Batch 10EC11N

10/26/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998107-001 Specific Conductivity	umhos/cm	10/26/2011	1.00	0.0380	2.00	7390

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 998107-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7400	7390	0.135	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	712	706	101.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710.	706	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	992	997	99.5	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

008



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 2 of 7
Printed 11/10/2011

Chrome VI by EPA 218.6

Batch 10CrH11V

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 9981,07-001 Chromium, Hexavalent, ug/L, 10/27/2011 10:30, 5.25, 0.210, 1.0, ND

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Chromium, Hexavalent, ug/L, 1.00, ND

Duplicate

Lab ID = 997604-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 10.5, 43.3, 48.0, 10.3, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 4.84, 5.00, 96.7, 90 - 110

Matrix Spike

Lab ID = 997604-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 5.25, 5.20, 5.25(5.25), 99.0, 90 - 110

Matrix Spike

Lab ID = 997604-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 105., 100.(52.5), 108., 90 - 110

Matrix Spike

Lab ID = 997604-003

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 10.5, 10.3, 10.5(10.5), 98.2, 90 - 110

Matrix Spike

Lab ID = 997604-003

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 5.25, 3.97, 5.25(5.25), 75.7, 90 - 110

Matrix Spike

Lab ID = 997604-007

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 10.5, 9.87, 10.5(10.5), 94.0, 90 - 110

Matrix Spike

Lab ID = 997604-007

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 5.25, 4.59, 5.25(5.25), 87.5, 90 - 110

Matrix Spike

Lab ID = 997604-009

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 5.25, 36.1, 36.6(26.2), 98.1, 90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 3 of 7
Printed 11/10/2011

Matrix Spike							Lab ID = 998107-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	5.25	5.68	5.65(5.25)	101.	90 - 110	
Matrix Spike							Lab ID = 998107-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.06	1.26	1.21(1.06)	105.	90 - 110	
Matrix Spike							Lab ID = 998152-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.06	1.30	1.27(1.06)	103.	90 - 110	
Matrix Spike							Lab ID = 998152-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.06	1.20	1.21(1.06)	99.3	90 - 110	
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	4.76	5.00	95.2	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	9.52	10.0	95.2	95 - 105	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103.	95 - 105	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100.	95 - 105	



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 4 of 7
Printed 11/10/2011

Metals by EPA 200.8, Total

Batch 110911A

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include Chromium and Manganese with values like ug/L, 11/09/2011 13:30, 5.00, 0.110, 1.0, ND.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Rows for Chromium and Manganese showing ND results.

Duplicate

Lab ID = 998107-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Rows for Chromium and Manganese.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows for Chromium and Manganese.

Matrix Spike

Lab ID = 998107-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Rows for Chromium and Manganese.

Matrix Spike Duplicate

Lab ID = 998107-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Rows for Chromium and Manganese.

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows for Chromium and Manganese.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Chromium.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Chromium.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 6 of 7
Printed 11/10/2011

Interference Check Standard AB

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 48.6, 50.0, 97.2, 80 - 120

Interference Check Standard AB

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 52.9, 50.0, 106., 80 - 120

Interference Check Standard AB

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 1.00, 48.5, 50.0, 97.0, 80 - 120

Interference Check Standard AB

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 1.00, 52.5, 50.0, 105., 80 - 120

Total Dissolved Solids by SM 2540 C

Batch 10TDS11G

10/27/2011

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 998107-001 Total Dissolved Solids, mg/L, 10/27/2011, 1.00, 0.400, 125, 4230

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Total Dissolved Solids, mg/L, 1.00, ND

Duplicate

Lab ID = 998154-003

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Total Dissolved Solids, mg/L, 1.00, 3930, 3890, 1.02, 0 - 5

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Total Dissolved Solids, mg/L, 1.00, 517, 500., 103., 90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 7 of 7
Printed 11/10/2011

Turbidity by SM 2130 B

Batch 10TUC11P

10/26/2011

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 998107-001 Turbidity, NTU, 10/26/2011, 1.00, 0.0140, 0.100, ND

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Turbidity, NTU, 1.00, ND

Duplicate

Lab ID = 998107-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Turbidity, NTU, 1.00, ND, 0.00, 0, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Turbidity, NTU, 1.00, 8.10, 8.00, 101., 90 - 110

Lab Control Sample Duplicate

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Turbidity, NTU, 1.00, 8.03, 8.00, 100., 90 - 110

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Signature: Mona Nassimi
Manager, Analytical Services

E2 Carlson



Total Dissolved Solids by SM 2540 C

Calculations

Batch:	10TDS11G
Date Calculated:	11/1/11

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	66.7196	66.7212	66.7212	0.0000	No	0.0016	16.0	25.0	ND	1
998107	20	49.4184	49.5031	49.503	0.0001	No	0.0846	4230.0	125.0	4230.0	1
998153-2	50	51.2670	51.3026	51.3022	0.0004	No	0.0352	704.0	50.0	704.0	1
998153-3	50	51.0892	51.1276	51.1276	0.0000	No	0.0384	768.0	50.0	768.0	1
998153-4	50	75.3061	75.3568	75.3564	0.0004	No	0.0503	1006.0	50.0	1006.0	1
998153-5	50	51.1308	51.1832	51.1828	0.0004	No	0.0520	1040.0	50.0	1040.0	1
998153-6	50	47.0076	47.0646	47.0646	0.0000	No	0.0570	1140.0	50.0	1140.0	1
998153-7	50	50.7016	50.7592	50.759	0.0002	No	0.0574	1148.0	50.0	1148.0	1
998154-1	50	49.2639	49.3246	49.3244	0.0002	No	0.0605	1210.0	50.0	1210.0	1
998154-2	50	50.6101	50.734	50.734	0.0000	No	0.1239	2478.0	50.0	2478.0	1
998154-3	20	66.8090	66.8868	66.8868	0.0000	No	0.0778	3890.0	125.0	3890.0	1
998154-3D	20	51.1379	51.2165	51.2165	0.0000	No	0.0786	3930.0	125.0	3930.0	1
LCS	100	68.8830	68.9348	68.9347	0.0001	No	0.0517	517.0	25.0	517.0	1
998154-4	50	50.9454	51.0506	51.0503	0.0003	No	0.1049	2098.0	50.0	2098.0	1
998154-5	50	49.3779	49.4787	49.4783	0.0004	No	0.1004	2008.0	50.0	2008.0	1
998154-6	20	49.4757	49.5386	49.5385	0.0001	No	0.0628	3140.0	125.0	3140.0	1
998154-7	50	49.6971	49.7343	49.7341	0.0002	No	0.0370	740.0	50.0	740.0	1
998154-8	50	49.2934	49.3774	49.3773	0.0001	No	0.0839	1678.0	50.0	1678.0	1
998154-9	50	50.1270	50.2109	50.2106	0.0003	No	0.0836	1672.0	50.0	1672.0	1
998154-10	50	50.5266	50.6287	50.6285	0.0002	No	0.1019	2038.0	50.0	2038.0	1
998154-11	50	51.0073	51.0888	51.0887	0.0001	No	0.0814	1628.0	50.0	1628.0	1
998154-12	50	51.0740	51.1358	51.1356	0.0002	No	0.0616	1232.0	50.0	1232.0	1
998154-13	50	47.9067	47.9395	47.9394	0.0001	No	0.0327	654.0	50.0	654.0	1
LCS											1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

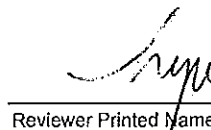
C = mL of sample filtered.

RL= reporting limit.

ND = not detected (below the reporting limit)


 Analyst Printed Name


 Analyst Signature


 Reviewer Printed Name


 Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 10TDS11G

Date Calculated: 11/1/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
998107	7390	0.57	4803.5	0.88
998153-2	1160	0.61	754	0.93
998153-3	1310	0.59	851.5	0.90
998153-4	1590	0.63	1033.5	0.97
998153-5	1650	0.63	1072.5	0.97
998153-6	1710	0.67	1111.5	1.03
998153-7	1680	0.68	1092	1.05
998154-1	1760	0.69	1144	1.06
998154-2	3440	0.72	2236	1.11
998154-3	5220	0.75	3393	1.15
998154-3D	5220	0.75	3393	1.16
LCS				
998154-4	3000	0.70	1950	1.08
998154-5	2680	0.75	1742	1.15
998154-6	4240	0.74	2756	1.14
998154-7	1120	0.66	728	1.02
998154-8	2390	0.70	1553.5	1.08
998154-9	2370	0.71	1540.5	1.09
998154-10	2820	0.72	1833	1.11
998154-11	2310	0.70	1501.5	1.08
998154-12	1780	0.69	1157	1.06
998154-13	981	0.67	637.65	1.03



TRUESDAIL LABORATORIES, INC.
 14201 Franklin Avenue, Tustin, CA 92780-7008
 (714) 730-6239 FAX: (714) 730-6462
 www.truesdail.com

CHAIN OF CUSTODY RECORD

[IM3] Plant-WDR-332

COC Number

10 Days

TURNAROUND TIME

DATE 10/25/11

PAGE 1 OF 1

998107

COMPANY E2	PROJECT NAME PG&E Topock	PHONE (530) 229-3303	FAX (530) 339-3303	ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612	P.O. NUMBER 424973.01.DM	TEAM 1	SAMPLERS SIGNATURE <i>[Signature]</i>	DATE 10/25/11	TIME 1000	DESCRIPTION Water	C6 (218.6) Lab Filtered	X	Total Metals (200.7) Cr, Mn	X	Specific Conductance (120.1)	X	TDS (SM2540C)	X	Turbidity (SM2130)	X	COMMENTS	
											NUMBER OF CONTAINERS				3		TOTAL NUMBER OF CONTAINERS		3		DU = 6 (200.7)	

ALERT!!
Level III QC

For Sample Cond
See Form Attac

CHAIN OF CUSTODY SIGNATURE RECORD										SAMPLE CONDITIONS							
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	Signature (Received)	Printed Name	Company/ Agency	Date/ Time	Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL	WARM	YES	NO	4.6 °C
<i>[Signature]</i>	<i>[Name]</i>	<i>[Agency]</i>	10-25-11 15:30	<i>[Signature]</i>	<i>[Name]</i>	<i>[Agency]</i>	10-25-11 15:30	<i>[Signature]</i>	<i>[Name]</i>	<i>[Agency]</i>	10-25-11 21:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	Signature (Received)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:					
<i>[Signature]</i>	<i>[Name]</i>	<i>[Agency]</i>	10/25/11 21:30	<i>[Signature]</i>	<i>[Name]</i>	<i>[Agency]</i>	10/25/11 21:30	<i>[Signature]</i>	<i>[Name]</i>	<i>[Agency]</i>	10/25/11 21:30						

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
10/10/11	997763-1	9.5	N/A	N/A	N/A	GL
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
10/12/11	997830	7.0	5.0 mL	9.5	8:20 a.m.	ALi
10/12/11	997831	7.0	5.0 mL	9.5	8:30 a.m.	ALi
10/16/11	997709					
10/14/11	997987-1	9.5	N/A	N/A	N/A	GL
	-2	9.5				
	-3	9.5				
10/19/11	997988	6.0	5 mL	9.5	8:20 am	GL
10/20/11	998019-1	9.5	N/A	N/A	N/A	GL
	-2	9.5	N/A	N/A	N/A	GL
10/20/11	998029-1	7.0	5.0 mL	9.5	12:15 pm	GL
	-2	7.0	5.0 mL	9.5	12:15 pm	GL
10/21/11	998039-1	9.5	N/A	N/A	N/A	GL
	-2					
	-3					
	-4					
	-5					
10/26/2011	998107	6	5.0 mL	9.5	8:20 am	GL
10/26/2011	998110-1	9.5	N/A	N/A	N/A	GL
	-2					
	-3					
	-4					

ah

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
998021 (1-6)	plant	>2	10/21/11	FF	NO	yes
998150 (13-8)	<1	<2	10/27/11	M.M	yes	-
998151 (1-8)	↓	↓	↓	↓	↓	-
998152 (1-2)	↓	↓	↓	↓	↓	-
998153 (1-8)	↓	↓	↓	↓	↓	-
998154 (1-13)	↓	↓	↓	↓	↓	-
998181 (1-2)	>1	>2	10/28/11	KK	NO	YRS @ 10:30 AM
998107	<1	>2	10/28/11	KK	NO	YRS @ 10:45 am
998168 (1-6)	<1	<2	10/28/11	M.M	YES	-
998169 (13, 4)	↓	↓	↓	↓	↓	-
998170 (1-3)	↓	↓	↓	↓	↓	-
998171 (1-7)	↓	↓	↓	↓	↓	-
998172 (1-9)	↓	↓	↓	↓	↓	-
998173 (1-6)	↓	↓	↓	↓	↓	-
998174 (1-5)	↓	↓	↓	↓	↓	-
998175 (1-2)	↓	↓	↓	↓	↓	-
998189 (1-4)	71	<2	10/28/11	M.M	yes	-
998198	<1	<2	10/31/11	M.M	yes	-
998199 (1-3)	↓	↓	↓	↓	↓	-
998200 (1-5)	↓	↓	↓	↓	↓	-
998197 (1-)	>1	↓	↓	↓	↓	-
998219	<1	<2	11/02/11	M.M	yes	-
998220 (1-8)	↓	↓	↓	↓	↓	-
998221 (1-6)	↓	↓	↓	↓	↓	-
998222 (13, 5)	↓	↓	↓	↓	↓	-
998223 (1-7)	↓	↓	↓	↓	↓	-
998241 (1-2)	↓	↓	↓	↓	↓	-
998242 (1-2)	↓	↓	↓	↓	↓	-
998245 (1-3)	↓	↓	↓	↓	↓	-
998246	↓	↓	↓	↓	↓	-
998247 (1-3)	↓	↓	↓	↓	↓	-
998248 (1-5)	↓	↓	↓	↓	↓	-
998249 (1-10)	↓	↓	↓	↓	↓	-
998250 (1-6)	↓	↓	↓	↓	↓	-
998251 (1-6)	↓	↓	↓	↓	↓	-
998212 (12, 4)	<1	>2	11/02/11	KK	NO	YRS @ 5:30 pm
998259 (1-2)	<1	<2	11/04/11	M.M	yes	-
998280 (1-4)	↓	↓	↓	↓	↓	-
998281 (1-4)	↓	↓	↓	↓	↓	-
998282 (1-11)	↓	↓	↓	↓	↓	-
998213	↓	↓	↓	↓	↓	-
998314 (1-8)	↓	↓	↓	↓	↓	-
998315 (1-8)	↓	↓	↓	↓	↓	-



Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 998107

Date Delivered: 10/25/11 Time: 11:30 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.6 °C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = see c.o.c. Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other Water

ALERT!!!
Level III QC

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: d. Shabunice

Analytical Bench Log Book

WDR pH Results

If the on site laboratory pH result for T-700 tank is less than pH 6.6 or greater than pH 8.3 the Injection well should be shut down until the problem is fixed.

Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover Sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
SC-700B	10-4-11	1300	10-4-11	1304	METER#1	10-4-11	1:00	-55.4	Paul Phelps	7.0

Notes:

SC-700B	10-4-11	1300	10-4-11	1308	METER#1	10-4-11	1:00	-55.4	Paul Phelps	7.2
---------	---------	------	---------	------	---------	---------	------	-------	-------------	-----

Notes:

SC-700B	10-11-11	1300	10-11-11	1306	METER#1	10-11-11	1:00	-54.7	Paul Phelps	7.0
---------	----------	------	----------	------	---------	----------	------	-------	-------------	-----

Notes:

SC-701	10-11-11	1500	10-11-11	1305	METER#1	10-11-11	1:00	-54.7	Paul Phelps	7.0
--------	----------	------	----------	------	---------	----------	------	-------	-------------	-----

Notes:

SC-700B	10-18-11	1330	10-18-11	1336	METER#1	10-18-11	1:00	-55.0	Paul Phelps	7.1
---------	----------	------	----------	------	---------	----------	------	-------	-------------	-----

Notes:

SC-700B	10-25-11	1000	10-25-11	1005	METER#1	10-25-11	1:00	-55.1	Paul Phelps	7.0
---------	----------	------	----------	------	---------	----------	------	-------	-------------	-----

Notes:

7										
---	--	--	--	--	--	--	--	--	--	--

Notes:

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

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

January 2, 2012

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-188, GROUNDWATER MONITORING PROJECT, TLI NO.: 998241

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-188 groundwater-monitoring project for Total Dissolved and Hexavalent Chromium, Total Dissolved Solids, and Specific Conductivity. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on November 1, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Per Mr. Shawn Duffy's request, the pH analysis was cancelled.


Samples for Total Dissolved Chromium were analyzed by method EPA 200.8 with the approval of Mr. Shawn Duffy of CH2M Hill.

Due to the discrepancy between the Total Dissolved Chromium (447 ug/L) and Hexavalent Chromium (1060 ug/L) results for sample TW-03D-188, Mr. Shawn Duffy of CH2M Hill was notified. Mr. Duffy requested that sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers be digested and analyzed for Total Dissolved Chromium. The results were 1070 and 1080 ug/L, respectively. The original digestate was re-analyzed for confirmation and yielded a result of 945 ug/L. After discussing the results with Mr. Duffy, the result from the re-digested Total Dissolved Chromium was reported as it more closely matched the Hexavalent Chromium result. The discrepancy was most likely a result of analyst error during sample preparation for the original run.

No other violations or non-conformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

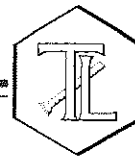
for 
Mona Nassimi
Manager, Analytical Services



Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwater Samples

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 998241

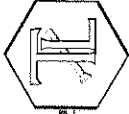
Date: January 2, 2012

Collected: November 1, 2011

Received: November 1, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 200.8	Total Dissolved Chromium	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov
SM 3500-CrB	Hexavalent Chromium	Jenny Tankunakorn



Client: E2 Consulting Engineers, Inc.
 155 Grand Ave. Suite 1000
 Oakland, CA 94612
Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 998241
Date Received: November 1, 2011

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
998241-001	PE-01-188	E120.1	NONE	11/1/2011	11:11	EC	4960	umhos/cm	2.00
998241-001	PE-01-188	E200.8	LABFLT-digested	11/1/2011	11:11	Chromium	10.3	ug/L	1.0
998241-001	PE-01-188	E218.6	LABFLT	11/1/2011	11:11	Chromium, hexavalent	10.3	ug/L	0.20
998241-001	PE-01-188	SM2540C	NONE	11/1/2011	11:11	Total Dissolved Solids	2790	mg/L	125
998241-002	TW-03D-188	E120.1	NONE	11/1/2011	11:11	EC	8610	umhos/cm	2.00
998241-002	TW-03D-188	E200.8	LABFLT-digested	11/1/2011	11:11	Chromium	1070	ug/L	2.0
998241-002	TW-03D-188	SM2540C	NONE	11/1/2011	11:11	Total Dissolved Solids	4880	mg/L	125
998241-002	TW-03D-188	SM3500-CrB	LABFLT	11/1/2011	11:11	Chromium, hexavalent	1060	ug/L	100

ND: Non Detected (below reporting limit)

Note: The following "Significant Figures" rule has been applied to all results:
 Results below 0.01 will have two (2) significant figures.
 Result above or equal to 0.01 will have three (3) significant figures.
 Quality Control data will always have three (3) significant figures.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Laboratory No. 998241

Page 1 of 9

Printed 1/2/2012

Samples Received on 11/1/2011 8:30:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-188	998241-001	11/01/2011 11:11	Water
TW-03D-188	998241-002	11/01/2011 11:11	Water

Specific Conductivity - EPA 120.1

Batch 11EC11A

11/2/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998241-001 Specific Conductivity	umhos/cm	11/02/2011	1.00	0.0950	2.00	4960
998241-002 Specific Conductivity	umhos/cm	11/02/2011	1.00	0.0950	2.00	8610

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 998241-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	8610	8610	0.00	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	705	706	99.8	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	705	706	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	979	997	98.2	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

009



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 2 of 9
Printed 1/2/2012

Chrome VI by EPA 218.6

Batch 11CrH11F

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 998241-001 Chromium, Hexavalent, ug/L, 11/08/2011 14:28, 1.05, 0.0260, 0.20, 10.3

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Chromium, Hexavalent, ug/L, 1.00, ND

Duplicate

Lab ID = 998315-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.05, 5.38, 5.44, 1.06, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 4.87, 5.00, 97.5, 90 - 110

Matrix Spike

Lab ID = 998241-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 25.5, 26.2(15.9), 95.4, 90 - 110

Matrix Spike

Lab ID = 998314-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 7.94, 8.01(5.30), 98.7, 90 - 110

Matrix Spike

Lab ID = 998314-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 6.51, 6.48(5.30), 101., 90 - 110

Matrix Spike

Lab ID = 998314-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 6.53, 6.53(5.30), 100., 90 - 110

Matrix Spike

Lab ID = 998314-006

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 6.33, 6.42(5.30), 98.3, 90 - 110

Matrix Spike

Lab ID = 998314-007

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 7.54, 7.62(5.30), 98.6, 90 - 110

Matrix Spike

Lab ID = 998315-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.09, 1.11(1.06), 97.9, 90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 9

Project Number: 424973.01.DM

Printed 1/2/2012

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100.	95 - 105

Chromium, Hexavalent by SM 3500-Cr B

Batch: 11CrH11A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998241-002 Chromium, Hexavalent	ug/L	11/08/2011 13:33	10.0	43.5	100.	1060

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 998241-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	1070	1060	0.724	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	108.	100.	108.	90 - 110

Matrix Spike

Lab ID = 998241-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	2140	2060(1000)	108.	85 - 115

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	58.9	60.0	98.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	58.9	60.0	98.2	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 9

Project Number: 424973.01.DM

Printed 1/2/2012

Total Dissolved Solids by SM 2540 C

Batch 11TDS11A

11/2/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998241-001 Total Dissolved Solids	mg/L	11/02/2011	1.00	0.400	125	2790
998241-002 Total Dissolved Solids	mg/L	11/02/2011	1.00	0.400	125	4880

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	1.00	ND

Duplicate

Lab ID = 998208-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	308	304	1.31	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	470.	500.	94.0	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 6 of 9
Printed 1/2/2012

Metals by EPA 200.8, Dissolved

Batch 112011B

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 998241-001 Chromium, ug/L, 11/21/2011 03:20, 4.44, 0.0977, 1.0, 10.3

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Chromium, ug/L, 1.00, ND

Duplicate

Lab ID = 998222-007

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Chromium, ug/L, 4.44, ND, 0.00, 0, 0 - 20

Low Level Calibration Verification

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 0.174, 0.200, 87.2, 70 - 130

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 5.00, 103, 100., 103, 85 - 115

Lab Control Sample Duplicate

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 5.00, 103., 100., 103., 85 - 115

Matrix Spike

Lab ID = 998222-007

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 4.44, 108., 111(111), 97.2, 75 - 125

Matrix Spike Duplicate

Lab ID = 998222-007

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 4.44, 114., 111(111), 102., 75 - 125

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 49.3, 50.0, 98.6, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 51.3, 50.0, 102., 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 51.1, 50.0, 102., 90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 9

Project Number: 424973.01.DM

Printed 1/2/2012

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.7	50.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.1	50.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.5	50.0	101.	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.6	50.0	101.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.8	50.0	104.	80 - 120

Serial Dilution

Lab ID = 998241-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	22.22	452.	447	1.20	0 - 10



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 9

Project Number: 424973.01.DM

Printed 1/2/2012

Metals by EPA 200.8, Dissolved

Batch 122711A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998241-002 Chromium	ug/L	12/27/2011 18:55	10.0	0.220	2.0	1070

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 998661-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	2.29	1.94	16.5	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.235	0.200	117.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	100.	100.	100.	85 - 115

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	101.	100.	101.	85 - 115

Matrix Spike

Lab ID = 998661-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	102.	102.(100.)	99.6	75 - 125

Matrix Spike Duplicate

Lab ID = 998661-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	106.	102.(100.)	104.	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.96	10.0	99.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.62	10.0	96.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.68	10.0	96.8	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 9

Project Number: 424973.01.DM

Printed 1/2/2012

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.78	10.0	97.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.51	10.0	95.1	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.70	10.0	97.0	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.60	10.0	96.0	80 - 120

Serial Dilution

Lab ID = 998241-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	1040	1070	3.04	0 - 10

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
for Mona Nassimi
Manager, Analytical Services

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

E2 Condon



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 11TDS11A

Date Calculated: 11/4/11

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	112.3586	112.3589	112.3588	0.0001	No	0.0002	2.0	25.0	ND	1
998196	100	68.5199	68.5769	68.5766	0.0003	No	0.0567	567.0	25.0	567.0	1
998212-2	200	115.2462	115.2667	115.2667	0.0000	No	0.0205	102.5	12.5	102.5	1
998212-4	100	74.7542	74.7784	74.7784	0.0000	No	0.0242	242.0	25.0	242.0	1
998221-1	100	76.5597	76.5899	76.5896	0.0003	No	0.0299	299.0	25.0	299.0	1
998221-2	100	65.5707	65.6025	65.6021	0.0004	No	0.0314	314.0	25.0	314.0	1
998241-1	20	67.7920	67.8481	67.8478	0.0003	No	0.0558	2790.0	125.0	2790.0	1
998241-2	20	76.5523	76.6504	76.65	0.0004	No	0.0977	4885.0	125.0	4885.0	1
998242-1	20	67.7447	67.8316	67.8315	0.0001	No	0.0868	4340.0	125.0	4340.0	1
998242-2	20	72.8111	72.9005	72.9004	0.0001	No	0.0893	4465.0	125.0	4465.0	1
998208	100	73.5020	73.5324	73.5324	0.0000	No	0.0304	304.0	25.0	304.0	1
998208D	100	68.5758	68.6066	68.6066	0.0000	No	0.0308	308.0	25.0	308.0	1
LCS	100	71.1001	71.1471	71.1471	0.0000	No	0.0470	470.0	25.0	470.0	1
998268-5	100	69.2216	69.2468	69.2468	0.0000	No	0.0252	252.0	25.0	252.0	1
998273-1	100	75.9776	75.994	75.994	0.0000	No	0.0164	164.0	25.0	164.0	1
LCSD											1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

C = mL of sample filtered.

RL= reporting limit.

ND = not detected (below the reporting limit)

Analyst Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 11TDS11A

Date Calculated: 11/4/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
998196	977	0.58	635.05	0.89
998212-2	209	0.49	135.85	0.75
998212-4	459	0.53	298.35	0.81
998221-1	517	0.58	336.05	0.89
998221-2	515	0.61	334.75	0.94
998241-1	4960	0.56	3224	0.87
998241-2	8610	0.57	5596.5	0.87
998242-1	7110	0.61	4621.5	0.94
998242-2	7510	0.59	4881.5	0.91
998208	546	0.56	354.9	0.86
998208D	546	0.56	354.9	0.87
LCS				
998268-5	462	0.55	300.3	0.84
998273-1	281	0.58	182.65	0.90





TRUESDAIL LABORATORIES, INC.
 14201 Franklin Avenue, Tustin, CA 92780-7008
 (714) 730-6239 FAX: (714) 730-6462
 www.truesdail.com

CHAIN OF CUSTODY RECORD

[IM3Plant-EW-188]

998241

COC Number

TURNAROUND TIME 10 Days

DATE 11/01/11 PAGE 1 OF 1

SAMPLE I.D.	DATE	TIME	DESCRIPTION	TESTS					COMMENTS	
				Dissolved Cr (200.7) Lab filtered	Cr(VI) (3500-Cr B)	pH (150.0) EC (120.1)	TDS (160.1)	Cr(VI) (218.6)		
PE-01-188	11/01/11	11:11	Ground water	X	X	X	X	X	4	pH = 7.7
TW-03D-188	11/01/11	11:11	Ground water	X	X	X	X	X	4	pH = 7.7
ALERT II Level III QC										
For sample conditions see form attached										
See form attached										
									5	TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time
<i>[Signature]</i>	<i>[Name]</i>	OMI	11-1-11 1530
Signature (Received)	Bonifacio Dayag	Company/ Agency TUI	Date/ Time 11-1-11 1530
Signature (Relinquished)	B. Dayag	Company/ Agency TUI	Date/ Time 11-1-11 2030
Signature (Received)	<i>[Signature]</i>	Company/ Agency TUI	Date/ Time 11/1/11 20:30
Signature (Relinquished)	Name	Company/ Agency	Date/ Time
Signature (Received)	Name	Company/ Agency	Date/ Time

SAMPLE CONDITIONS

RECEIVED COOL WARM YES NO 5.1 °C

CUSTOMY SEALED

SPECIAL REQUIREMENTS:

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
11/1/11	998221-1	9.5	N/A	N/A	N/A	QW
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
11/1/11	998222-1	9.5	N/A	N/A	N/A	QW
↓	↓ -1	↓	↓	↓	↓	↓
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
11/1/11	998223-1	9.5	N/A	N/A	N/A	QW
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
11/2/11	998241	7	5 mL	9.5	9:35 Am	QW
11/2/11	998241	7	5 mL	9.5	10:30 Am	QW
↓	998242-1	↓	↓	↓	↓	↓
↓	↓ -2	↓	↓	↓	↓	↓
↓	998246	9.5	N/A	N/A	N/A	QW
11/2/11	998245-1	9.5	N/A	N/A	N/A	QW
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓

QW

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
998021 (1-1)	Plant	>2	10/21/11	FF	NO	yes
998150 (1-8)	<1	<2	10/23/11	M.M	yes	-
998151 (1-8)	↓	↓	↓	↓	↓	-
998152 (1-2)	↓	↓	↓	↓	↓	-
998153 (1-8)	↓	↓	↓	↓	↓	-
998154 (1-13)	↓	↓	↓	↓	↓	-
998181 (1-2)	<1	>2	10/28/11	KK	NO	YRS @ 10:30 am
998107	<1	>2	10/28/11	KK	NO	YRS @ 10:45 am
998168 (1-6)	<1	<2	10/28/11	M.M	yes	-
998169 (1-2, 4)	↓	↓	↓	↓	↓	-
998170 (1-3)	↓	↓	↓	↓	↓	-
998171 (1-7)	↓	↓	↓	↓	↓	-
998172 (1-9)	↓	↓	↓	↓	↓	-
998173 (1-6)	↓	↓	↓	↓	↓	-
998174 (1-5)	↓	↓	↓	↓	↓	-
998175 (1-2)	↓	↓	↓	↓	↓	-
998189 (1-4)	>1	<2	10/28/11	M.M	yes	-
998198	<1	<2	10/31/11	M.M	yes	-
998199 (1-3)	↓	↓	↓	↓	↓	-
998202 (1-5)	↓	↓	↓	↓	↓	-
998197 (1-)	>1	↓	↓	↓	↓	-
998219	<1	<2	11/02/11	M.M	yes	-
998220 (1-8)	↓	↓	↓	↓	↓	-
998221 (1-6)	↓	↓	↓	↓	↓	-
998222 (1-3, 5)	↓	↓	↓	↓	↓	-
998223 (1-7)	↓	↓	↓	↓	↓	-
998241 (1-2)	↓	↓	↓	↓	↓	-
998242 (1-2)	↓	↓	↓	↓	↓	-
998245 (1-3)	↓	↓	↓	↓	↓	-
998246	↓	↓	↓	↓	↓	-
998247 (1-3)	↓	↓	↓	↓	↓	-
998248 (1-5)	↓	↓	↓	↓	↓	-
998249 (1-10)	↓	↓	↓	↓	↓	-
998250 (1-6)	↓	↓	↓	↓	↓	-
998251 (1-6)	↓	↓	↓	↓	↓	-
998212 (1-4)	<1	>2	11/02/11	KK	NO	YRS @ 5:30 pm
998279 (1-2)	<1	<2	11/04/11	M.M	yes	-
998280 (1-4)	↓	↓	↓	↓	↓	-
998281 (1-4)	↓	↓	↓	↓	↓	-
998282 (1-11)	↓	↓	↓	↓	↓	-
998213	↓	↓	↓	↓	↓	-
998214 (1-8)	↓	↓	↓	↓	↓	-
998315 (1-8)	↓	↓	↓	↓	↓	-
998274	Soil	-	11/08/11	M.M	STLCP/NO	-
998261	>1	<2	11/08/11	M.M	yes	-
998244	↓	↓	↓	↓	↓	-
998300	↓	↓	↓	↓	↓	-
998316	↓	↓	↓	↓	↓	-
998331	↓	↓	↓	↓	↓	-



Sample Integrity & Analysis Discrepancy Form

Client: EL

Lab # 998241

Date Delivered: 11/1/11 Time: 20:30 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes) 2.8°C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = see c.o.e Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other _____

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: S. Stabury

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

November 21, 2011

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-333 PROJECT, GROUNDWATER
MONITORING,
TLI NO.: 998242

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-333 project groundwater monitoring. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on November 1, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

No violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

fo- [Signature]
Mona Nassimi
Manager, Analytical Services

[Signature]
Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwaters

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Laboratory No.: 998242

Date: November 21, 2011

Collected: November 1, 2011

Received: November 1, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2320B	Total Alkalinity	Kim Luck
SM 4500-Si D	Soluble Silica	Jenny Tankunakorn
SM 4500-P B,E	Total Phosphorus	Jenny Tankunakorn
SM 5310C	Total Organic Carbon	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 300.0	Anions	Giawad Ghenniwa
SM 4500-NH3 D	Ammonia	Maria Mangarova
SM 4500-NO2 B	Nitrite as N	Jenny Tankunakorn
EPA 200.7	Metals by ICP	Ethel Suico
EPA 200.8	Metals by ICP/MS	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 998242

Date Received: November 1, 2011

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
998242-001	SC-700B-WDR-333	E120.1	NONE	11/1/2011	12:00	EC	7110	umhos/cm	2.00
998242-001	SC-700B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	Aluminum	ND	ug/L	50.0
998242-001	SC-700B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	BORON	1010	ug/L	200
998242-001	SC-700B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	Iron	ND	ug/L	20.0
998242-001	SC-700B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	Zinc	35.3	ug/L	10.0
998242-001	SC-700B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Antimony	ND	ug/L	10.0
998242-001	SC-700B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Arsenic	ND	ug/L	1.0
998242-001	SC-700B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Barium	14.3	ug/L	10.0
998242-001	SC-700B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Chromium	ND	ug/L	1.0
998242-001	SC-700B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Copper	ND	ug/L	5.0
998242-001	SC-700B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Lead	ND	ug/L	10.0
998242-001	SC-700B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Manganese	9.8	ug/L	1.0
998242-001	SC-700B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Molybdenum	17.1	ug/L	10.0
998242-001	SC-700B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Nickel	ND	ug/L	10.0
998242-001	SC-700B-WDR-333	E218.6	LABFLT	11/1/2011	12:00	Chromium, hexavalent	ND	ug/L	1.0
998242-001	SC-700B-WDR-333	E300	NONE	11/1/2011	12:00	Fluoride	1.50	mg/L	0.500
998242-001	SC-700B-WDR-333	E300	NONE	11/1/2011	12:00	Nitrate as N	3.03	mg/L	1.00
998242-001	SC-700B-WDR-333	E300	NONE	11/1/2011	12:00	Sulfate	519	mg/L	50.0
998242-001	SC-700B-WDR-333	SM2130B	NONE	11/1/2011	12:00	Turbidity	ND	NTU	0.100
998242-001	SC-700B-WDR-333	SM2540C	NONE	11/1/2011	12:00	Total Dissolved Solids	4340	mg/L	125
998242-001	SC-700B-WDR-333	SM4500NH3D	NONE	11/1/2011	12:00	Ammonia-N	1.14	mg/L	0.500
998242-001	SC-700B-WDR-333	SM4500NO2B	NONE	11/1/2011	12:00	Nitrite as N	ND	mg/L	0.0050

005

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
998242-002	SC-100B-WDR-333	E120.1	NONE	11/1/2011	12:00	EC	7510	umhos/cm	2.00
998242-002	SC-100B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	Aluminum	ND	ug/L	50.0
998242-002	SC-100B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	BORON	1040	ug/L	200
998242-002	SC-100B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	Iron	ND	ug/L	20.0
998242-002	SC-100B-WDR-333	E200.7	ABFLT-digested	11/1/2011	12:00	Iron	ND	ug/L	20.0
998242-002	SC-100B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	Zinc	ND	ug/L	10.0
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Antimony	ND	ug/L	10.0
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Arsenic	4.3	ug/L	1.0
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Barium	28.6	ug/L	10.0
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Chromium	871	ug/L	1.0
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Copper	ND	ug/L	5.0
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Lead	ND	ug/L	10.0
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Manganese	7.2	ug/L	1.0
998242-002	SC-100B-WDR-333	E200.8	ABFLT-digested	11/1/2011	12:00	Manganese	7.2	ug/L	1.0
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Molybdenum	22.2	ug/L	10.0
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Nickel	ND	ug/L	10.0
998242-002	SC-100B-WDR-333	E218.6	LABFLT	11/1/2011	12:00	Chromium, hexavalent	897	ug/L	21.0
998242-002	SC-100B-WDR-333	E300	NONE	11/1/2011	12:00	Fluoride	1.81	mg/L	0.500
998242-002	SC-100B-WDR-333	E300	NONE	11/1/2011	12:00	Nitrate as N	3.28	mg/L	1.00
998242-002	SC-100B-WDR-333	E300	NONE	11/1/2011	12:00	Sulfate	595	mg/L	12.5
998242-002	SC-100B-WDR-333	SM2130B	NONE	11/1/2011	12:00	Turbidity	0.169	NTU	0.100
998242-002	SC-100B-WDR-333	SM2320B	NONE	11/1/2011	12:00	Alkalinity	150	mg/L	5.00
998242-002	SC-100B-WDR-333	SM2320B	NONE	11/1/2011	12:00	Bicarbonate	150	mg/L	5.00
998242-002	SC-100B-WDR-333	SM2320B	NONE	11/1/2011	12:00	Carbonate	ND	mg/L	5.00
998242-002	SC-100B-WDR-333	SM2540C	NONE	11/1/2011	12:00	Total Dissolved Solids	4460	mg/L	125
998242-002	SC-100B-WDR-333	SM4500NH3D	NONE	11/1/2011	12:00	Ammonia-N	1.26	mg/L	0.500
998242-002	SC-100B-WDR-333	SM4500NO2B	NONE	11/1/2011	12:00	Nitrite as N	ND	mg/L	0.0050
998242-002	SC-100B-WDR-333	SM4500-PB_E	NONE	11/1/2011	12:00	Total Phosphorous-P	ND	mg/L	0.0200
998242-002	SC-100B-WDR-333	SM4500SI	NONE	11/1/2011	12:00	Soluble Silica	21.0	mg/L	1.00
998242-002	SC-100B-WDR-333	SM5310C	NONE	11/1/2011	12:00	Total Organic Carbon	ND	mg/L	0.300

ND: Non Detected (below reporting limit)
mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:

Results below 0.01ppm will have two (2) significant figures.

Result above or equal to 0.01ppm will have three (3) significant figures.

Quality Control data will always have three (3) significant figures.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800
Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Laboratory No. 998242

Page 1 of 33

Printed 11/21/2011

Samples Received on 11/1/2011 8:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-333	998242-001	11/01/2011 12:00	Water
SC-100B-WDR-333	998242-002	11/01/2011 12:00	Water

Anions By I.C. - EPA 300.0

Batch 11AN11B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998242-001 Fluoride	mg/L	11/02/2011 11:57	5.00	0.0250	0.500	1.50
Nitrate as Nitrogen	mg/L	11/02/2011 11:57	5.00	0.0550	1.00	3.03
998242-002 Fluoride	mg/L	11/02/2011 12:07	5.00	0.0250	0.500	1.81
Nitrate as Nitrogen	mg/L	11/02/2011 12:07	5.00	0.0550	1.00	3.28

Method Blank

Parameter	Unit	DF	Result
Fluoride	mg/L	1.00	ND
Nitrate as Nitrogen	mg/L	1.00	ND

Duplicate

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	5.00	1.71	1.50	13.2	0 - 20
Nitrate as Nitrogen	mg/L	5.00	3.33	3.03	9.46	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.05	4.00	101.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	3.95	4.00	98.8	90 - 110

Matrix Spike

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	5.00	22.9	21.5(20.0)	107.	85 - 115
Nitrate as Nitrogen	mg/L	5.00	25.6	23.0(20.0)	113	85 - 115

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

015



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 33

Project Number: 424973.01.DM

Printed 11/21/2011

Matrix Spike Duplicate

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	5.00	23.0	21.5(20.0)	108.	85 - 115
Nitrate as Nitrogen	mg/L	5.00	25.7	23.0(20.0)	113.	85 - 115

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.04	4.00	101.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	3.96	4.00	99.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.03	3.00	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.03	3.00	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.97	3.00	98.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.96	3.00	98.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.96	3.00	98.7	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 33

Project Number: 424973.01.DM

Printed 11/21/2011

Anions By I.C. - EPA 300.0

Batch 11AN11D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998242-001 Sulfate	mg/L	11/03/2011 10:37	100	2.00	50.0	519.
998242-002 Sulfate	mg/L	11/03/2011 11:08	25.0	0.500	12.5	595.

Method Blank

Parameter	Unit	DF	Result
Sulfate	mg/L	1.00	ND

Duplicate

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Sulfate	mg/L	100	515.	519	0.726	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	19.8	20.0	98.9	90 - 110

Matrix Spike

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Sulfate	mg/L	100	1580	1520(1000)	106.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	19.8	20.0	99.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	14.8	15.0	98.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	15.0	15.0	99.8	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 33

Project Number: 424973.01.DM

Printed 11/21/2011

Nitrite SM 4500-NO2 B

Batch 11NO211C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998242-001 Nitrite as Nitrogen	mg/L	11/02/2011 15:48	1.00	0.000360	0.0050	ND
998242-002 Nitrite as Nitrogen	mg/L	11/02/2011 15:49	1.00	0.000360	0.0050	ND

Method Blank

Parameter	Unit	DF	Result
Nitrite as Nitrogen	mg/L	1.00	ND

Duplicate

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0387	0.0400	96.8	90 - 110

Matrix Spike

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0191	0.0200(0.0200)	95.5	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0197	0.0200	98.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0208	0.0200	104	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 5 of 33
Printed 11/21/2011

Alkalinity by SM 2320B

Batch 11ALK11B

11/8/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998242-002 Alkalinity as CaCO3	mg/L	11/08/2011	1.00	1.68	5.00	150.
Bicarbonate (Calculated)	mg/L	11/08/2011	1.00	1.68	5.00	150.
Carbonate (Calculated)	mg/L	11/08/2011	1.00	1.68	5.00	ND

Method Blank

Parameter	Unit	DF	Result
Alkalinity as CaCO3	mg/L	1.00	ND

Duplicate

Lab ID = 998392-016

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	75.0	75.0	0.00	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	99.0	100.	99.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	99.0	100.	99.0	90 - 110

Matrix Spike

Lab ID = 998242-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO3	mg/L	1.00	236	250.(100.)	86.0	75 - 125

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 33

Project Number: 424973.01.DM

Printed 11/21/2011

Specific Conductivity - EPA 120.1

Batch 11EC11A

11/2/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998242-001 Specific Conductivity	umhos/cm	11/02/2011	1.00	0.0380	2.00	7110
998242-002 Specific Conductivity	umhos/cm	11/02/2011	1.00	0.0380	2.00	7510

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 998241-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	8610	8610	0.00	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	705	706	99.8	90 - 110

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	705	706	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	979	997	98.2	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 33

Project Number: 424973.01.DM

Printed 11/21/2011

Chrome VI by EPA 218.6

Batch 11CrH11C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998242-001 Chromium, Hexavalent	ug/L	11/02/2011 14:51	5.25	0.136	1.0	ND
998242-002 Chromium, Hexavalent	ug/L	11/02/2011 14:30	105	2.73	21.0	897.

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 998172-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	1.41	1.41	0.0709	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.96	5.00	99.2	90 - 110

Matrix Spike

Lab ID = 998172-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.29	6.71(5.30)	92.0	90 - 110

Matrix Spike

Lab ID = 998172-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.63	6.74(5.30)	97.9	90 - 110

Matrix Spike

Lab ID = 998172-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.92	8.11(5.30)	96.5	90 - 110

Matrix Spike

Lab ID = 998172-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.69	6.77(5.30)	98.4	90 - 110

Matrix Spike

Lab ID = 998172-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.28	7.39(5.30)	98.0	90 - 110

Matrix Spike

Lab ID = 998172-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.18	1.22(1.06)	95.7	90 - 110

Matrix Spike

Lab ID = 998172-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.92	8.10(5.30)	96.7	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 33

Project Number: 424973.01.DM

Printed 11/21/2011

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	6.70	6.84(5.30)	97.5	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.16	1.18(1.06)	98.2	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.13	1.19(1.06)	94.2	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	6.81	6.90(5.30)	98.2	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	7.31	7.46(5.30)	97.2	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.15	1.18(1.06)	97.3	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	7.95	8.04(5.30)	98.3	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.14	1.19(1.06)	95.3	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	7.09	7.16(5.30)	98.8	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.32	1.31(1.06)	101.	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	5.25	5.71	5.71(5.25)	99.9	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	105	1920	1950(1050)	97.5	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 10 of 33

Project Number: 424973.01.DM

Printed 11/21/2011

Metals by EPA 200.7, Total

Batch 111511A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998242-001 Boron	ug/L	11/15/2011 13:44	1.00	1.50	200.	1010
Zinc	ug/L	11/15/2011 13:44	1.00	3.89	10.0	35.3
998242-002 Boron	ug/L	11/15/2011 14:15	1.00	1.50	200.	1040
Zinc	ug/L	11/15/2011 14:15	1.00	3.89	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Zinc	ug/L	1.00	ND
Boron	ug/L	1.00	ND

Duplicate

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Zinc	ug/L	1.00	35.0	35.3	0.853	0 - 20
Boron	ug/L	1.00	997.	1010	1.26	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	102.	100.	102.	85 - 115
Boron	ug/L	1.00	90.8	100.	90.8	85 - 115

Matrix Spike

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Zinc	ug/L	1.00	120.	135.(100.)	84.6	75 - 125
Boron	ug/L	1.00	1110	1110(100.)	97.0	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5140	5000	103.	90 - 110
Boron	ug/L	1.00	4770	5000	95.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5110	5000	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5130	5000	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5170	5000	103.	90 - 110
Boron	ug/L	1.00	4600	5000	92.1	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 12 of 33

Project Number: 424973.01.DM

Printed 11/21/2011

Metals by EPA 200.7, Total

Batch 111111A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998242-001 Aluminum	ug/L	11/11/2011 09:43	1.00	2.83	50.0	ND
Iron	ug/L	11/11/2011 09:43	1.00	1.34	20.0	ND
998242-002 Aluminum	ug/L	11/11/2011 10:27	1.00	2.83	50.0	ND
Iron	ug/L	11/11/2011 10:27	1.00	1.34	20.0	ND

Method Blank

Parameter	Unit	DF	Result
Aluminum	ug/L	1.00	ND
Iron	ug/L	1.00	ND

Duplicate

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Aluminum	ug/L	1.00	ND	0.00	0	0 - 20
Iron	ug/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	103.	100.	103.	85 - 115
Iron	ug/L	1.00	106.	100.	106.	85 - 115

Matrix Spike

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	1.00	84.5	100.(100.)	84.5	75 - 125
Iron	ug/L	1.00	109.	100.(100.)	109.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5140	5000	103.	90 - 110
Iron	ug/L	1.00	5170	5000	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5330	5000	107.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5300	5000	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5470	5000	109.	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 14 of 33
Printed 11/21/2011

Metals by EPA 200.8, Total

Batch 111111C

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include Antimony, Copper, Lead, Manganese, Molybdenum, Nickel for samples 998242-001 and 998242-002.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Rows for Nickel, Antimony, Copper, Lead, Manganese, Molybdenum.

Duplicate

Lab ID = 998242-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Rows for Nickel, Antimony, Copper, Lead, Manganese, Molybdenum.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 15 of 33

Project Number: 424973.01.DM

Printed 11/21/2011

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	5.00	99.3	100.	99.3	85 - 115
Antimony	ug/L	5.00	98.6	100.	98.6	85 - 115
Copper	ug/L	5.00	99.2	100.	99.2	85 - 115
Lead	ug/L	5.00	95.1	100.	95.1	85 - 115
Manganese	ug/L	5.00	95.4	100.	95.4	85 - 115
Molybdenum	ug/L	5.00	88.9	100.	88.9	85 - 115

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	5.00	95.3	100.	95.3	85 - 115
Antimony	ug/L	5.00	94.6	100.	94.6	85 - 115
Copper	ug/L	5.00	95.3	100.	95.3	85 - 115
Lead	ug/L	5.00	92.2	100.	92.2	85 - 115
Manganese	ug/L	5.00	94.0	100.	94.0	85 - 115
Molybdenum	ug/L	5.00	87.9	100.	87.9	85 - 115

Matrix Spike

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nickel	ug/L	4.44	208.	222(222)	93.5	75 - 125
Antimony	ug/L	4.44	171.	222(222)	77.2	75 - 125
Copper	ug/L	4.44	204.	222(222)	91.9	75 - 125
Lead	ug/L	4.44	180.	222(222)	80.9	75 - 125
Manganese	ug/L	4.44	225.	232.(222)	96.8	75 - 125
Molybdenum	ug/L	4.44	213.	239.(222)	88.4	75 - 125

Matrix Spike Duplicate

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nickel	ug/L	4.44	212.	222(222)	95.7	75 - 125
Antimony	ug/L	4.44	182.	222(222)	82.1	75 - 125
Copper	ug/L	4.44	210.	222(222)	94.4	75 - 125
Lead	ug/L	4.44	187.	222(222)	84.1	75 - 125
Manganese	ug/L	4.44	233.	232.(222)	100.	75 - 125
Molybdenum	ug/L	4.44	224.	239.(222)	93.0	75 - 125

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 20 of 33
Printed 11/21/2011

Metals by EPA 200.8, Total

Batch 111611A

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include Barium and Chromium for samples 998242-001 and 998242-002.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Rows for Barium and Chromium.

Duplicate

Lab ID = 998242-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Rows for Barium and Chromium.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows for Barium and Chromium.

Lab Control Sample Duplicate

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows for Barium and Chromium.

Matrix Spike

Lab ID = 998242-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Rows for Barium and Chromium.

Matrix Spike Duplicate

Lab ID = 998242-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Rows for Barium and Chromium.

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows for Barium and Chromium.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 23 of 33

Project Number: 424973.01.DM

Printed 11/21/2011

Serial Dilution

Lab ID = 998242-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	22.22	26.5	28.6	7.70	0 - 10
Chromium	ug/L	22.22	843.	871	3.26	0 - 10



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 24 of 33

Project Number: 424973.01.DM

Printed 11/21/2011

Metals by EPA 200.8, Total

Batch 111511B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998242-001 Arsenic	ug/L	11/16/2011 02:56	4.44	0.253	1.0	ND
998242-002 Arsenic	ug/L	11/16/2011 03:45	4.44	0.253	1.0	4.3

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND

Duplicate

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	4.44	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	110.	100.	110.	85 - 115

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	112.	100.	112.	85 - 115

Matrix Spike

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	4.44	242.	222(222)	109.	75 - 125

Matrix Spike Duplicate

Lab ID = 998242-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	4.44	255.	222(222)	115.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	47.4	50.0	94.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	53.9	50.0	108.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	53.0	50.0	106	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	50.6	50.0	101.	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 26 of 33
Printed 11/21/2011

Reactive Silica by SM4500-Si D

Batch 11Si11A

11/3/2011

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 998242-002 Silica, mg/L, 11/03/2011, 25.0, 0.532, 1.00, 21.0

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Silica, mg/L, 1.00, ND

Duplicate

Lab ID = 998260-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Silica, mg/L, 1.00, ND, 0.00, 0, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Silica, mg/L, 1.00, 0.201, 0.220, 91.2, 90 - 110

Matrix Spike

Lab ID = 998260-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Silica, mg/L, 1.00, 0.420, 0.400(0.400), 105, 75 - 125

MRCSS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Silica, mg/L, 1.00, 0.103, 0.110, 93.9, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Silica, mg/L, 1.00, 0.387, 0.400, 96.8, 90 - 110

Total Dissolved Solids by SM 2540 C

Batch 11TDS11A

11/2/2011

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 998242-001 Total Dissolved Solids, mg/L, 11/02/2011, 1.00, 0.400, 125, 4340. Row 2: 998242-002 Total Dissolved Solids, mg/L, 11/02/2011, 1.00, 0.400, 125, 4460

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Total Dissolved Solids, mg/L, 1.00, ND

Duplicate

Lab ID = 998208-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Total Dissolved Solids, mg/L, 1.00, 308, 304, 1.31, 0 - 5

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Total Dissolved Solids, mg/L, 1.00, 470, 500, 94.0, 90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 27 of 33

Project Number: 424973.01.DM

Printed 11/21/2011

Total Organic Carbon (T/DOC) SM 5310 C

Batch 11TOC11B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998242-002 Total Organic Carbon	mg/L	11/04/2011 12:08	1.00	0.0103	0.300	ND

Method Blank

Parameter	Unit	DF	Result
Total Organic Carbon	mg/L	1.00	ND

Duplicate

Lab ID = 998189-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Organic Carbon	mg/L	5.00	59.1	59.0	0.186	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	3.12	3.33	93.5	90 - 110

Matrix Spike

Lab ID = 998260-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.49	10.0(10.0)	94.9	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	3.15	3.33	94.6	90 - 110

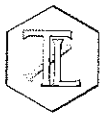
MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.27	10.0	92.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.24	10.0	92.4	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 28 of 33
Printed 11/21/2011

Total Phosphate, SM 4500-PB,E

Batch 11TP11A

11/7/2011

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 998242-002 Phosphate, Total As P, mg/L, 11/07/2011, 1.00, 0.00530, 0.0200, ND

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Phosphate, Total As P, mg/L, 1.00, ND

Duplicate

Lab ID = 998242-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Phosphate, Total As P, mg/L, 1.00, ND, 0.00, 0, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Phosphate, Total As P, mg/L, 1.00, 0.108, 0.100, 108, 90 - 110

Matrix Spike

Lab ID = 998242-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Phosphate, Total As P, mg/L, 1.00, 0.0645, 0.0650(0.0650), 99.2, 75 - 125

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Phosphate, Total As P, mg/L, 1.00, 0.0632, 0.0600, 105, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Phosphate, Total As P, mg/L, 1.00, 0.0599, 0.0650, 92.2, 90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 29 of 33
Printed 11/21/2011

Ammonia Nitrogen by SM4500-NH3D

Batch 11NH3-E11A

11/3/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998242-001 Ammonia as N	mg/L	11/03/2011	1.00	0.00200	0.500	1.14
998242-002 Ammonia as N	mg/L	11/03/2011	1.00	0.00200	0.500	1.26

Method Blank

Parameter	Unit	DF	Result
Ammonia as N	mg/L	1.00	ND

Duplicate

Lab ID = 998242-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Ammonia as N	mg/L	1.00	1.16	1.26	8.35	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	10.4	10.0	104.	90 - 110

Matrix Spike

Lab ID = 998242-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.93	7.26(6.00)	94.6	75 - 125

Matrix Spike Duplicate

Lab ID = 998242-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	7.42	7.26(6.00)	103.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.27	6.00	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.56	6.00	109.	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Printed 12/19/2011
Revised

Metals by EPA 200.8, Dissolved

Batch 111811B

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 998242-002 Manganese, ug/L, 11/19/2011 05:03, 4.44, 0.253, 1.0, 7.2

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Manganese, ug/L, 1.00, ND

Duplicate

Lab ID = 998222-007

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Manganese, ug/L, 4.44, 365., 375, 2.65, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 5.00, 96.2, 100., 96.2, 85 - 115

Lab Control Sample Duplicate

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 5.00, 96.2, 100., 96.2, 85 - 115

Matrix Spike

Lab ID = 998222-007

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 4.44, 473., 486(111), 88.6, 75 - 125

MRCSS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 4.44, 48.2, 50.0, 96.4, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 1.00, 45.4, 50.0, 90.7, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 1.00, 46.6, 50.0, 93.2, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 1.00, 48.1, 50.0, 96.2, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 1.00, 45.1, 50.0, 90.2, 90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 32 of 33
Printed 11/21/2011

Metals by 200.7, Dissolved

Batch 111111A

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 998242-002 Iron, ug/L, 11/11/2011 10:33, 1.00, 1.34, 20.0, ND

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Iron, ug/L, 1.00, ND

Duplicate

Lab ID = 998242-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Iron, ug/L, 1.00, ND, 0.00, 0, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Iron, ug/L, 1.00, 106., 100., 106., 85 - 115

Matrix Spike

Lab ID = 998242-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Iron, ug/L, 1.00, 108., 100.(100.), 108., 75 - 125

MRCSS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Iron, ug/L, 1.00, 5170, 5000, 103., 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Iron, ug/L, 1.00, 5470, 5000, 109., 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Iron, ug/L, 1.00, 5360, 5000, 107., 90 - 110

Interference Check Standard A

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Iron, ug/L, 1.00, 2200, 2000, 110., 80 - 120

Interference Check Standard A

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Iron, ug/L, 1.00, 2330, 2000, 117., 80 - 120

Interference Check Standard AB

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Iron, ug/L, 1.00, 2220, 2000, 111, 80 - 120

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 33 of 33

Project Number: 424973.01.DM

Printed 11/21/2011

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2360	2000	118.	80 - 120

Turbidity by SM 2130 B

Batch 11TUC11B

11/2/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998242-001 Turbidity	NTU	11/02/2011	1.00	0.0140	0.100	ND
998242-002 Turbidity	NTU	11/02/2011	1.00	0.0140	0.100	0.169

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 998242-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.170	0.169	0.590	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.29	8.00	104.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.07	8.00	101.	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Mona Nassimi

Manager, Analytical Services

E2 Condon



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 11TDS11A
 Date Calculated: 11/4/11

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	112.3586	112.3589	112.3588	0.0001	No	0.0002	2.0	25.0	ND	1
998196	100	68.5199	68.5769	68.5766	0.0003	No	0.0567	567.0	25.0	567.0	1
998212-2	200	115.2462	115.2667	115.2667	0.0000	No	0.0205	102.5	12.5	102.5	1
998212-4	100	74.7542	74.7784	74.7784	0.0000	No	0.0242	242.0	25.0	242.0	1
998221-1	100	76.5597	76.5899	76.5896	0.0003	No	0.0299	299.0	25.0	299.0	1
998221-2	100	65.5707	65.6025	65.6021	0.0004	No	0.0314	314.0	25.0	314.0	1
998241-1	20	67.7920	67.8481	67.8478	0.0003	No	0.0558	2790.0	125.0	2790.0	1
998241-2	20	76.5523	76.6504	76.65	0.0004	No	0.0977	4885.0	125.0	4885.0	1
998242-1	20	67.7447	67.8316	67.8315	0.0001	No	0.0868	4340.0	125.0	4340.0	1
998242-2	20	72.8111	72.9005	72.9004	0.0001	No	0.0893	4465.0	125.0	4465.0	1
998208	100	73.5020	73.5324	73.5324	0.0000	No	0.0304	304.0	25.0	304.0	1
998208D	100	68.5758	68.6066	68.6066	0.0000	No	0.0308	308.0	25.0	308.0	1
LCS	100	71.1001	71.1471	71.1471	0.0000	No	0.0470	470.0	25.0	470.0	1
998268-5	100	69.2216	69.2468	69.2468	0.0000	No	0.0252	252.0	25.0	252.0	1
998273-1	100	75.9776	75.994	75.994	0.0000	No	0.0164	164.0	25.0	164.0	1
LCS											1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where: A = weight of dish + residue in grams.
 B = weight of dish in grams.
 C = mL of sample filtered.

RL = reporting limit
 ND = not detected (below the reporting limit)

Analyst Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 11TDS11A

Date Calculated: 11/4/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
998196	977	0.58	635.05	0.89
998212-2	209	0.49	135.85	0.75
998212-4	459	0.53	298.35	0.81
998221-1	517	0.58	336.05	0.89
998221-2	515	0.61	334.75	0.94
998241-1	4960	0.56	3224	0.87
998241-2	8610	0.57	5596.5	0.87
998242-1	7110	0.61	4621.5	0.94
998242-2	7510	0.59	4881.5	0.91
998208	546	0.56	354.9	0.86
998208D	546	0.56	354.9	0.87
LCS				
998268-5	462	0.55	300.3	0.84
998273-1	281	0.58	182.65	0.90





Alkalinity by SM 2320B Calculations

EE Condon

Date of Analysis: 11/8/11
 Start of Analysis:
 Date Sampled:

Analytical Batch: 11ALK11B
 Matrix: Water
 Date Calculated: 11/8/11

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO3	RL, ppm	Total Alkalinity Reported Value	HCO3 Alkalinity as CaCO3 (ppm)	CO3 Alkalinity as CaCO3 (ppm)	OH Alkalinity as CaCO3 (ppm)	Low Alkalinity as CaCO3 (<20ppm)
BLANK	6.99	50	0.02		0.0	0.05		0.9	5	ND	ND	ND	ND	
998242-2	7.49	50	0.02		0.0	7.50		150.0	5	150.0	150.0	ND	ND	
998392-16	7.11	50	0.02		0.0	3.75		75.0	5	75.0	75.0	ND	ND	
998392-21	7.68	50	0.02		0.0	3.70		74.0	5	74.0	74.0	ND	ND	
998250-1	6.55	50	0.02		0.0	9.30		186.0	5	186.0	186.0	ND	ND	
998250-2	6.69	50	0.02		0.0	17.35		347.0	5	347.0	347.0	ND	ND	
998250-3	6.59	50	0.02		0.0	17.50		350.0	5	350.0	350.0	ND	ND	
998250-5	6.89	50	0.02		0.0	11.15		223.0	5	223.0	223.0	ND	ND	
998242-1	7.38	50	0.02		0.0	1.75		35.0	5	35.0	35.0	ND	ND	
998392-16D	7.15	50	0.02		0.0	3.75		75.0	5	75.0	75.0	ND	ND	
998242-2MS	8.91	50	0.02	2.0	40.0	11.80		236.0	5	236.0	156.0	80	ND	
LCS1	10.30	50	0.02	2.2	44.0	4.95		99.0	5	99.0	11.0	88	ND	
LCS2	10.25	50	0.02	2.2	44.0	4.95		99.0	5	99.0	11.0	88	ND	

Calculations as follows:

$$T \text{ or } P = \left(\frac{A \times N \times 50000}{mL \text{ sample}} \right)$$

$$\text{Low Alkalinity: } = \frac{(2 \times B - C) \times N \times 50000}{mL \text{ sample}}$$

ND: Not Detected (below the reporting limit)
 LCS: Laboratory Control Standard
 LCS2: Laboratory Control Standard Duplicate
 MS: Matrix Spike
 MSD: Matrix Spike Duplicate

Where: B = mL titrant to first recorded pH
 C = total mL titrant to reach pH 0.3 unit lower
 N = normality of standard acid

Analyst Printed Name
Lucie

Analyst Signature

Reviewer Printed Name

Reviewer Signature



TRUESDAIL LABORATORIES, INC.
14201 Franklin Avenue, Tustin, CA 92780-7008
(714)730-6239 FAX: (714) 730-6462
www.truesdail.com

CHAIN OF CUSTODY RECORD

(IM3)Plant-WDR-333]

TURNAROUND TIME 10 Days

DATE 11/01/11

PAGE 1 OF 1

998242

SAMPLE ID.	DATE	TIME	DESCRIPTION	TESTS														COMMENTS
				Cr(VI) (218.6) Lab Filtered	Alkalinity (2320-B)	EC (120.1)	TDS (2540 c)	Turb (2130)	Total Metals (200.7) See List Below	Ammonia (4500-NH3)	Total P (4500-P)	Anions (300.0) F, NO3, SO4	TOC (5310 C)	Dissolved Metals (200.7) Fe, Mn lab filtered	Soluble Silica - Reactive (4500-SI COND)	NO2 (4500-NO2B)	NUMBER OF CONTAINERS	
SC-700B-WDR-333	11/01/11	1200		X	X	X	X	X	X	X	X	X	X	X	X	X	6	
SC-100B-WDR-333	11/01/11	1200		X	X	X	X	X	X	X	X	X	X	X	X	X	7	
ALERT !! Level III QC																		
For Sample Containers See Form Attached																		
TOTAL NUMBER OF CONTAINERS 13																		

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time
[Signature]	Benjamin Dayag	Company/ Agency	11-1-11 1530
Signature (Received)	Benjamin Dayag	Company/ Agency	11-1-11 1530
Signature (Relinquished)	B. Dayag	Company/ Agency	11-1-11 2030
Signature (Received)	B. Dayag	Company/ Agency	11-1-11 2030
Signature (Relinquished)	[Signature]	Company/ Agency	
Signature (Received)	[Signature]	Company/ Agency	

SAMPLE CONDITIONS

RECEIVED COOL WARM S. 199°F
CUSTODY SEALED YES NO

SPECIAL REQUIREMENTS:

The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
11/1/11	998221-1	9.5	N/A	N/A	N/A	QW
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
11/1/11	998222-1	9.5	N/A	N/A	N/A	QW
↓	↓ -1	↓	↓	↓	↓	↓
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
11/1/11	998223-1	9.5	N/A	N/A	N/A	QW
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
11/2/11	998241	7	5 mL	9.5	9:35 Am	QW
11/2/11	998241	7	5 mL	9.5	10:30 Am	QW
↓	998242-1	↓	↓	↓	↓	↓
↓	↓ -2	↓	↓	↓	↓	↓
↓	998246	9.5	N/A	N/A	N/A	QW
11/2/11	998245-1	9.5	N/A	N/A	N/A	QW
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓

QW

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
998021 (1-1) Plant		>2	10/21/11	KK	NO	yes
998150 (1-8)	<1	<2	10/23/11	M.M	yes	-
998151 (1-8)	↓	↓	↓	↓	↓	-
998152 (1-2)	↓	↓	↓	↓	↓	-
998153 (1-8)	↓	↓	↓	↓	↓	-
998154 (1-13)	↓	↓	↓	↓	↓	-
998181 (1-2)	<1	>2	10/28/11	KK	NO	yes @ 10:30 AM
998107	<1	>2	10/28/11	KK	NO	yes @ 10:45 am
998168 (1-6)	<1	<2	10/28/11	M.M	yes	-
998169 (1-2, 4-3)	↓	↓	↓	↓	↓	-
998170 (1-3)	↓	↓	↓	↓	↓	-
998171 (1-3)	↓	↓	↓	↓	↓	-
998172 (1-9)	↓	↓	↓	↓	↓	-
998173 (1-6)	↓	↓	↓	↓	↓	-
998174 (1-5)	↓	↓	↓	↓	↓	-
998175 (1-2)	↓	↓	↓	↓	↓	-
998189 (1-4)	>1	<2	10/28/11	M.M	yes	-
998198	<1	<2	10/31/11	M.M	yes	-
998199 (1-3)	↓	↓	↓	↓	↓	-
998202 (1-5)	↓	↓	↓	↓	↓	-
998197 (1-)	>1	↓	↓	↓	↓	-
998219	>1	<2	11/02/11	M.M	yes	-
998220 (1-8)	↓	↓	↓	↓	↓	-
998221 (1-6)	↓	↓	↓	↓	↓	-
998222 (1-3, 5-7)	↓	↓	↓	↓	↓	-
998223 (1-7)	↓	↓	↓	↓	↓	-
998241 (1-2)	↓	↓	↓	↓	↓	-
998242 (1-2)	↓	↓	↓	↓	↓	-
998245 (1-3)	↓	↓	↓	↓	↓	-
998246	↓	↓	↓	↓	↓	-
998247 (1-3)	↓	↓	↓	↓	↓	-
998248 (1-5)	↓	↓	↓	↓	↓	-
998249 (1-10)	↓	↓	↓	↓	↓	-
998250 (1-6)	↓	↓	↓	↓	↓	-
998251 (1-6)	↓	↓	↓	↓	↓	-
998212 (1-2, 4)	<1	>2	11/02/11	KK	NO	yes @ 5:30 pm
998279 (1-2)	<1	<2	11/04/11	M.M	yes	-
998280 (1-4)	↓	↓	↓	↓	↓	-
998281 (1-4)	↓	↓	↓	↓	↓	-
998282 (1-11)	↓	↓	↓	↓	↓	-
998213	↓	↓	↓	↓	↓	-
998314 (1-8)	↓	↓	↓	↓	↓	-
998315 (1-8)	↓	↓	↓	↓	↓	-
998274	Soil	-	11/07/11	M.M	ST/CH/PLC	-
998261	>1	<2	11/08/11	M.M	yes	-
998244	↓	↓	↓	↓	↓	-
998300	↓	↓	↓	↓	↓	-
998316	↓	↓	↓	↓	↓	-
998331	↓	↓	↓	↓	↓	-



Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 998242

Date Delivered: 11/1/11 Time: 20:30 By: Mail Field Service Client

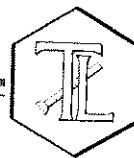
1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 3.8°C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = see c.o.c. Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other _____

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Stebbins

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

November 27, 2011

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-334 PROJECT, GROUNDWATER MONITORING, TLI NO.: 998411

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-334 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

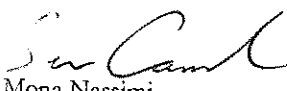
The samples were received and delivered with the chain of custody on November 8, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

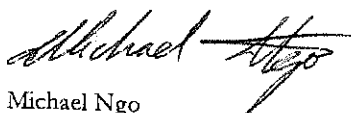
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 998411

Date: November 27, 2011

Collected: November 8, 2011

Received: November 8, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 998411
Date Received: November 8, 2011

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
998411-001	SC-700B-WDR-334	E120.1	NONE	11/8/2011	11:00	EC	7250	umhos/cm	2.00
998411-001	SC-700B-WDR-334	E200.8	NONE	11/8/2011	11:00	Chromium	ND	ug/L	1.0
998411-001	SC-700B-WDR-334	E200.8	NONE	11/8/2011	11:00	Manganese	6.5	ug/L	1.0
998411-001	SC-700B-WDR-334	E218.6	LABFLT	11/8/2011	11:00	Chromium, hexavalent	ND	ug/L	1.0
998411-001	SC-700B-WDR-334	SM2130B	NONE	11/8/2011	11:00	Turbidity	ND	NTU	0.100
998411-001	SC-700B-WDR-334	SM2540C	NONE	11/8/2011	11:00	Total Dissolved Solids	4400	mg/L	125

ND: Non Detected (below reporting limit)
mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01ppm will have two (2) significant figures.
Result above or equal to 0.01ppm will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Laboratory No. 998411

Page 1 of 9

Printed 11/27/2011

Samples Received on 11/8/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-334	998411-001	11/08/2011 11:00	Water

Specific Conductivity - EPA 120.1

Batch 11EC11F

11/11/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998411-001 Specific Conductivity	umhos/cm	11/11/2011	1.00	0.0380	2.00	7250

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7290	7250	0.550	0 - 10

Lab ID = 998411-001

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	675	706	95.6	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	676	706	95.8	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	675	706	95.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	943	997	94.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	943	997	94.6	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

007



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 3 of 9
Printed 11/27/2011

Chrome VI by EPA 218.6

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 998411-001 Chromium, Hexavalent, ug/L, 11/11/2011 18:48, 5.25, 0.136, 1.0, ND.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Chromium, Hexavalent, ug/L, 1.00, ND.

Duplicate

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.05, 1.63, 1.66, 1.80, 0 - 20.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 4.82, 5.00, 96.4, 90 - 110.

Matrix Spike

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 5.25, 7.32, 7.80(5.25), 90.9, 90 - 110.

Matrix Spike

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.19, 1.06(1.06), 112., 90 - 110.

Matrix Spike

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 5.25, 5.50, 5.25(5.25), 105., 90 - 110.

Matrix Spike

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.07, 1.06(1.06), 101., 90 - 110.

Matrix Spike

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.09, 1.06(1.06), 102., 90 - 110.

Matrix Spike

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.09, 1.06(1.06), 103., 90 - 110.

Matrix Spike

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 7.18, 7.61(5.30), 91.8, 90 - 110.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 6 of 9
Printed 11/27/2011

Metals by EPA 200.8, Total

Batch 112111B

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include Chromium and Manganese results for sample 998411-001 and a Method Blank.

Table with 4 columns: Parameter, Unit, DF, Result. Rows include Chromium and Manganese results for a Method Blank.

Duplicate

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Rows include Chromium and Manganese results for a Duplicate sample.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows include Chromium and Manganese results for a Lab Control Sample.

Matrix Spike

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Rows include Chromium and Manganese results for a Matrix Spike.

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows include Chromium and Manganese results for MRCCS - Secondary.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row includes Chromium result for MRCVS - Primary.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row includes Chromium result for MRCVS - Primary.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row includes Chromium result for MRCVS - Primary.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row includes Manganese result for MRCVS - Primary.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 8 of 9
Printed 11/27/2011

Total Dissolved Solids by SM 2540 C

Batch 11TDS11E

11/14/2011

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Includes data for Total Dissolved Solids (mg/L) and Method Blank results.

Turbidity by SM 2130 B

Batch 11TUC11E

11/9/2011

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Includes data for Turbidity (NTU) and Method Blank results.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.


Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 9 of 9
Printed 11/27/2011

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi
Manager, Analytical Services

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

015



E2 Condon

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 11TDS11E

Date Calculated: 11/16/11

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	67.7812	67.7814	67.7812	0.0002	No	0.0000	0.0	25.0	ND	1
998392-16	50	67.2592	67.2899	67.2896	0.0003	No	0.0304	608.0	50.0	608.0	1
998396-1	50	75.4502	75.5076	75.5072	0.0004	No	0.0570	1140.0	50.0	1140.0	1
998396-2	100	111.188	111.2377	111.2377	0.0000	No	0.0497	497.0	25.0	497.0	1
998396-3	50	68.884	68.9263	68.9261	0.0002	No	0.0421	842.0	50.0	842.0	1
998396-4	50	74.2332	74.2672	74.2672	0.0000	No	0.0340	680.0	50.0	680.0	1
998396-5	100	102.7239	102.7758	102.7757	0.0001	No	0.0518	518.0	25.0	518.0	1
998396-6	100	110.4318	110.4827	110.4826	0.0001	No	0.0508	508.0	25.0	508.0	1
998396-7	50	66.8102	66.8788	66.8784	0.0004	No	0.0682	1364.0	50.0	1364.0	1
998396-8	50	68.1669	68.2255	68.2253	0.0002	No	0.0584	1168.0	50.0	1168.0	1
998396-9	50	70.8997	70.9591	70.959	0.0001	No	0.0593	1186.0	50.0	1186.0	1
998392-16D	50	69.7504	69.7814	69.7814	0.0000	No	0.0310	620.0	50.0	620.0	1
LCS	100	68.6053	68.6556	68.6552	0.0004	No	0.0499	499.0	25.0	499.0	1
998396-10	50	67.2147	67.2585	67.2583	0.0002	No	0.0436	872.0	50.0	872.0	1
998404-1	50	67.7363	67.7897	67.7894	0.0003	No	0.0531	1062.0	50.0	1062.0	1
998404-2	100	104.8910	104.9487	104.9485	0.0002	No	0.0575	575.0	25.0	575.0	1
998404-3	100	103.4165	103.4757	103.4754	0.0003	No	0.0589	589.0	25.0	589.0	1
998404-4	100	108.8880	108.7407	108.7403	0.0004	No	0.0523	523.0	25.0	523.0	1
998411	20	50.3841	50.4725	50.4722	0.0003	No	0.0881	4405.0	125.0	4405.0	1
998443-5	100	111.5177	111.5583	111.5582	0.0001	No	0.0405	405.0	25.0	405.0	1
998486-3	100	109.0730	109.1079	109.1075	0.0004	No	0.0345	345.0	25.0	345.0	1
998486-5	50	51.0000	51.0416	51.0416	0.0000	No	0.0416	832.0	50.0	832.0	1
998486-6	100	105.3536	105.3892	105.3889	0.0003	No	0.0353	353.0	25.0	353.0	1
LCS											1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

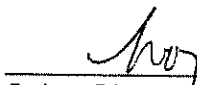
C = mL of sample filtered.

RL= reporting limit.


ND = not detected (below the reporting limit)


Analyst Printed Name


Analyst Signature


Reviewer Printed Name


Reviewer Signature

* COC - signed 

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 11TDS11E

Date Calculated: 11/16/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
998392-16	1045	0.58	679.25	0.90
998396-1	1660	0.69	1079	1.06
998396-2	836	0.59	543.4	0.91
998396-3	1258	0.67	817.7	1.03
998396-4	1093	0.62	710.45	0.96
998396-5	840	0.62	546	0.95
998396-6	845	0.60	549.25	0.92
998396-7	1782	0.77	1158.3	1.18
998396-8	1605	0.73	1043.25	1.12
998396-9	1725	0.69	1121.25	1.06
998392-16D	1045	0.59	679.25	0.91
LCS				
998396-10	1243	0.70	807.95	1.08
998404-1	1818	0.58	1181.7	0.90
998404-2	942	0.61	612.3	0.94
998404-3	928	0.63	603.2	0.98
998404-4	833	0.63	541.45	0.97
998411	7650	0.58	4972.5	0.89
998443-5	619	0.65	402.35	1.01
998486-3	545	0.63	354.25	0.97
998486-5	1367	0.61	888.55	0.94
998486-6	536	0.66	348.4	1.01



TRUESDAIL LABORATORIES, INC.
 14201 Franklin Avenue, Tustin, CA 92780-7008
 (714)730-6239 FAX: (714) 730-6462
 www.truesdail.com

CHAIN OF CUSTODY RECORD

[IM3] Plant-WDR-334]

998411

COC Number

TURNAROUND TIME 10 Days

DATE 11/08/11 PAGE 1 OF 1

COMPANY E2	PROJECT NAME PG&E Topock	PHONE (530) 229-3303	FAX (530) 339-3303	ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612	P.O. NUMBER 424973.01.DM	TEAM 1	SAMPLERS (SIGNATURE) 	DATE 11/08/11	TIME 11:00	DESCRIPTION Water	Cr6 (218.6) Lab Filtered	X	Total Metals (200.7) Cr, Mn	X	Specific Conductance (120.1)	X	TDS (SM2540C)	X	Turbidity (SM2130)	X	COMMENTS	NUMBER OF CONTAINERS	TOTAL NUMBER OF CONTAINERS			
SC-700B-WDR-334																									3	6 (200.7)

**ALERT!!
Level III QC**

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	RECEIVED	COOL	WARM	TEMP °F
	Robert Davis	PG&E	11-08-11 18:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.9°C
Signature (Received)	Printed Name	Company/Agency	Date/Time	CUSTODY SEALED	YES	NO	
	Robert Davis	PG&E	11-08-11 18:30	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	SPECIAL REQUIREMENTS:			
	Robert Davis	PG&E	11-08-11 21:30				
Signature (Received)	Printed Name	Company/Agency	Date/Time				
	Shirley...	PG&E	11/08/11 21:30				
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time				
Signature (Received)	Printed Name	Company/Agency	Date/Time				

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
11-8-2011	998374-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-12					
	-13					
	-14					
11/9/2011	998411	7	5 mL	9.5	8:20 AM	GW
11/9/2011	998412-1	7	5 mL	9.5	9:30 AM	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-12					
	-13					
11/9/11	998413-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					

al

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
998339(1-5)	>1	<2	11/07/14	M.M	yes	-
998342(1-3)	↓	↓	↓	↓	↓	-
998344(1-4)	↓	↓	↓	↓	↓	-
998358	↓	↓	↓	↓	↓	-
998359	↓	↓	↓	↓	↓	-
998360	↓	↓	↓	↓	↓	-
998361(1-11)	↓	↓	↓	↓	↓	-
998373(1-11)	<1	<2	11/08/14	N.M	yes	-
998374(11/12/14)	↓	↓	↓	↓	↓	-
998369(1-4)	>1	<2	↓	↓	↓	-
998377(1-4)	↓	↓	↓	↓	↓	-
998411	<1	<2	11/09/14	M.M	yes	-
998413/358	↓	↓	↓	↓	↓	-
998412(1-13)	<1	>2	↓	↓	↓	NO
998399	>1	<2	11/09/14	U.M	yes	-
998397(1-3)	↓	↓	↓	↓	↓	-
998422	↓	↓	↓	↓	↓	-
998440(15)	<1	<2	11/11/14	M.M	yes	-
998441	↓	↓	↓	↓	↓	-
998442(1-6)	↓	↓	↓	↓	↓	-
998443(1-7)	↓	↓	↓	↓	↓	-
998485(1-2)	↓	↓	↓	↓	↓	-
998486(4-6,8)	↓	↓	↓	↓	↓	-
998488(1-6)	↓	↓	↓	↓	↓	-
998510(1-5)	<1	<2	11/14/14	M.M	yes	-
998511(1-2)	↓	↓	↓	↓	↓	-
998507(1-4)	>1	↓	↓	↓	↓	-
998482	Solid	-	11/14/14	M.M	TTLC	-
998483	↓	-	↓	↓	↓	-
998531	<1	<2	11/15/14	M.M	yes	-
998532(1-6)	↓	↓	↓	↓	↓	-
998533(1-8)	↓	↓	↓	↓	↓	-
998534(1-2)	↓	↓	↓	↓	↓	-
998535(1-5)	↓	↓	↓	↓	↓	-
998563	>1	<2	11/16/14	M.M	yes	-
998572	↓	↓	↓	↓	↓	-
998574	↓	↓	↓	↓	↓	-
998575	↓	↓	↓	↓	↓	-
998585	↓	↓	↓	↓	↓	-
998576(1-10)	<1	<2	11/16/14	↓	↓	-
998577	↓	↓	↓	↓	↓	-
998578(1-7)	↓	↓	↓	↓	↓	-
998602(1-2)	>1	<2	11/17/14	M.M	yes	-
998605	>1	<2	↓	↓	↓	-
998606(1-5)	↓	↓	↓	↓	↓	-
998607(1-4)	↓	↓	↓	↓	↓	-
998608(1-6)	↓	↓	↓	↓	↓	-
998610(1-3)	↓	↓	↓	↓	↓	-



Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 998411

Date Delivered: 11/8/11 Time: 21:30 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.5°C Yes No N/A
7. Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = see c.o.e Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other Water

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Shabunina

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

January 2, 2012

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-335 PROJECT, GROUNDWATER MONITORING, TLI NO.: 998577

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-335 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.


The samples were received and delivered with the chain of custody on November 15, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.


Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 998577

Date: January 2, 2012

Collected: November 15, 2011

Received: November 15, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov



Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 998577
Date Received: November 15, 2011

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
998577-001	SC-700B-WDR-335	E120.1	NONE	11/15/2011	10:00	EC	7120	umhos/cm	2.00
998577-001	SC-700B-WDR-335	E200.8	NONE-digested	11/15/2011	10:00	Chromium	ND	ug/L	1.0
998577-001	SC-700B-WDR-335	E200.8	NONE-digested	11/15/2011	10:00	Manganese	11.1	ug/L	1.0
998577-001	SC-700B-WDR-335	E218.6	LABFLT	11/15/2011	10:00	Chromium, hexavalent	ND	ug/L	1.0
998577-001	SC-700B-WDR-335	SM2130B	NONE	11/15/2011	10:00	Turbidity	ND	NTU	0.100
998577-001	SC-700B-WDR-335	SM2540C	NONE	11/15/2011	10:00	Total Dissolved Solids	4150	mg/L	125

ND: Non Detected (below reporting limit)
mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01ppm will have two (2) significant figures.
Result above or equal to 0.01ppm will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Avenue, Suite 800
Oakland, CA 94612

Laboratory No. 998577

Page 1 of 10

Printed 1/2/2012

Attention: Shawn Duffy

Project Name: PG & E Topock

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Samples Received on 11/15/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-335	998577-001	11/15/2011 10:00	Water

Specific Conductivity - EPA 120.1

Batch 11EC11H

11/16/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998577-001 Specific Conductivity	umhos/cm	11/16/2011	1.00	0.0950	2.00	7120

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 998440-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	4670	4660	0.214	0 - 10

Duplicate

Lab ID = 998577-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7110	7120	0.140	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710.	706	100.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	712	706	101.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	703	706	99.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	950.	997	95.3	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

008



Client: E2 Consulting Engineers, Inc.

Project Name: PG & E Topock

Page 3 of 10

Project Number: 424973.01.DM

Printed 1/2/2012

Chrome VI by EPA 218.6

Batch 11CrH11N

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998577-001 Chromium, Hexavalent	ug/L	11/16/2011 15:15	5.25	0.116	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 998252-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.239	0.200	119.	80 - 120

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.51	5.00	90.2	90 - 110

Matrix Spike

Lab ID = 998248-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	4.76	5.25(5.25)	90.8	90 - 110

Matrix Spike

Lab ID = 998248-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	4.74	5.25(5.25)	90.3	90 - 110

Matrix Spike

Lab ID = 998252-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	4.76	5.25(5.25)	90.7	90 - 110

Matrix Spike

Lab ID = 998252-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.77	6.21(5.25)	91.6	90 - 110

Matrix Spike

Lab ID = 998252-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.09	5.25(5.25)	97.0	90 - 110

Matrix Spike

Lab ID = 998252-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	4.89	5.25(5.25)	93.1	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG & E Topock
Project Number: 424973.01.DM

Page 4 of 10
Printed 1/2/2012

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Rows include Matrix Spike and MRCVS - Primary for Chromium, Hexavalent.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products.



Client: E2 Consulting Engineers, Inc.

Project Name: PG & E Topock

Page 6 of 10

Project Number: 424973.01.DM

Printed 1/2/2012

Metals by EPA 200.8, Total

Batch 122711B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998577-001 Chromium	ug/L	12/28/2011 15:33	5.00	0.110	1.0	ND
Manganese	ug/L	12/28/2011 15:33	5.00	0.285	1.0	11.1

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 998577-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	10.4	11.1	6.61	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.253	0.200	127.	70 - 130
Manganese	ug/L	1.00	0.235	0.200	117.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	105.	100.	105.	85 - 115
Manganese	ug/L	5.00	99.0	100.	99.0	85 - 115

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	104.	100.	104.	85 - 115
Manganese	ug/L	5.00	96.9	100.	96.9	85 - 115

Matrix Spike

Lab ID = 998577-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	109	100.(100.)	109	75 - 125
Manganese	ug/L	5.00	109.	111.(100.)	98.3	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.62	10.0	96.2	90 - 110
Manganese	ug/L	1.00	9.02	10.0	90.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG & E Topock

Page 9 of 10

Project Number: 424973.01.DM

Printed 1/2/2012

Total Dissolved Solids by SM 2540 C

Batch 11TDS11I

11/17/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998577-001 Total Dissolved Solids	mg/L	11/17/2011	1.00	0.400	125	4150

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	1.00	ND

Duplicate

Lab ID = 998604-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	509	504	0.987	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	500.	500.	100.	90 - 110

Turbidity by SM 2130 B

Batch 11TUC11G

11/16/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998577-001 Turbidity	NTU	11/16/2011	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 998577-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.03	8.00	100.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.94	8.00	99.2	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG & E Topock

Page 10 of 10

Project Number: 424973.01.DM

Printed 1/2/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 

Mona Nassimi

Manager, Analytical Services

E2 Corlon



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 11TDS111

Date Calculated: 11/21/11

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	105.2894	105.2897	105.2895	0.0002	No	0.0001	1.0	25.0	ND	1
998511-1	50	49.3592	49.4853	49.4853	0.0000	No	0.1261	2522.0	50.0	2522.0	1
998511-2	20	51.1879	51.264	51.264	0.0000	No	0.0761	3805.0	125.0	3805.0	1
998528-2	200	121.7035	121.7207	121.7207	0.0000	No	0.0172	86.0	12.5	86.0	1
998528-4	100	105.6280	105.6473	105.6471	0.0002	No	0.0191	191.0	25.0	191.0	1
998548	100	68.5192	68.5631	68.563	0.0001	No	0.0438	438.0	25.0	438.0	1
998553-1	100	76.5597	76.6154	76.6151	0.0003	No	0.0554	554.0	25.0	554.0	1
998553-2	100	68.5709	68.6274	68.6271	0.0003	No	0.0562	562.0	25.0	562.0	1
998577	20	51.4248	51.508	51.5078	0.0002	No	0.0830	4150.0	125.0	4150.0	1
998618	50	71.0949	71.1367	71.1367	0.0000	No	0.0418	836.0	50.0	836.0	1
998604	100	78.3850	78.4356	78.4354	0.0002	No	0.0504	504.0	25.0	504.0	1
998604D	100	73.6034	73.6545	73.6543	0.0002	No	0.0509	509.0	25.0	509.0	1
LCS	100	112.1846	112.235	112.2346	0.0004	No	0.0500	500.0	25.0	500.0	1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

C = mL of sample filtered.

RL= reporting limit.

ND = not detected (below the reporting limit)

Analyst Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 11TDS111

Date Calculated: 11/21/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
998511-1	3670	0.69	2385.5	1.06
998511-2	5100	0.75	3315	1.15
998528-2	168	0.51	109.2	0.79
998528-4	347	0.55	225.55	0.85
998548	744	0.59	483.6	0.91
998553-1	927	0.60	602.55	0.92
998553-2	917	0.61	596.05	0.94
998577	7110	0.58	4621.5	0.90
998618	1470	0.57	955.5	0.87
998604	855	0.59	555.75	0.91
998604D	855	0.60	555.75	0.92
LCS				

- B/Hills

998577

CHAIN OF CUSTODY RECORD

TRUESDAIL LABORATORIES, INC.
 14201 Franklin Avenue, Tustin, CA 92780-7008
 (714) 730-6239 FAX: (714) 730-6462
 www.truesdail.com



CoC Number
 TURNAROUND TIME 10 Days
 DATE 11/15/11 PAGE 1 OF 1

[IM3Plant-WDR-335]

COMPANY E2	PROJECT NAME PG&E Topock	PHONE (530) 229-3303	FAX (530) 339-3303	P.O. NUMBER 424973.01.DM	TEAM 1	SAMPLERS (SIGNATURE) <i>[Signature]</i>	DATE 11/15/11	TIME 10:00	DESCRIPTION Water	Cr6 (218.6) Lab Filtered	X	Total Metals (200.7) Cr, Mn	X	Specific Conductance (120.1)	X	TDS (SM2540C)	X	Turbidity (SM2130)	X	NUMBER OF CONTAINERS 3	COMMENTS DM = 6 (200.7)
SAMPLE I.D. SC-700B-WDR-335										TOTAL NUMBER OF CONTAINERS 3											

Rec'd 11/15/11
 998577

ALERT!!
Level III QC

For Sample Conditions
 See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS				
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL	WARM	YES	NO
<i>[Signature]</i>	<i>[Signature]</i>	OMI	11-15-11 1450	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUJSTODY SEALED	YES	NO	SPECIAL REQUIREMENTS:	
<i>[Signature]</i>	<i>[Signature]</i>	T-L-I	11-15-11 14150	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	30	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time					
<i>[Signature]</i>	<i>[Signature]</i>	T-L-I	11-15-11 21:30					
Signature (Received)	Printed Name	Company/ Agency	Date/ Time					
<i>[Signature]</i>	<i>[Signature]</i>	TCI	11/15/11 21:30					
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time					
<i>[Signature]</i>	<i>[Signature]</i>							
Signature (Received)	Printed Name	Company/ Agency	Date/ Time					
<i>[Signature]</i>	<i>[Signature]</i>							

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
998339(4-5)	>1	<2	11/07/4	M.M	yes	-
998342(1-3)	↓	↓	↓	↓	↓	-
998344(1-7)	↓	↓	↓	↓	↓	-
998358	↓	↓	↓	↓	↓	-
998359	↓	↓	↓	↓	↓	-
998360	↓	↓	↓	↓	↓	-
998361(1-11)	↓	↓	↓	↓	↓	-
998373(1-1)	<1	<2	11/08/4	M.M	yes	-
998374(16/12/4)	↓	↓	↓	↓	↓	-
998369(1-4)	>1	<2	↓	↓	↓	-
998377(1-4)	↓	↓	↓	↓	↓	-
998411	<1	<2	11/09/4	M.M	yes	-
998413(35/7)	↓	↓	↓	↓	↓	-
998412(1-13)	<1	>2	↓	↓	↓	NO
998399	>1	<2	10/03/4	V.M	yes	-
998397(1-3)	↓	↓	↓	↓	↓	-
998422	↓	↓	↓	↓	↓	-
998440(15)	<1	<2	10/11/11	M.M	yes	-
998441	↓	↓	↓	↓	↓	-
998442(1-6)	↓	↓	↓	↓	↓	-
998443(1-7)	↓	↓	↓	↓	↓	-
998485(1-2)	↓	↓	↓	↓	↓	-
998486(4-6,8)	↓	↓	↓	↓	↓	-
998488(1-6)	↓	↓	↓	↓	↓	-
998510(1-5)	<1	<2	11/14/4	M.M	yes	-
998511(1-2)	↓	↓	↓	↓	↓	-
998507(1-4)	>1	↓	↓	↓	↓	-
998482	Solid	-	11/14/1	M.M	TFLC	-
998483	↓	-	↓	↓	↓	-
998531	<1	<2	11/15/4	M.M	yes	-
998532(1-6)	↓	↓	↓	↓	↓	-
998533(1-8)	↓	↓	↓	↓	↓	-
998534(1-2)	↓	↓	↓	↓	↓	-
998535(1-5)	↓	↓	↓	↓	↓	-
998563	>1	<2	11/16/4	M.M	yes	-
998572	↓	↓	↓	↓	↓	-
998574	↓	↓	↓	↓	↓	-
998575	↓	↓	↓	↓	↓	-
998585	↓	↓	↓	↓	↓	-
998576(1-10)	<1	<2	11/16/1	↓	↓	-
998577	↓	↓	↓	↓	↓	-
998578(1-7)	↓	↓	↓	↓	↓	-
998602(1-2)	>1	<2	11/17/4	M.M	yes	-
998605	>1	<2	↓	↓	↓	-
998606(1-5)	↓	↓	↓	↓	↓	-
998607(1-4)	↓	↓	↓	↓	↓	-
998608(1-6)	↓	↓	↓	↓	↓	-
998610(1-3)	↓	↓	↓	↓	↓	-

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
11-11-11	998488-4	9.5	N/A	N/A	N/A	Gw
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
11-12-11	998511-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
11-15-11	998531	9.5	N/A	N/A	N/A	Gw
11-15-11	998532-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
11-15-11	998533-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
11-15-11	998534-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
11-15-11	998535-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
11-16-11	998577	7	5 mL	9.5	9:50 Am	Gw

al



ALERT !!
Level III QC

Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 998577

Date Delivered: 11/15/11 Time: 9:30 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4°C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = See COC Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: Alex

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

December 17, 2011

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-3364 PROJECT, GROUNDWATER MONITORING, TLI NO.: 998733

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-336 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.


The samples were received and delivered with the chain of custody on November 22, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

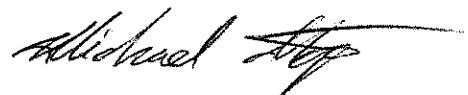
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

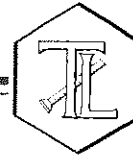
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Laboratory No.: 998733

Date: December 17, 2011

Collected: November 22, 2011

Received: November 22, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov



Client: E2 Consulting Engineers, Inc.
 155 Grand Ave. Suite 1000
 Oakland, CA 94612
Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 998733
Date Received: November 22, 2011

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
998733-001	SC-700B-WDR-336	E120.1	NONE	11/22/2011	10:30	EC	7030	umhos/cm	2.00
998733-001	SC-700B-WDR-336	E200.8	NONE-digested	11/22/2011	10:30	Chromium	ND	ug/L	1.0
998733-001	SC-700B-WDR-336	E200.8	NONE-digested	11/22/2011	10:30	Manganese	4.1	ug/L	2.0
998733-001	SC-700B-WDR-336	E218.6	LABFLT	11/22/2011	10:30	Chromium, hexavalent	ND	ug/L	1.0
998733-001	SC-700B-WDR-336	SM2130B	NONE	11/22/2011	10:30	Turbidity	ND	NTU	0.100
998733-001	SC-700B-WDR-336	SM2540C	NONE	11/22/2011	10:30	Total Dissolved Solids	4400	mg/L	125

ND: Non Detected (below reporting limit)
 mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:
 Results below 0.01ppm will have two (2) significant figures.
 Result above or equal to 0.01ppm will have three (3) significant figures.
 Quality Control data will always have three (3) significant figures.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800
Oakland, CA 94612

Laboratory No. 998733

Page 1 of 9

Printed 12/17/2011

Attention: Shawn Duffy

Project Name: PG & E Topock

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Samples Received on 11/22/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-336	998733-001	11/22/2011 10:30	Water

Specific Conductivity - EPA 120.1		Batch 11EC11J	11/23/2011			
Parameter	Unit	Analyzed	DF	MDL	RL	Result
998733-001 Specific Conductivity	umhos/cm	11/23/2011	1.00	0.0949	2.00	7030

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 998746-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	3220	3230	0.310	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	703	706	99.6	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710	706	100	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	962	997	96.5	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

008



Client: E2 Consulting Engineers, Inc.

Project Name: PG & E Topock

Page 2 of 9

Project Number: 424973.01.DM

Printed 12/17/2011

Chrome VI by EPA 218.6

Batch: 11CrH11V

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998733-001 Chromium, Hexavalent	ug/L	11/23/2011 13:14	5.25	0.136	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 998532-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	1.06	1.08	1.48	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.91	5.00	98.1	90 - 110

Matrix Spike

Lab ID = 998532-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.23	6.38(5.30)	97.1	90 - 110

Matrix Spike

Lab ID = 998532-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.02	7.18(5.30)	97.0	90 - 110

Matrix Spike

Lab ID = 998532-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.04	7.20(5.30)	97.0	90 - 110

Matrix Spike

Lab ID = 998532-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.46	6.59(5.30)	97.6	90 - 110

Matrix Spike

Lab ID = 998532-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.05	7.18(5.30)	97.5	90 - 110

Matrix Spike

Lab ID = 998532-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.83	1.86(1.06)	97.0	90 - 110

Matrix Spike

Lab ID = 998605-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.10	1.14(1.06)	95.8	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG & E Topock

Page 4 of 9

Project Number: 424973.01.DM

Printed 12/17/2011

Matrix Spike							Lab ID = 998733-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	5.25	5.14	5.25(5.25)	97.9	90 - 110	
Matrix Spike							Lab ID = 998733-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.06	1.01	1.06(1.06)	95.5	90 - 110	
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	4.93	5.00	98.5	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	9.87	10.0	98.7	95 - 105	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	9.78	10.0	97.8	95 - 105	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	9.70	10.0	97.0	95 - 105	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	9.74	10.0	97.4	95 - 105	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chromium, Hexavalent	ug/L	1.00	9.74	10.0	97.4	95 - 105	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG & E Topock

Page 5 of 9

Project Number: 424973.01.DM

Printed 12/17/2011

Metals by EPA 200.8, Total		Batch: 120311D				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
998733-001 Chromium	ug/L	12/04/2011 22:27	10.0	0.420	1.0	ND
Manganese	ug/L	12/04/2011 22:27	10.0	0.230	2.0	4.1

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 998733-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	10.0	ND	0.00	0	0 - 20
Manganese	ug/L	10.0	3.48	4.15	17.6	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.125	0.100	125.	70 - 130

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	0.261	0.200	130.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	10.0	98.2	100.	98.2	85 - 115
Manganese	ug/L	10.0	100.	100.	100.	85 - 115

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	10.0	100.	100.	100.	85 - 115
Manganese	ug/L	10.0	101.	100.	101.	85 - 115

Matrix Spike

Lab ID = 998733-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	89.6	100.(100.)	89.6	75 - 125
Manganese	ug/L	10.0	94.7	104.(100.)	90.6	75 - 125

Matrix Spike Duplicate

Lab ID = 998733-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	93.3	100.(100.)	93.3	75 - 125
Manganese	ug/L	10.0	90.6	104.(100.)	86.5	75 - 125

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG & E Topock

Page 8 of 9

Project Number: 424973.01.DM

Printed 12/17/2011

Total Dissolved Solids by SM 2540 C

Batch 11TDS11J

11/22/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998733-001 Total Dissolved Solids	mg/L	11/22/2011	1.00	0.400	125	4400

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	1.00	ND

Duplicate

Lab ID = 998733-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4200	4400	4.53	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	510.	500.	102	90 - 110

Turbidity by SM 2130 B

Batch 11TUC11M

11/23/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998733-001 Turbidity	NTU	11/23/2011	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 998733-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.10	8.00	101.	90 - 110

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.40	8.00	105	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG & E Topock

Page 9 of 9

Project Number: 424973.01.DM

Printed 12/17/2011

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 

Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 11TDS11J
Date Calculated: 11/28/11

Laboratory Number	Sample volume, ml	Initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	111.3978	111.3986	111.3985	0.0001	No	0.0007	7.0	25.0	ND	1
998638	480	111.3746	111.3746	111.3746	0.0000	No	0.0000	0.0	5.2	ND	1
998650	490	112.3625	112.3647	112.3645	0.0002	No	0.0020	4.1	5.1	ND	1
998669-2	200	112.3114	112.3319	112.3319	0.0000	No	0.0205	102.5	12.5	102.5	1
998669-4	100	108.1041	108.1291	108.1291	0.0000	No	0.0250	250.0	25.0	250.0	1
998680-1	100	75.7687	75.7971	75.7969	0.0002	No	0.0282	282.0	25.0	282.0	1
998680-2	100	74.7568	74.789	74.7886	0.0004	No	0.0318	318.0	25.0	318.0	1
998680-3	100	67.7800	67.8201	67.8198	0.0003	No	0.0398	398.0	25.0	398.0	1
998680-4	100	66.7201	66.7462	66.7458	0.0004	No	0.0257	257.0	25.0	257.0	1
998680-5	100	69.5747	69.6028	69.6024	0.0004	No	0.0277	277.0	25.0	277.0	1
998680-6	100	72.4692	72.4965	72.4961	0.0004	No	0.0269	269.0	25.0	269.0	1
998733D	20	72.9999	73.084	73.084	0.0000	No	0.0841	4205.0	125.0	4205.0	1
LCS	100	109.4415	109.4927	109.4925	0.0002	No	0.0510	510.0	25.0	510.0	1
998733	20	49.6999	49.7878	49.7878	0.0000	No	0.0879	4395.0	125.0	4395.0	1
998743	480	68.1053	68.1073	68.1069	0.0004	No	0.0016	3.3	5.2	ND	1
LCS D											1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

C = mL of sample filtered.

RL = reporting limit.
ND = not detected (below the reporting limit)

[Signature]
Analyst Printed Name

[Signature]
Analyst Signature

[Signature]
Reviewer Printed Name

[Signature]
Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 11TDS11J

Date Calculated: 11/28/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
998638	6.55	ND	4.2575	ND
998650	7.8	ND	5.07	ND
998669-2	188	0.55	122.2	0.84
998669-4	446	0.56	289.9	0.86
998680-1	467	0.60	303.55	0.93
998680-2	542	0.59	352.3	0.90
998680-3	627	0.63	407.55	0.98
998680-4	414	0.62	269.1	0.96
998680-5	457	0.61	297.05	0.93
998680-6	463	0.58	300.95	0.89
998733D	7030	0.60	4569.5	0.92
LCS				
998733	7030	0.63	4569.5	0.96
998743	1.13	ND	0.7345	ND



TRUESDAIL LABORATORIES, INC.
 14201 Franklin Avenue, Tustin, CA 92780-7008
 (714) 730-6239 FAX: (714) 730-6462
 www.truesdail.com

CHAIN OF CUSTODY RECORD

[IM3]Plant-WDR-336]

998733

COC Number

TURNAROUND TIME 10 Days

DATE 11/22/11 PAGE 1 OF 1

COMPANY <u>E2</u>	PROJECT NAME <u>PG&E Topock</u>	PHONE <u>(530) 229-3303</u>	FAX <u>(530) 339-3303</u>	P.O. NUMBER <u>424973.01.DM</u>	TEAM <u>1</u>	SAMPLERS (SIGNATURE) 	DATE <u>11/22/11</u>	TIME <u>10:30</u>	DESCRIPTION <u>Water</u>	Cr6 (218.6) Lab Filtered	X	Total Metals (200.7) Cr, Mn	X	Specific Conductance (120.1)	X	TDS (SM2540C)	X	Turbidity (SM2130)	X	NUMBER OF CONTAINERS	3	COMMENTS		
SC-700B-WDR-336																					DM=6 (200.7)	3	TOTAL NUMBER OF CONTAINERS	3

ALERT!!
Level III QC

**For Sample Conditions
 See Form Attached**

CHAIN OF CUSTODY SIGNATURE RECORD										SAMPLE CONDITIONS												
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	Signature (Received)	Printed Name	Company/ Agency	Date/ Time	Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	Signature (Received)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL	WARM	CUSTOMY SEALED	YES	NO	
	<u>Don Phelps</u>	Company/ Agency	<u>11-22-11 15:30</u>		<u>Robert Decker</u>	Company/ Agency	<u>11-22-11 15:30</u>		<u>Robert Decker</u>	Company/ Agency	<u>11-22-11 15:30</u>		<u>Robert Decker</u>	Company/ Agency	<u>11-22-11 15:30</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECIAL REQUIREMENTS:																						

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
11/18/11	998634-8	9.5	N/A	N/A	N/A	Gw
↓	↓ -9	↓	↓	↓	↓	↓
11/18/11	998635-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
11/19/11	998661-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
11/19/11	998662-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
11/21/11	998681-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
11/21/11	998682-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
11/22/11	998733	7	5 mL	9.5	9:30 AM	Gw

cb

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
998634(1-8)	<1	<2	11/18/11	M.M	yes	-
998635(1-6)	↓	↓	↓	↓	↓	-
998633(1-8)	↓	↓	↓	↓	↓	-
998597(1,4,5,7)	>1	↓	↓	↓	↓	-
998623	↓	↓	↓	↓	↓	-
998624	↓	↓	↓	↓	↓	-
998632	↓	↓	↓	↓	↓	-
998637	↓	↓	↓	↓	↓	-
998201(1-0)	platt	>2	11/10/11	Katia	NO	yes 11/13/11
998661(1-3)	<1	<2	11/21/11	ES	yes	-
998662(1-6)	↓	↓	↓	↓	↓	-
998221-3	↓	↓	↓	↓	↓	-
998222-1	↓	↓	↓	↓	↓	-
998241-2	↓	↓	↓	↓	↓	-
998251-6	↓	↓	↓	↓	↓	-
998252-1	↓	↓	↓	↓	↓	-
998681(1-7)	<1	<2	11/22/11	ES	yes	-
998682(1-2)	↓	↓	↓	↓	↓	-
998733	<1	<2	11/24/11	ES	yes	-
998741(1-8)	↓	<2	11/29/11	M.M	yes	-
998779	↓	↓	↓	↓	↓	-
998815	solid	-	11/30/11	M.M	yes	TTL C
998857	↓	-	↓	↓	↓	↓
998803(1-13)	<1	<2	12/01/11	M.M	yes	-
998804(1-10)	↓	↓	↓	↓	↓	-
998805(1-14)	↓	↓	↓	↓	↓	-
998828(1-5)	↓	↓	↓	↓	↓	-
998829(1-8)	↓	↓	↓	↓	↓	-
998830(1-13)	↓	↓	↓	↓	↓	-
998730(1-5)	<1	<2	11/23/11	ES	yes	-
998878	solid	-	12/05/11	M.M	yes	STLC/TTL C
998935(1-3)	<1	<2	12/06/11	M.M	yes	-
998936(1-3)	↓	↓	↓	↓	↓	-
998851(1-5)	<1	<2	12/08/11	M.M	yes	-
998852(1-10)	↓	↓	↓	↓	↓	-
998874	↓	↓	↓	↓	↓	-
998873(1-4)	↓	↓	↓	↓	↓	-
998975(1-9)	↓	↓	↓	↓	↓	-
998945(1-2)	↓	↓	↓	↓	↓	-
998946(1-2)	↓	↓	↓	↓	↓	-
998947(1-20)	↓	↓	↓	↓	↓	-
998892(1-4)	>1	<2	12/08/11	M.M	yes	-
998823	↓	↓	↓	↓	↓	-
998863	↓	↓	↓	↓	↓	-
998866	↓	↓	↓	↓	↓	-
998884	↓	↓	↓	↓	↓	-
998890	↓	↓	↓	↓	↓	-
998943	↓	↓	↓	↓	↓	-



Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 998733

Date Delivered: 11/22/11 Time: 2:30 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.3°C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = see c-2 Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other Water

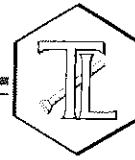
ALERT!!!
Level III QC

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: J. Stuebner

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

December 21, 2011

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-337 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 998802

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-337 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.


The samples were received and delivered with the chain of custody on November 29, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

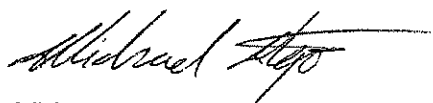
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

to - 
Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 998802

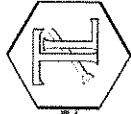
Date: December 21, 2011

Collected: November 29, 2011

Received: November 29, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov



Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 998802
Date Received: November 29, 2011

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
998802-001	SC-700B-WDR-337	E120.1	NONE	11/29/2011	10:00	EC	7120	umhos/cm	2.00
998802-001	SC-700B-WDR-337	E200.8	NONE-digested	11/29/2011	10:00	Chromium	ND	ug/L	1.0
998802-001	SC-700B-WDR-337	E200.8	NONE-digested	11/29/2011	10:00	Manganese	12.9	ug/L	1.0
998802-001	SC-700B-WDR-337	E218.6	LABFLT	11/29/2011	10:00	Chromium, hexavalent	ND	ug/L	1.0
998802-001	SC-700B-WDR-337	SM2130B	NONE	11/29/2011	10:00	Turbidity	ND	NTU	0.100
998802-001	SC-700B-WDR-337	SM2540C	NONE	11/29/2011	10:00	Total Dissolved Solids	4180	mg/L	125

ND: Non Detected (below reporting limit)
mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01ppm will have two (2) significant figures.
Result above or equal to 0.01ppm will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Laboratory No. 998802

Page 1 of 9

Printed 12/21/2011

Samples Received on 11/29/2011 8:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-337	998802-001	11/29/2011 10:00	Water

Specific Conductivity - EPA 120.1		Batch 11EC11L	11/30/2011			
Parameter	Unit	Analyzed	DF	MDL	RL	Result
998802-001 Specific Conductivity	umhos/cm	11/30/2011	1.00	0.0950	2.00	7120

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 998803-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	919	918	0.109	0 - 10

Duplicate

Lab ID = 998803-011

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	935	936	0.107	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	705	706	99.8	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	708	706	100.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	682	706	96.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	950.	997	95.3	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

008



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 3 of 9
Printed 12/21/2011

Chrome VI by EPA 218.6

Batch 11CrH11AD

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998802-001 Chromium, Hexavalent	ug/L	11/30/2011 13:54	5.25	0.136	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 998777-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	1.33	1.34	0.937	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent			0.227	0.00		

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00	98.1	90 - 110

Matrix Spike

Lab ID = 998777-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.80	6.81(5.30)	99.9	90 - 110

Matrix Spike

Lab ID = 998777-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.66	6.64(5.30)	100.	90 - 110

Matrix Spike

Lab ID = 998777-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.48	6.50(5.30)	99.6	90 - 110

Matrix Spike

Lab ID = 998777-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.83	6.85(5.30)	99.6	90 - 110

Matrix Spike

Lab ID = 998777-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.07	1.11(1.06)	96.0	90 - 110

Matrix Spike

Lab ID = 998777-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.30	6.34(5.30)	99.2	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 4 of 9
Printed 12/21/2011

Table with 7 columns: Matrix Spike, Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range, Lab ID. Contains 15 rows of data for Chromium, Hexavalent analysis.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 9

Project Number: 424973.01.DM

Printed 12/21/2011

Metals by EPA 200.8, Total

Batch 121611B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998802-001 Chromium	ug/L	12/16/2011 23:38	5.00	0.110	1.0	ND
Manganese	ug/L	12/16/2011 23:38	5.00	0.285	1.0	12.9

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.240	0.200	120.	70 - 130
Manganese	ug/L	1.00	0.245	0.200	122.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	102.	100.	102.	85 - 115
Manganese	ug/L	5.00	106.	100.	106.	85 - 115

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	103	100.	103	85 - 115
Manganese	ug/L	5.00	104.	100.	104.	85 - 115

Matrix Spike

Lab ID = 998802-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	102.	100.(100.)	102.	75 - 125
Manganese	ug/L	5.00	114.	113.(100.)	101	75 - 125

Matrix Spike Duplicate

Lab ID = 998802-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	97.3	100.(100.)	97.3	75 - 125
Manganese	ug/L	5.00	104.	113.(100.)	90.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.38	10.0	93.8	90 - 110
Manganese	ug/L	1.00	10.7	10.0	107.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.40	10.0	94.0	90 - 110
Manganese	ug/L	1.00	9.06	10.0	90.6	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 9

Project Number: 424973.01.DM

Printed 12/21/2011

Total Dissolved Solids by SM 2540 C

Batch 11TDS11L

11/30/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998802-001 Total Dissolved Solids	mg/L	11/30/2011	1.00	0.400	125	4180

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	1.00	ND

Duplicate

Lab ID = 998802-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4240	4180	1.54	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	501	500	100	90 - 110

Turbidity by SM 2130 B

Batch 11TUC110

11/30/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998802-001 Turbidity	NTU	11/30/2011	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 998802-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.06	8.00	101	90 - 110

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.10	8.00	101	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 9

Project Number: 424973.01.DM

Printed 12/21/2011

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 

Mona Nassimi

Manager, Analytical Services

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 11TDS11L

Date Calculated: 12/5/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
998766-2	198	0.55	128.7	0.85
998766-4	444	0.55	288.6	0.84
998802	7120	0.59	4628	0.90
998813-1	16.23	ND	10.5495	ND
998813-2	0.703	ND	0.45695	ND
998819-1	12.31	ND	8.0015	ND
998819-2	0.994	ND	0.6461	ND
998823	323	0.61	209.95	0.94
998825-1	3730	0.59	2424.5	0.91
998825-2	3940	0.60	2561	0.93
998802D	7120	0.60	4628	0.92
LCS				
998843	1195	0.62	776.75	0.95
998844	0.778	ND	0.5057	ND

998 802

TRUESDAIL LABORATORIES, INC.
 14201 Franklin Avenue, Tustin, CA 92780-7008
 (714) 730-6239 FAX: (714) 730-6462
 www.truesdail.com

CHAIN OF CUSTODY RECORD
 [IM3Plant-WDR-337]

COC Number _____
 TURNAROUND TIME 10 Days
 DATE 11/29/11 PAGE 1 OF 1

COMPANY <u>E2</u>	PROJECT NAME <u>PG&E Topock</u>	PHONE <u>(530) 229-3303</u>	FAX <u>(530) 339-3303</u>	ADDRESS <u>155 Grand Ave Ste 1000 Oakland, CA 94612</u>	P.O. NUMBER <u>424973.01.DM</u>	TEAM <u>1</u>	DATE <u>11/29/11</u>	TIME <u>10:00</u>	DESCRIPTION <u>Water</u>	SAMPLE I.D. <u>SC-700B-WDR-337</u>
SAMPLERS (SIGNATURE) _____										
CG (218.6) Lab Filtered <u>X</u>										
Total Metals (200.7) Cr. Mn <u>X</u>										
Specific Conductance (120.1) <u>X</u>										
TDS (SM2540C) <u>X</u>										
Turbidity (SM 2130) <u>X</u>										
NUMBER OF CONTAINERS										
3 <u>3</u>										
TOTAL NUMBER OF CONTAINERS										
3										
COMMENTS										
<u>DK = 6 (200.7)</u>										

ALERT!!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS					
Signature (Relinquished)	<u>[Signature]</u>	Printed Name	<u>Ben Hayes</u>	Company/ Agency	<u>OMI</u>	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/>	<u>3.4 °C</u>
Signature (Received)	<u>[Signature]</u>	Printed Name	<u>Ben Hayes</u>	Company/ Agency	<u>OMI</u>	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	
Signature (Relinquished)	<u>[Signature]</u>	Printed Name	<u>B. Dayag</u>	Company/ Agency	<u>TLI</u>	SPECIAL REQUIREMENTS:			
Signature (Received)	<u>[Signature]</u>	Printed Name	<u>Linda Shapiro</u>	Company/ Agency	<u>TLI</u>				
Signature (Relinquished)	<u>[Signature]</u>	Printed Name	<u>[Signature]</u>	Company/ Agency	<u>[Signature]</u>				
Signature (Received)	<u>[Signature]</u>	Printed Name	<u>[Signature]</u>	Company/ Agency	<u>[Signature]</u>				

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
11/29/11	998777-5	9.5	N/A	N/A	N/A	Gw
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
11/29/11	998778-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
11/30/11	998802	7	5 mL	9.5	8:40 Am	Gw
11/30/11	998803-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
↓	↓ -11	↓	↓	↓	↓	↓
11/30/11	998804-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓

al

Metals Samples Logbook

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
998901 (7-8)	<1	<2	12/09/11	M.M	Yes	-
998945 (1-2)	↓	↓	↓	↓	↓	-
998946 (1-2)	↓	↓	↓	↓	↓	-
998947 (1-5)	↓	↓	↓	↓	↓	-
998996 (1-6)	↓	↓	↓	↓	↓	-
999016 (1-6)	<1	<2	12/12/11	M.M	Yes	-
999052	>1	<2	12/04/11	M.M	Yes	-
999056	↓	↓	↓	↓	↓	-
999059 (1-5)	↓	↓	↓	↓	↓	-
999038 (1-2)	<1	<2	12/14/11	M.M	Yes	-
999039 (1-5)	↓	↓	14:00	↓	↓	-
999084 (1-6)	↓	↓	↓	↓	↓	-
999086 (1-6)	↓	↓	↓	↓	↓	-
999087 (1-2)	↓	↓	↓	↓	↓	-
999088	↓	↓	↓	↓	↓	-
999089 (1-5)	↓	↓	↓	↓	↓	-
999091 (1-2)	<1	<2	12/15/11	M.M	Yes	-
999090 (1-9)	↓	↓	↓	↓	↓	-
999092 (1-16)	↓	↓	↓	↓	↓	-
999117 (1-2)	↓	↓	↓	↓	↓	-
999118	↓	↓	↓	↓	↓	-
999121 (1-4)	↓	↓	↓	↓	↓	-
999154 (1-9)	<1	<2	12/16/11	M.M	Yes	-
999155 (1-2)	↓	↓	↓	↓	↓	-
999156	↓	↓	↓	↓	↓	-
999047-1	>1	<2	12/16/11	M.M	Yes	-
999067 (1-2)	↓	↓	↓	↓	↓	-
999124	↓	↓	↓	↓	↓	-
999125 (1-4)	↓	↓	↓	↓	↓	-
999148	↓	↓	↓	↓	↓	-
999149	↓	↓	↓	↓	↓	-
999151	↓	↓	↓	↓	↓	-
999167	↓	↓	↓	↓	↓	-
999178 (1-8)	<1	<2	12/19/11	M.M	Yes	-
999179 (1-8)	↓	↓	↓	↓	↓	-
999180 (1-26)	↓	↓	↓	↓	↓	-
999028 (1-2)	Solid	-	12/19/11	M.M	Yes	TTC
999175 (1-2)	↓	↓	↓	↓	↓	↓
999191	↓	↓	↓	↓	↓	↓
998731 (1-2)	<1	<2	11/23/11	M.M	Yes	-
999227	<1	<2	12/21/11	M.M	Yes	-
998732 (1-13)	<1	<2	11/30/11	M.M	Yes	-
998802	<1	<2	11/30/11	M.M	Yes	-



Sample Integrity & Analysis Discrepancy Form

Client: EL

Lab # 998802

Date Delivered: 11/29/11 Time: 10:30 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 3.7 °C Yes No N/A
7. Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = see c.o.c. Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other Water

ALERT!!
Level III QC

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: D. Shabunina

Analytical Bench Log Book

WDR pH Results

If the on site laboratory pH result for T-700 tank is less than pH 6.6 or greater than pH 8.3 the Injection well should be shut down until the problem is fixed.

Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
SC-700B	11-1-11	1800	11-1-11	1904	METER #1	11-1-11	3:30	-54.8	Paul Phelps	7.1

Notes:

SC-100B	11-1-11	1900	11-1-11	1907	METER #1	11-1-11	3:30	-54.8	Paul Phelps	7.2
---------	---------	------	---------	------	----------	---------	------	-------	-------------	-----

Notes:

SC-700B	11-8-11	1100	11-8-11	1104	METER #1	11-8-11	1:00	-55.2	Paul Phelps	7.0
---------	---------	------	---------	------	----------	---------	------	-------	-------------	-----

Notes:

SC-700B	11-15-11	1000	11-15-11	1105	METER #1	11-15-11	1:10	-57.6	Paul Phelps	7.1
---------	----------	------	----------	------	----------	----------	------	-------	-------------	-----

Notes:

SC-700B	11-22-11	10:30	11-22-11	1035	METER #1	11-22-11	1:00	-56.8	Paul Phelps	7.0
---------	----------	-------	----------	------	----------	----------	------	-------	-------------	-----

Notes:

SC-700B	11-29-11	10:00	11-29-11	10:05	METER #1	11-29-11	1:00	-56.7	Paul Phelps	7.0
---------	----------	-------	----------	-------	----------	----------	------	-------	-------------	-----

Notes:

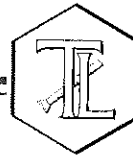
--	--	--	--	--	--	--	--	--	--	--

Notes:

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

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

January 6, 2012

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-188, GROUNDWATER MONITORING PROJECT, TLI NO.: 998945

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-189 groundwater-monitoring project for Total Dissolved and Hexavalent Chromium, Total Dissolved Solids, and Specific Conductivity. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on December 6, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Per Mr. Shawn Duffy's request, the pH analysis was cancelled.

Samples for Total Dissolved Chromium were analyzed by method EPA 200.8 with the approval of Mr. Shawn Duffy of CH2M Hill.

Due to the discrepancy between the Total Dissolved Chromium (13.4 ug/L) and Hexavalent Chromium (10.9 ug/L) results for sample PE-01-189, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers were digested and analyzed for Total Dissolved Chromium. The results were 10.8 and 12.0 ug/L, respectively. The original digestate was re-analyzed for confirmation and yielded a result of 11.5 ug/L. The result from the re-digested Total Dissolved Chromium was reported as it more closely matched the Hexavalent Chromium result.

No other violations or non-conformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

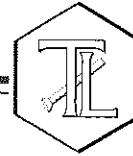
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
for
Mona Nassimi
Manager, Analytical Services

Michael Ngo
for
Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwater Samples

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 998945

Date: January 6, 2012

Collected: December 6, 2011

Received: December 6, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 200.8	Total Dissolved Chromium	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov
SM 3500-CrB	Hexavalent Chromium	Jenny Tankunakorn

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1937

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 998945
Date Received: December 6, 2011

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
998945-001	PE-01-189	E120.1	NONE	12/6/2011	14:00	EC	4900	umhos/cm	2.00
998945-001	PE-01-189	E200.8	LABFLT-digested	12/6/2011	14:00	Chromium	10.8	ug/L	1.0
998945-001	PE-01-189	E218.6	LABFLT	12/6/2011	14:00	Chromium, hexavalent	10.9	ug/L	0.20
998945-001	PE-01-189	SM2540C	NONE	12/6/2011	14:00	Total Dissolved Solids	2930	mg/L	125
998945-002	TW-03D-189	E120.1	NONE	12/6/2011	14:00	EC	8430	umhos/cm	2.00
998945-002	TW-03D-189	E200.8	LABFLT-digested	12/6/2011	14:00	Chromium	1150	ug/L	1.0
998945-002	TW-03D-189	SM2540C	NONE	12/6/2011	14:00	Total Dissolved Solids	4650	mg/L	250
998945-002	TW-03D-189	SM3500-CrB	LABFLT	12/6/2011	14:00	Chromium, hexavalent	1080	ug/L	100

ND: Non Detected (below reporting limit)

Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01 will have two (2) significant figures.
Result above or equal to 0.01 will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Laboratory No. 998945

Page 1 of 10

Printed 1/6/2012

Samples Received on 12/6/2011 11:30:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-189	998945-001	12/06/2011 14:00	Water
TW-03D-189	998945-002	12/06/2011 14:00	Water

Specific Conductivity - EPA 120.1		Batch 12EC11C	12/8/2011			
Parameter	Unit	Analyzed	DF	MDL	RL	Result
998945-001 Specific Conductivity	umhos/cm	12/08/2011	1.00	0.0950	2.00	4900
998945-002 Specific Conductivity	umhos/cm	12/08/2011	1.00	0.0950	2.00	8430

Method Blank

Parameter	Unit	DF	Result			
Specific Conductivity	umhos	1.00	ND			
Duplicate				Lab ID = 998945-002		

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	8420	8430	0.119	0 - 10
Duplicate				Lab ID = 998946-002		

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7730	7750	0.258	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	695	706	98.4	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	694	706	98.3	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	697	706	98.7	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

009



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 10

Project Number: 424973.01.DM

Printed 1/6/2012

Chrome VI by EPA 218.6

Batch 12CrH11G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998945-001 Chromium, Hexavalent	ug/L	12/08/2011 06:01	1.05	0.0260	0.20	10.9

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 998830-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	0.159	0.170	6.50	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.235	0.200	118.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.89	5.00	97.9	90 - 110

Matrix Spike

Lab ID = 998830-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.23(1.06)	99.6	90 - 110

Matrix Spike

Lab ID = 998830-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.24(1.06)	98.4	90 - 110

Matrix Spike

Lab ID = 998830-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.24(1.06)	97.9	90 - 110

Matrix Spike

Lab ID = 998830-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.24	1.25(1.06)	99.0	90 - 110

Matrix Spike

Lab ID = 998830-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.16	1.25(1.06)	91.7	90 - 110

Matrix Spike

Lab ID = 998830-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.25	1.25(1.06)	99.7	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 10

Project Number: 424973.01.DM

Printed 1/6/2012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.20	1.25(1.06)	95.1	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.25	1.25(1.06)	100.	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.23	1.26(1.06)	97.4	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	9.14	9.24(5.30)	98.1	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	8.27	8.38(5.30)	97.9	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.17	1.22(1.06)	95.5	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	7.00	7.04(5.30)	99.2	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	7.93	7.97(5.30)	99.3	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	2.00	2.01(1.06)	99.3	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	27.0	26.8(15.9)	101.	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	5.25	5.28	5.46(5.25)	96.4	90 - 110
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.16	1.18(1.06)	98.4	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 6 of 10
Printed 1/6/2012

Chromium, Hexavalent by SM 3500-Cr B

Batch 12CrH11A

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 998945-002 Chromium, Hexavalent, ug/L, 12/12/2011 16:18, 10.0, 15.0, 100., 1080

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Chromium, Hexavalent, ug/L, 1.00, ND

Duplicate

Lab ID = 998945-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 10.0, 1100, 1080, 2.33, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 102., 100., 102., 90 - 110

Matrix Spike

Lab ID = 998945-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 10.0, 2140, 2080(1000), 106., 85 - 115

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 62.7, 60.0, 104., 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 64.0, 60.0, 107., 90 - 110

Total Dissolved Solids by SM 2540 C

Batch 12TDS11A

12/7/2011

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 998945-001 Total Dissolved Solids, mg/L, 12/07/2011, 1.00, 0.400, 125, 2930

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Total Dissolved Solids, mg/L, 1.00, ND

Duplicate

Lab ID = 998901-008

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Total Dissolved Solids, mg/L, 1.00, 1100, 1090, 1.09, 0 - 5

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Total Dissolved Solids, mg/L, 1.00, 494, 500., 98.8, 90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 7 of 10
Printed 1/6/2012

Metals by EPA 200.8, Dissolved

Batch 123011C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998945-002 Chromium	ug/L	12/31/2011 19:38	5.00	0.110	1.0	1150

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 998731-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	2.20	2.20	0.228	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.232	0.200	116.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	109.	100.	109.	85 - 115

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	106.	100.	106.	85 - 115

Matrix Spike

Lab ID = 998731-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	105.	102.(100.)	102.	75 - 125

Matrix Spike Duplicate

Lab ID = 998731-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	105.	102.(100.)	102.	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.5	10.0	105.	90 - 110

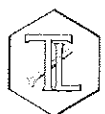
MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.88	10.0	98.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.94	10.0	99.4	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 10

Project Number: 424973.01.DM

Printed 1/6/2012

Metals by EPA 200.8, Dissolved

Batch 010512A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998945-001 Chromium	ug/L	01/05/2012 21:52	5.00	0.110	1.0	10.8

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 998945-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	10.9	10.8	0.554	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.197	0.200	98.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	104.	100.	104.	85 - 115

Matrix Spike

Lab ID = 998945-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	114.	111.(100.)	104.	75 - 125

Matrix Spike Duplicate

Lab ID = 998945-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	117.	111.(100.)	106.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.63	10.0	96.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.18	10.0	91.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.66	10.0	96.6	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 10 of 10

Project Number: 424973.01.DM

Printed 1/6/2012

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.77	10.0	97.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.91	10.0	99.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.84	10.0	98.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.36	10.0	93.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.81	10.0	98.1	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.67	10.0	96.7	80 - 120

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 12TDS11A
Date Calculated: 12/9/11

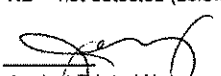
Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	92.0966	92.0970	92.0969	0.0001	No	0.0003	3.0	25.0	ND	1
998868-8	100	67.2146	67.2383	67.2379	0.0004	No	0.0233	233.0	25.0	233.0	1
998869	10	50.3832	50.4314	50.431	0.0004	No	0.0478	4780.0	250.0	4780.0	1
998895-2	100	71.0973	71.1093	71.1093	0.0000	No	0.0120	120.0	25.0	120.0	1
998895-4	100	70.8686	70.9232	70.923	0.0002	No	0.0245	245.0	25.0	245.0	1
998901-1	50	50.4300	50.4596	50.4595	0.0001	No	0.0295	590.0	50.0	590.0	1
998901-2	50	51.0004	51.0295	51.0291	0.0004	No	0.0287	574.0	50.0	574.0	1
998901-3	50	50.1293	50.228	50.228	0.0000	No	0.0987	1974.0	50.0	1974.0	1
998901-4	100	74.7529	74.8008	74.801	-0.0002	No	0.0481	481.0	25.0	481.0	1
998901-5	20	75.3680	75.3798	75.3798	0.0000	No	0.0718	3590.0	125.0	3590.0	1
998901-6	50	51.2523	51.3132	51.313	0.0002	No	0.0607	1214.0	50.0	1214.0	1
998901-8D	50	69.2150	69.2704	69.2701	0.0003	No	0.0551	1102.0	50.0	1102.0	1
LCS	100	68.1683	68.2179	68.2177	0.0002	No	0.0494	494.0	25.0	494.0	1
998901-7	50	72.8250	72.9265	72.9265	0.0000	No	0.1015	2030.0	50.0	2030.0	1
998901-8	50	68.1412	68.1959	68.1957	0.0002	No	0.0545	1090.0	50.0	1090.0	1
998910-10	100	74.6864	74.7434	74.7433	0.0001	No	0.0569	569.0	25.0	569.0	1
998919-16	50	47.9092	47.9394	47.939	0.0004	No	0.0298	596.0	50.0	596.0	1
998929-1	50	69.7508	69.8017	69.8017	0.0000	No	0.0509	1018.0	50.0	1018.0	1
998929-2	100	65.6277	65.6823	65.6822	0.0001	No	0.0545	545.0	25.0	545.0	1
998929-3	100	68.8840	68.9411	68.9409	0.0002	No	0.0569	569.0	25.0	569.0	1
998929-4	100	66.8110	66.8627	66.8623	0.0004	No	0.0513	513.0	25.0	513.0	1
998945-1	20	49.5316	49.5904	49.5902	0.0002	No	0.0586	2930.0	125.0	2930.0	1
998945-2	10	48.1842	48.2308	48.2307	0.0001	No	0.0465	4650.0	250.0	4650.0	1
LCS D											1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

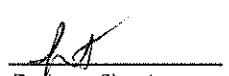
- Where: A = weight of dish + residue in grams.
- B = weight of dish in grams.
- C = mL of sample filtered.

RL= reporting limit.
ND = not detected (below the reporting limit)


Analyst Printed Name


Analyst Signature


Reviewer Printed Name


Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 12TDS11A

Date Calculated: 12/9/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
998868-8	420	0.55	273	0.85
998869	7960	0.60	5174	0.92
998895-2	217	0.55	141.05	0.85
998895-4	446	0.55	289.9	0.85
998901-1	1032	0.57	670.8	0.88
998901-2	1032	0.56	670.8	0.86
998901-3	3050	0.65	1982.5	1.00
998901-4	763	0.63	495.95	0.97
998901-5	4840	0.74	3146	1.14
998901-6	1790	0.68	1163.5	1.04
998901-8D	1640	0.67	1066	1.03
LCS				
998901-7	2910	0.70	1891.5	1.07
998901-8	1640	0.66	1066	1.02
998918-10	919	0.62	597.35	0.95
998919-16	1069	0.56	694.85	0.86
998929-1	1808	0.56	1175.2	0.87
998929-2	947	0.58	615.55	0.89
998929-3	933	0.61	606.45	0.94
998929-4	830	0.62	539.5	0.95
998945-1	4920	0.60	3198	0.92
998945-2	8500	0.55	5525	0.84



TRUESDAIL LABORATORIES, INC.
 14201 Franklin Avenue, Tustin, CA 92780-7008
 (714) 730-6239 FAX: (714) 730-6462
 www.truesdail.com

CHAIN OF CUSTODY RECORD

[IM3Plant-EW-187]

COC Number

TURNAROUND TIME 10 Days

DATE 10/04/11

PAGE 1 OF 1

998945

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Dissolved Cr (200.7) Lab filtered				Cr(VI) (3500-Cr B)			PH (150.0) EC (120.1)			TDS (160.1)		Cr(VI) (218.6)		COMMENTS	
				X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
PE-01-187 189	10/04/11	1400	Ground water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4	J. P. ... (200.7)
TW-03D-187 189	10/04/11	1400	Ground water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4	
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> ALERT!! per Sample Conditions Level III QC See Form Attached </div>																			
																	TOTAL NUMBER OF CONTAINERS		

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time
<i>[Signature]</i>	Paul ...	OMI	12-6-11 15:00
Signature (Received)	Rafael Davila	Company/ Agency	12-6-11 15:00
Signature (Relinquished)	Rafael Davila	Company/ Agency	12-6-11 23:30
Signature (Received)	[Signature]	Company/ Agency	12/6/11 23:30
Signature (Relinquished)	[Signature]	Company/ Agency	
Signature (Received)	[Signature]	Company/ Agency	

SAMPLE CONDITIONS

RECEIVED COOL WARM YES NO

SPECIAL REQUIREMENTS:

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
12/2/11	998873-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
12/6/2011	998900	7	5 mL	9.5	9:30 Am	GW
12/6/2011	998901-7	9.5	N/A	N/A	N/A	GW
	-8					
	-9					
12/7/2011	998935-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
12/7/2011	998937	9.5	N/A	N/A	N/A	GW
12/7/2011	998976-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
12/7/2011	998945	7	5 mL	9.5	10:15 Am	GW
12/7/2011	998946-1	7	5 mL	9.5	10:30 Am	GW
	-2				10:35 Am	GW
12/7/2011	998947-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					

Metals Samples Logbook

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
998901 (7-8)	<1	<2	12/09/11	M.M	Yes	-
998945 (1-2)	↓	↓	↓	↓	↓	-
998946 (1-2)	↓	↓	↓	↓	↓	-
998947 (1-5/9)	↓	↓	↓	↓	↓	-
998996 (1-6)	↓	↓	↓	↓	↓	-
999016 (1-6)	<1	<2	12/12/11	M.M	Yes	-
999052	>1	<2	12/14/11	M.M	Yes	-
999056	↓	↓	↓	-	-	-
999059 (1-2)	↓	↓	↓	-	-	-
999038 (1-2)	<1	<2	12/14/11	M.M	Yes	-
999039 (12-5)	↓	↓	12:00	↓	↓	-
999084 (1-6)	↓	↓	↓	↓	↓	-
999086 (1-6)	↓	↓	↓	↓	↓	-
999087 (1-2)	↓	↓	↓	↓	↓	-
999088	↓	↓	↓	↓	↓	-
999089 (1-5)	↓	↓	↓	↓	↓	-
999091 (1-2)	<1	<2	12/15/11	M.M	Yes	-
999090 (1-9)	↓	↓	↓	↓	↓	-
999092 (1-16)	↓	↓	↓	↓	↓	-
999117 (1-2)	↓	↓	↓	↓	↓	-
999118	↓	↓	↓	↓	↓	-
999121 (1-4)	↓	↓	↓	↓	↓	-
999154 (1-9)	<1	<2	12/16/11	M.M	Yes	-
999155 (1-2)	↓	↓	↓	↓	↓	-
999156	↓	↓	↓	↓	↓	-
999047-1	>1	<2	12/16/11	M.M	Yes	-
999067 (1-2)	↓	↓	↓	↓	↓	-
999124	↓	↓	↓	↓	↓	-
999125 (1-4)	↓	↓	↓	↓	↓	-
999148	↓	↓	↓	↓	↓	-
999149	↓	↓	↓	↓	↓	-
999151	↓	↓	↓	↓	↓	-
999167	↓	↓	↓	↓	↓	-



Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 998945

Date Delivered: 12/6/11 Time: 23:30 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 3.5°C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = see c.c.c. Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other _____

**ALERT
Level III**

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: J. Scarborough

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

January 10, 2012

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-338 PROJECT, GROUNDWATER
MONITORING,
TLI NO.: 998946

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-338 project groundwater monitoring. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on December 6, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

No violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

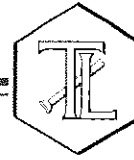
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Mona Nassimi
Manager, Analytical Services

Michael Ngo
Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwaters

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Laboratory No.: 998946

Date: January 10, 2012

Collected: December 6, 2011

Received: December 6, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2320B	Total Alkalinity	Kim Luck
SM 4500-Si D	Soluble Silica	Jenny Tankunakorn
SM 4500-P B,E	Total Phosphorus	Jenny Tankunakorn
SM 5310C	Total Organic Carbon	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 300.0	Anions	Giawad Ghenniwa
SM 4500-NH3 D	Ammonia	Maria Mangarova
SM 4500-NO2 B	Nitrite as N	Jenny Tankunakorn
EPA 200.7	Metals by ICP	Ethel Suico
EPA 200.8	Metals by ICP/MS	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Laboratory No.: 998946

Date Received: December 6, 2011

Attention: Shawn Duffy

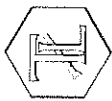
Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
998946-001	SC-700B-WDR-338	E120.1	NONE	12/6/2011	13:30	EC	7130	umhos/cm	2.00
998946-001	SC-700B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Aluminum	ND	ug/L	50.0
998946-001	SC-700B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	BORON	1060	ug/L	200
998946-001	SC-700B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Iron	ND	ug/L	20.0
998946-001	SC-700B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Nickel	ND	ug/L	10.0
998946-001	SC-700B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Zinc	ND	ug/L	10.0
998946-001	SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Antimony	ND	ug/L	10.0
998946-001	SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Arsenic	ND	ug/L	1.0
998946-001	SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Barium	15.4	ug/L	10.0
998946-001	SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Chromium	1.1	ug/L	1.0
998946-001	SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Copper	ND	ug/L	5.0
998946-001	SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Lead	ND	ug/L	10.0
998946-001	SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Manganese	9.9	ug/L	1.0
998946-001	SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Molybdenum	18.1	ug/L	10.0
998946-001	SC-700B-WDR-338	E218.6	LABFLT	12/6/2011	13:30	Chromium, hexavalent	ND	ug/L	1.0
998946-001	SC-700B-WDR-338	E300	NONE	12/6/2011	13:30	Fluoride	1.32	mg/L	0.500
998946-001	SC-700B-WDR-338	E300	NONE	12/6/2011	13:30	Nitrate as N	4.74	mg/L	1.00
998946-001	SC-700B-WDR-338	E300	NONE	12/6/2011	13:30	Sulfate	477	mg/L	25.0
998946-001	SC-700B-WDR-338	SM2130B	NONE	12/6/2011	13:30	Turbidity	ND	NTU	0.100
998946-001	SC-700B-WDR-338	SM2540C	NONE	12/6/2011	13:30	Total Dissolved Solids	5120	mg/L	250
998946-001	SC-700B-WDR-338	SM4500NH3D	NONE	12/6/2011	13:30	Ammonia-N	ND	mg/L	0.500
998946-001	SC-700B-WDR-338	SM4500NO2B	NONE	12/6/2011	13:30	Nitrite as N	ND	mg/L	0.0050

005

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
998946-002	SC-100B-WDR-338	E120.1	NONE	12/6/2011	13:30	EC	7750	umhos/cm	2.00
998946-002	SC-100B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Aluminum	ND	ug/L	50.0
998946-002	SC-100B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	BORON	1080	ug/L	200
998946-002	SC-100B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Iron	ND	ug/L	20.0
998946-002	SC-100B-WDR-338	E200.7	LABFLT-digested	12/6/2011	13:30	Iron	ND	ug/L	20.0
998946-002	SC-100B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Nickel	ND	ug/L	10.0
998946-002	SC-100B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Zinc	ND	ug/L	10.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Antimony	ND	ug/L	10.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Arsenic	3.7	ug/L	1.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Barium	28.0	ug/L	10.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Chromium	920	ug/L	1.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Copper	ND	ug/L	5.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Lead	ND	ug/L	10.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Manganese	7.2	ug/L	1.0
998946-002	SC-100B-WDR-338	E200.8	LABFLT-digested	12/6/2011	13:30	Manganese	6.1	ug/L	5.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Molybdenum	20.0	ug/L	10.0
998946-002	SC-100B-WDR-338	E218.6	LABFLT	12/6/2011	13:30	Chromium, hexavalent	910	ug/L	21.0
998946-002	SC-100B-WDR-338	E300	NONE	12/6/2011	13:30	Fluoride	1.50	mg/L	0.500
998946-002	SC-100B-WDR-338	E300	NONE	12/6/2011	13:30	Nitrate as N	3.35	mg/L	1.00
998946-002	SC-100B-WDR-338	E300	NONE	12/6/2011	13:30	Sulfate	528	mg/L	25.0
998946-002	SC-100B-WDR-338	SM2130B	NONE	12/6/2011	13:30	Turbidity	0.178	NTU	0.100
998946-002	SC-100B-WDR-338	SM2320B	NONE	12/6/2011	13:30	Alkalinity	135	mg/L	5.00
998946-002	SC-100B-WDR-338	SM2320B	NONE	12/6/2011	13:30	Bicarbonate	135	mg/L	5.00
998946-002	SC-100B-WDR-338	SM2320B	NONE	12/6/2011	13:30	Carbonate	ND	mg/L	5.00
998946-002	SC-100B-WDR-338	SM2540C	NONE	12/6/2011	13:30	Total Dissolved Solids	4390	mg/L	250
998946-002	SC-100B-WDR-338	SM4500NH3D	NONE	12/6/2011	13:30	Ammonia-N	ND	mg/L	0.500
998946-002	SC-100B-WDR-338	SM4500NO2B	NONE	12/6/2011	13:30	Nitrite as N	ND	mg/L	0.0050
998946-002	SC-100B-WDR-338	SM4500-PB_E	NONE	12/6/2011	13:30	Total Phosphorous-P	ND	mg/L	0.0200
998946-002	SC-100B-WDR-338	SM4500S1	NONE	12/6/2011	13:30	Soluble Silica	19.1	mg/L	1.00
998946-002	SC-100B-WDR-338	SM5310C	NONE	12/6/2011	13:30	Total Organic Carbon	0.321	mg/L	0.300

ND: Non Detected (below reporting limit)
mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01ppm will have two (2) significant figures.
Result above or equal to 0.01ppm will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Laboratory No. 998946

Page 1 of 37

Printed 1/10/2012

Samples Received on 12/6/2011 11:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-338	998946-001	12/06/2011 13:30	Water
SC-100B-WDR-338	998946-002	12/06/2011 13:30	Water

Anions By I.C. - EPA 300.0

Batch 12AN11G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998946-001 Nitrate as Nitrogen	mg/L	12/07/2011 10:50	5.00	0.135	1.00	4.74
998946-002 Nitrate as Nitrogen	mg/L	12/07/2011 11:02	5.00	0.135	1.00	3.35

Method Blank

Parameter	Unit	DF	Result
Nitrate as Nitrogen	mg/L	1.00	ND

Duplicate

Lab ID = 998938-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	5.00	15.1	13.1	14.5	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	3.95	4.00	98.7	90 - 110

Matrix Spike

Lab ID = 998938-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	5.00	34.5	33.1(20.0)	107.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	3.96	4.00	98.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.94	3.00	98.2	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

014



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 37

Project Number: 424973.01.DM

Printed 1/10/2012

Anions By I.C. - EPA 300.0

Batch 12AN11G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998946-001 Sulfate	mg/L	12/07/2011 12:16	50.0	5.70	25.0	477.
998946-002 Sulfate	mg/L	12/07/2011 12:29	50.0	5.70	25.0	528.

Method Blank

Parameter	Unit	DF	Result
Chloride	mg/L	1.00	ND
Sulfate	mg/L	1.00	ND

Duplicate

Lab ID = 998901-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chloride	mg/L	25.0	66.9	67.0	0.0806	0 - 20
Sulfate	mg/L	25.0	100.	99.7	0.428	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	4.01	4.00	100.	90 - 110
Sulfate	mg/L	1.00	19.8	20.0	99.3	90 - 110

Matrix Spike

Lab ID = 998901-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chloride	mg/L	25.0	174.	167(100.)	108.	85 - 115
Sulfate	mg/L	25.0	356.	350.(250.)	103.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	4.02	4.00	100.	90 - 110
Sulfate	mg/L	1.00	19.9	20.0	99.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.90	3.00	96.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.89	3.00	96.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.93	3.00	97.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.95	3.00	98.5	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 37

Project Number: 424973.01.DM

Printed 1/10/2012

Anions By I.C. - EPA 300.0

Batch 12AN11G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998946-001 Fluoride	mg/L	12/07/2011 10:50	5.00	0.155	0.500	1.32
998946-002 Fluoride	mg/L	12/07/2011 11:02	5.00	0.155	0.500	1.50

Method Blank

Parameter	Unit	DF	Result
Fluoride	mg/L	1.00	ND

Duplicate

Lab ID = 998894-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	1.00	0.712	0.709	0.422	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.07	4.00	102.	90 - 110

Matrix Spike

Lab ID = 998894-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	1.00	2.87	2.71(2.00)	108.	85 - 115

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.07	4.00	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.10	3.00	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.10	3.00	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.06	3.00	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.06	3.00	102	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 5 of 37
Printed 1/10/2012

Nitrite SM 4500-NO2 B

Batch 12NO211B

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include 998946-001 and 998946-002 Nitrite as Nitrogen.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row: Nitrite as Nitrogen, mg/L, 1.00, ND.

Duplicate

Lab ID = 998919-006

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Nitrite as Nitrogen, mg/L, 1.00, ND, 0.00, 0, 0 - 20.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Nitrite as Nitrogen, mg/L, 1.00, 0.0412, 0.0400, 103, 90 - 110.

Matrix Spike

Lab ID = 998946-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Nitrite as Nitrogen, mg/L, 1.00, 0.0209, 0.0200(0.0200), 104., 85 - 115.

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Nitrite as Nitrogen, mg/L, 1.00, 0.0213, 0.0200, 106., 90 - 110.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Nitrite as Nitrogen, mg/L, 1.00, 0.0204, 0.0200, 102, 90 - 110.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Nitrite as Nitrogen, mg/L, 1.00, 0.0204, 0.0200, 102, 90 - 110.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 6 of 37
Printed 1/10/2012

Alkalinity by SM 2320B

Batch 12ALK11A

12/7/2011

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include Alkalinity as CaCO3, Bicarbonate (Calculated), and Carbonate (Calculated).

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row: Alkalinity as CaCO3, mg/L, 1.00, ND.

Duplicate

Lab ID = 998919-020

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Alkalinity as CaCO3, mg/L, 1.00, 84.0, 85.0, 1.18, 0 - 20.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Alkalinity as CaCO3, mg/L, 1.00, 100., 100., 100., 90 - 110.

Lab Control Sample Duplicate

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Alkalinity as CaCO3, mg/L, 1.00, 100., 100., 100., 90 - 110.

Matrix Spike

Lab ID = 998830-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Alkalinity as CaCO3, mg/L, 1.00, 210., 226(100.), 84.0, 75 - 125.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 7 of 37
Printed 1/10/2012

Specific Conductivity - EPA 120.1		Batch 12EC11C			12/8/2011	
Parameter	Unit	Analyzed	DF	MDL	RL	Result
998946-001 Specific Conductivity	umhos/cm	12/08/2011	1.00	0.0950	2.00	7130
998946-002 Specific Conductivity	umhos/cm	12/08/2011	1.00	0.0950	2.00	7750
Method Blank						
Parameter	Unit	DF	Result			
Specific Conductivity	umhos	1.00	ND			
Duplicate					Lab ID = 998945-002	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	8420	8430	0.119	0 - 10
Duplicate					Lab ID = 998946-002	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7730	7750	0.258	0 - 10
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	695	706	98.4	90 - 110
Lab Control Sample Duplicate						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	694	706	98.3	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	697	706	98.7	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	949	997	95.2	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	950	997	95.3	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 37

Project Number: 424973.01.DM

Printed 1/10/2012

Chrome VI by EPA 218.6

Batch: 12CrH11G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998946-001 Chromium, Hexavalent	ug/L	12/08/2011 06:32	5.25	0.136	1.0	ND
998946-002 Chromium, Hexavalent	ug/L	12/08/2011 06:53	105	2.73	21.0	910.

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 998830-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	0.159	0.170	6.50	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.235	0.200	118.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.89	5.00	97.9	90 - 110

Matrix Spike

Lab ID = 998830-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.23(1.06)	99.6	90 - 110

Matrix Spike

Lab ID = 998830-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.24(1.06)	98.4	90 - 110

Matrix Spike

Lab ID = 998830-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.24(1.06)	97.9	90 - 110

Matrix Spike

Lab ID = 998830-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.24	1.25(1.06)	99.0	90 - 110

Matrix Spike

Lab ID = 998830-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.16	1.25(1.06)	91.7	90 - 110

Matrix Spike

Lab ID = 998830-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.25	1.25(1.06)	99.7	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 9 of 37
Printed 1/10/2012

Table with 7 columns: Matrix Spike, Parameter, Unit, DF, Result, Expected/Added, Recovery, and Acceptance Range. It contains 15 rows of data for Chromium, Hexavalent, with various DF values (1.06, 1.25, 1.23, 9.14, 8.27, 1.17, 7.00, 7.93, 2.00, 27.0, 5.25, 1.16) and recovery percentages (95.1, 100., 97.4, 98.1, 97.9, 95.5, 99.2, 99.3, 99.3, 101., 96.4, 98.4).

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 10 of 37

Project Number: 424973.01.DM

Printed 1/10/2012

Matrix Spike

Lab ID = 998946-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	105	2030	1960(1050)	107.	90 - 110
MRCSS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.89	5.00	97.8	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.90	10.0	99.0	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.96	10.0	99.6	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.70	10.0	97.0	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.71	10.0	97.1	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.70	10.0	97.0	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100.	95 - 105

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 11 of 37

Project Number: 424973.01.DM

Printed 1/10/2012

Metals by EPA 200.7, Total

Batch 121311A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998946-001 Aluminum	ug/L	12/13/2011 15:46	1.00	2.83	50.0	ND
Iron	ug/L	12/13/2011 15:46	1.00	1.34	20.0	ND
Nickel	ug/L	12/13/2011 15:46	1.00	2.56	10.0	ND
Zinc	ug/L	12/13/2011 15:46	1.00	3.89	10.0	ND
998946-002 Aluminum	ug/L	12/13/2011 16:08	1.00	2.83	50.0	ND
Iron	ug/L	12/13/2011 16:08	1.00	1.34	20.0	ND
Nickel	ug/L	12/13/2011 16:08	1.00	2.56	10.0	ND
Zinc	ug/L	12/13/2011 16:08	1.00	3.89	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Aluminum	ug/L	1.00	ND
Iron	ug/L	1.00	ND
Nickel	ug/L	1.00	ND
Zinc	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 998830-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Aluminum	ug/L	1.00	ND	0.00	0	0 - 20
Iron	ug/L	1.00	ND	0.00	0	0 - 20
Nickel	ug/L	1.00	ND	0.00	0	0 - 20
Zinc	ug/L	1.00	ND	0.00	0	0 - 20
Manganese	ug/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	104.	100.	104.	85 - 115
Iron	ug/L	1.00	99.1	100.	99.1	85 - 115
Nickel	ug/L	1.00	95.6	100.	95.6	85 - 115
Zinc	ug/L	1.00	97.5	100.	97.5	85 - 115
Manganese	ug/L	1.00	93.2	100.	93.2	85 - 115



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 16 of 37
Printed 1/10/2012

Metals by EPA 200.7, Total

Batch: 121611A

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include 998946-001 Boron and 998946-002 Boron.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row: Boron, ug/L, 1.00, ND.

Duplicate

Lab ID = 998830-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row: Boron, ug/L, 1.00, 129., 130., 0.772, 0 - 20.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Boron, ug/L, 1.00, 105., 100., 105., 85 - 115.

Matrix Spike

Lab ID = 998830-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row: Boron, ug/L, 1.00, 238., 230.(100.), 108., 75 - 125.

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Boron, ug/L, 1.00, 5120, 5000, 102., 90 - 110.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Boron, ug/L, 1.00, 5110, 5000, 102., 90 - 110.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Boron, ug/L, 1.00, 4920, 5000, 98.4, 90 - 110.

Interference Check Standard A

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Boron, ug/L, 1.00, ND, 0.00.

Interference Check Standard A

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Boron, ug/L, 1.00, ND, 0.00.

Interference Check Standard AB

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row: Boron, ug/L, 1.00, ND, 0.00.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 18 of 37

Project Number: 424973.01.DM

Printed 1/10/2012

Metals by EPA 200.8, Total

Batch: 123011C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998946-001 Arsenic	ug/L	12/31/2011 17:36	5.00	0.285	1.0	ND
Barium	ug/L	12/31/2011 17:36	5.00	0.200	10.0	15.4
Chromium	ug/L	12/31/2011 17:36	5.00	0.110	1.0	1.1
Lead	ug/L	12/31/2011 17:36	5.00	0.110	10.0	ND
Molybdenum	ug/L	12/31/2011 17:36	5.00	0.270	10.0	18.1
998946-002 Arsenic	ug/L	12/31/2011 18:20	5.00	0.285	1.0	3.7
Barium	ug/L	12/31/2011 18:20	5.00	0.200	10.0	28.0
Chromium	ug/L	12/31/2011 18:20	5.00	0.110	1.0	920.
Lead	ug/L	12/31/2011 18:20	5.00	0.110	10.0	ND
Molybdenum	ug/L	12/31/2011 18:20	5.00	0.270	10.0	20.0

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Barium	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Lead	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

Duplicate

Lab ID = 998830-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	5.00	2.95	2.48	17.3	0 - 20
Barium	ug/L	5.00	121.	121	0.331	0 - 20
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Lead	ug/L	5.00	ND	0.00	0	0 - 20
Molybdenum	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.175	0.200	87.4	70 - 130
Barium	ug/L	1.00	0.214	0.200	107.	70 - 130
Chromium	ug/L	1.00	0.232	0.200	116.	70 - 130
Lead	ug/L	1.00	0.200	0.200	99.8	70 - 130
Molybdenum	ug/L	1.00	0.220	0.200	110.	70 - 130

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 19 of 37

Project Number: 424973.01.DM

Printed 1/10/2012

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	103.	100.	103.	85 - 115
Barium	ug/L	5.00	107.	100.	107.	85 - 115
Chromium	ug/L	5.00	107.	100.	107.	85 - 115
Lead	ug/L	5.00	106.	100.	106.	85 - 115
Molybdenum	ug/L	5.00	103.	100.	103.	85 - 115

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	102.	100.	102.	85 - 115
Barium	ug/L	5.00	101.	100.	101.	85 - 115
Chromium	ug/L	5.00	105.	100.	105.	85 - 115
Lead	ug/L	5.00	99.4	100.	99.4	85 - 115
Molybdenum	ug/L	5.00	98.2	100.	98.2	85 - 115

Matrix Spike

Lab ID = 998830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	104.	102.(100.)	101.	75 - 125
Barium	ug/L	5.00	218.	221(100.)	96.5	75 - 125
Chromium	ug/L	5.00	102.	100.(100.)	102.	75 - 125
Lead	ug/L	5.00	94.8	100.(100.)	94.8	75 - 125
Molybdenum	ug/L	5.00	102.	100.(100.)	102.	75 - 125

Matrix Spike Duplicate

Lab ID = 998830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	106.	102.(100.)	104.	75 - 125
Barium	ug/L	5.00	220.	221(100.)	98.5	75 - 125
Chromium	ug/L	5.00	105.	100.(100.)	105.	75 - 125
Lead	ug/L	5.00	96.1	100.(100.)	96.1	75 - 125
Molybdenum	ug/L	5.00	103.	100.(100.)	103.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.65	10.0	96.5	90 - 110
Barium	ug/L	1.00	9.52	10.0	95.2	90 - 110
Chromium	ug/L	1.00	10.5	10.0	105.	90 - 110
Lead	ug/L	1.00	9.35	10.0	93.5	90 - 110
Molybdenum	ug/L	1.00	10.5	10.0	105	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 24 of 37
Printed 1/10/2012

Metals by EPA 200.8, Total

Batch 010712B

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include Manganese samples with their respective units and results.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row for Manganese showing ND result.

Low Level Calibration Verification

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Manganese with expected 0.200 and recovery 85.0.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Manganese with expected 100. and recovery 102.

Matrix Spike

Lab ID = 998830-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row for Manganese with expected 102.(100.) and recovery 97.5.

Matrix Spike Duplicate

Lab ID = 998830-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row for Manganese with expected 102.(100.) and recovery 99.7.

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Manganese with expected 10.0 and recovery 98.1.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Manganese with expected 10.0 and recovery 94.6.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Manganese with expected 10.0 and recovery 95.8.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Manganese with expected 10.0 and recovery 94.7.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Manganese with expected 10.0 and recovery 94.4.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 26 of 37

Project Number: 424973.01.DM

Printed 1/10/2012

Revised

Metals by EPA 200.8, Total

Batch 010812A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998946-001 Antimony	ug/L	01/09/2012 09:05	5.00	0.120	10.0	ND
Copper	ug/L	01/09/2012 09:05	5.00	0.125	5.0	ND
998946-002 Antimony	ug/L	01/09/2012 09:13	5.00	0.120	10.0	ND
Copper	ug/L	01/09/2012 09:13	5.00	0.125	5.0	ND

Method Blank

Parameter	Unit	DF	Result
Antimony	ug/L	1.00	ND
Copper	ug/L	1.00	ND

Duplicate

Lab ID = 998830-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Antimony	ug/L	5.00	ND	0.00	0	0 - 20
Copper	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	1.00	1.01	1.00	101.	70 - 130
Copper	ug/L	1.00	0.848	1.00	84.8	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	5.00	105.	100.	105.	85 - 115
Copper	ug/L	5.00	104.	100.	104.	85 - 115

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	5.00	104.	100.	104.	85 - 115
Copper	ug/L	5.00	104.	100.	104.	85 - 115

Matrix Spike

Lab ID = 998830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Antimony	ug/L	5.00	104.	100.(100.)	104.	75 - 125
Copper	ug/L	5.00	107.	100.(100.)	107.	75 - 125

Matrix Spike Duplicate

Lab ID = 998830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Antimony	ug/L	1.00	104	100.(100.)	104	75 - 125
Copper	ug/L	1.00	99.9	100.(100.)	99.9	75 - 125

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 28 of 37
Printed 1/10/2012

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	9.06	10.0	90.6	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	9.12	10.0	91.2	80 - 120

Reactive Silica by SM4500-Si D

Batch 12Si11B

12/8/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998946-002 Silica	mg/L	12/08/2011	25.0	0.532	1.00	19.1

Method Blank

Parameter	Unit	DF	Result
Silica	mg/L	1.00	ND

Duplicate

Lab ID = 998979-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Silica	mg/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.221	0.220	100.	90 - 110

Matrix Spike

Lab ID = 998979-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Silica	mg/L	1.00	0.378	0.400(0.400)	94.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.119	0.110	108	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.378	0.400	94.6	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 29 of 37
Printed 1/10/2012

Total Dissolved Solids by SM 2540 C		Batch 12TDS11B			12/9/2011	
Parameter	Unit	Analyzed	DF	MDL	RL	Result
998946-001 Total Dissolved Solids	mg/L	12/08/2011	1.00	0.400	250.	5120
998946-002 Total Dissolved Solids	mg/L	12/08/2011	1.00	0.400	250.	4390
Method Blank						
Parameter	Unit	DF	Result			
Total Dissolved Solids	mg/L	1.00	ND			
Duplicate					Lab ID = 999015-001	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	371	379	2.13	0 - 5
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	487	500.	97.4	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 30 of 37
Printed 1/10/2012

Total Organic Carbon (T/DOC) SM 5310 C

Batch 12TOC11B

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 998946-002 Total Organic Carbon, mg/L, 12/08/2011 16:39, 1.00, 0.0103, 0.300, 0.321

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Total Organic Carbon, mg/L, 1.00, ND

Duplicate

Lab ID = 998880-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Total Organic Carbon, mg/L, 1.00, 1.20, 1.20, 0.0833, 0 - 20

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Total Organic Carbon, mg/L, 1.00, 3.16, 3.33, 94.9, 90 - 110

Matrix Spike

Lab ID = 998946-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Total Organic Carbon, mg/L, 1.00, 11.8, 10.3(10.0), 115., 75 - 125

MRCSS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Total Organic Carbon, mg/L, 1.00, 3.22, 3.33, 96.8, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Total Organic Carbon, mg/L, 1.00, 9.76, 10.0, 97.6, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Total Organic Carbon, mg/L, 1.00, 9.55, 10.0, 95.5, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Total Organic Carbon, mg/L, 1.00, 9.59, 10.0, 95.9, 90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 31 of 37
Printed 1/10/2012

Table with columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Includes sections for Total Phosphate, SM 4500-PB,E; Method Blank; Duplicate; Lab Control Sample; Matrix Spike; MRCCS - Secondary; and MRCVS - Primary.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

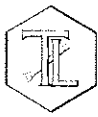
Page 32 of 37

Project Number: 424973.01.DM

Printed 1/10/2012

Ammonia Nitrogen by SM4500-NH3D		Batch 12NH3-E11C			12/7/2011	
Parameter	Unit	Analyzed	DF	MDL	RL	Result
998946-001 Ammonia as N	mg/L	12/07/2011	1.00	0.00120	0.500	ND
998946-002 Ammonia as N	mg/L	12/07/2011	1.00	0.00120	0.500	ND
Method Blank						
Parameter	Unit	DF	Result			
Ammonia as N	mg/L	1.00	ND			
Duplicate						Lab ID = 998946-002
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Ammonia as N	mg/L	1.00	ND	0.00	0	0 - 20
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	10.6	10.0	106.	90 - 110
Matrix Spike						Lab ID = 998946-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.33	6.00(6.00)	106.	75 - 125
Matrix Spike Duplicate						Lab ID = 998946-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.56	6.00(6.00)	109.	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.97	6.00	99.6	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.41	6.00	107.	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 33 of 37

Project Number: 424973.01.DM

Printed 1/10/2012

Metals by EPA 200.8, Dissolved

Batch 010912A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998946-002 Manganese	ug/L	01/09/2012 19:11	5.00	0.285	5.0	6.1

Method Blank

Parameter	Unit	DF	Result
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 998946-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Manganese	ug/L	5.00	6.15	6.09	0.964	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	0.730	1.00	73.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	5.00	107.	100.	107.	85 - 115

Matrix Spike

Lab ID = 998946-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Manganese	ug/L	5.00	111.	106.(100.)	105.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	10.0	10.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	10.1	10.0	101.	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	ND	0.00		

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	ND	0.00		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.95	10.0	99.5	80 - 120

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 35 of 37

Project Number: 424973.01.DM

Printed 1/10/2012

Metals by 200.7, Dissolved

Batch: 121311B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998946-002 Iron	ug/L	12/13/2011 04:14	1.00	1.34	20.0	ND

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 998946-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20
Manganese	ug/L	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	99.1	100.	99.1	85 - 115
Manganese	ug/L	1.00	93.2	100.	93.2	85 - 115

Matrix Spike

Lab ID = 998946-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	87.8	100.(100.)	87.8	75 - 125
Manganese	ug/L	1.00	96.4	100.(100.)	96.4	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4910	5000	98.1	90 - 110
Manganese	ug/L	1.00	4770	5000	95.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4870	5000	97.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4960	5000	99.2	90 - 110

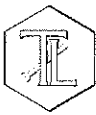
MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4960	5000	99.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4990	5000	99.7	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 37 of 37

Project Number: 424973.01.DM

Printed 1/10/2012

Turbidity by SM 2130 B

Batch 12TUC11B

12/7/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
998946-001 Turbidity	NTU	12/07/2011	1.00	0.0140	0.100	ND
998946-002 Turbidity	NTU	12/07/2011	1.00	0.0140	0.100	0.178

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 998946-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.48	8.00	93.5	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.64	8.00	95.5	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 12TDS11B
Date Calculated: 12/12/11

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	105.3557	105.3559	105.3557	0.0002	No	0.0000	0.0	25.0	ND	1
998938-1	100	104.2424	104.2692	104.2691	0.0001	No	0.0267	267.0	25.0	267.0	1
998938-2	50	67.7908	67.8327	67.8325	0.0002	No	0.0417	834.0	50.0	834.0	1
998939-3	50	74.5474	74.5966	74.5966	0.0000	No	0.0492	984.0	50.0	984.0	1
998946-1	10	51.1311	51.1827	51.1823	0.0004	No	0.0512	5120.0	250.0	5120.0	1
998946-2	10	47.0069	47.0509	47.0508	0.0001	No	0.0439	4390.0	250.0	4390.0	1
998976-1	50	73.4999	73.5509	73.5509	0.0000	No	0.0510	1020.0	50.0	1020.0	1
998976-2	50	67.7470	67.7951	67.7951	0.0000	No	0.0481	962.0	50.0	962.0	1
998976-3	50	76.5230	76.5696	76.5696	0.0000	No	0.0466	932.0	50.0	932.0	1
998976-4	50	76.5514	76.5944	76.5939	0.0005	No	0.0425	850.0	50.0	850.0	1
998976-5	50	68.1358	68.1796	68.1792	0.0004	No	0.0434	868.0	50.0	868.0	1
999015D	100	110.3680	110.4053	110.4051	0.0002	No	0.0371	371.0	25.0	371.0	1
LCS	100	74.2344	74.2832	74.2831	0.0001	No	0.0487	487.0	25.0	487.0	1
998976-6	50	65.5262	65.5898	65.5896	0.0002	No	0.0634	1268.0	50.0	1268.0	1
998976-7	50	73.8244	73.8715	73.8715	0.0000	No	0.0471	942.0	50.0	942.0	1
998976-8	50	75.1372	75.1778	75.1777	0.0001	No	0.0405	810.0	50.0	810.0	1
998976-9	50	75.9746	76.0078	76.0076	0.0002	No	0.0330	660.0	50.0	660.0	1
998981	100	110.4238	110.4613	110.4809	0.0004	No	0.0521	521.0	25.0	521.0	1
998982	460	112.8978	112.8979	112.8978	0.0001	No	0.0000	0.0	5.4	ND	1
998997-1	100	108.6889	108.7329	108.7329	0.0000	No	0.0440	440.0	25.0	440.0	1
998997-2	100	109.3934	109.4495	109.4494	0.0001	No	0.0560	560.0	25.0	560.0	1
998997-3	100	102.7253	102.7776	102.7776	0.0000	No	0.0523	523.0	25.0	523.0	1
999015	100	112.8342	112.8725	112.8721	0.0004	No	0.0379	379.0	25.0	379.0	1
LCS D											1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

C = mL of sample filtered.

RL= reporting limit.

ND = not detected (below the reporting limit)

[Signature]
Analyst Printed Name

[Signature]
Analyst Signature

[Signature]
Reviewer Printed Name

[Signature]
Reviewer Signature

[Signature] COC - Signed

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 12TDS11B

Date Calculated: 12/12/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
998938-1	460	0.58	299	0.89
998938-2	1258	0.66	817.7	1.02
998938-3	1465	0.67	952.25	1.03
998946-1	7210	0.71	4686.5	1.09
998946-2	7810	0.56	5076.5	0.86
998976-1	1520	0.67	988	1.03
998976-2	1590	0.61	1033.5	0.93
998976-3	1530	0.61	994.5	0.94
998976-4	1390	0.61	903.5	0.94
998976-5	1390	0.62	903.5	0.96
999015D	632	0.59	410.8	0.90
LCS				
998976-6	2090	0.61	1358.5	0.93
998976-7	1483	0.64	963.95	0.98
998976-8	1287	0.63	836.55	0.97
998976-9	1077	0.61	700.05	0.94
998981	733	0.71	476.45	1.09
998982	0.615	ND	0.39975	ND
998997-1	752	0.59	488.8	0.90
998997-2	943	0.59	612.95	0.91
998997-3	878	0.60	570.7	0.92
999015	632	0.60	410.8	0.92



TRUESDAIL LABORATORIES, INC.

Alkalinity by SM 2320B Calculations

EZ Sam

Date of Analysis: 12/7/11
 Start of Analysis:
 Date Sampled:

Analytical Batch: 12ALK11A
 Matrix: Water
 Date Calculated: 12/7/11

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO3	RL, ppm	Total Alkalinity Reported Value	HCO3 Alkalinity as CaCO3 (ppm)	CO3 Alkalinity as CaCO3 (ppm)	OH Alkalinity as CaCO3 (ppm)	Low Alkalinity as CaCO3 (<20ppm)
BLANK	7.00	50	0.02		0.0	0.05		0.9	5	ND	ND	ND	ND	
998906-1	7.51	50	0.02		0.0	8.60		172.0	5	172.0	172.0	ND	ND	
998906-2	7.56	50	0.02		0.0	11.80		236.0	5	236.0	236.0	ND	ND	
998919-20	8.21	50	0.02		0.0	4.25		85.0	5	85.0	85.0	ND	ND	
998930-1	8.35	50	0.02	0.0	0.0	6.30		126.0	5	126.0	126.0	0	ND	
998930-2	8.32	50	0.02	0.0	0.0	6.40		128.0	5	128.0	128.0	0	ND	
998930-3	8.30	50	0.02	0.0	0.0	6.30		126.0	5	126.0	ND	ND	ND	
998930-4	8.31	50	0.02	0.0	0.0	5.80		116.0	5	116.0	116.0	0	ND	
998930-5	8.29	50	0.02	0.0	0.0	5.85		117.0	5	117.0	117.0	ND	ND	
998930-6	8.28	50	0.02	0.0	0.0	5.70		114.0	5	114.0	114.0	ND	ND	
998930-7	8.28	50	0.02	0.0	0.0	6.00		120.0	5	120.0	120.0	ND	ND	
998930-8	8.26	50	0.02	0.0	0.0	6.25		125.0	5	125.0	125.0	ND	ND	
998930-9	8.32	50	0.02	0.0	0.0	6.25		125.0	5	125.0	125.0	0	ND	
998930-10	8.36	50	0.02	0.0	0.0	5.95		119.0	5	119.0	119.0	0	ND	
998930-11	8.25	50	0.02	0.0	0.0	6.80		136.0	5	136.0	136.0	ND	ND	
998930-12	7.53	50	0.02	0.0	0.0	6.75		135.0	5	135.0	135.0	ND	ND	
998919-20D	8.20	50	0.02	0.0	0.0	4.20		84.0	5	84.0	84.0	ND	ND	
998930-1MS	9.50	50	0.02	2.3	45.0	10.50		210.0	5	210.0	120.0	90	ND	
LCS1	10.25	50	0.02	2.2	44.0	5.00		100.0	5	100.0	12.0	88	ND	
LCS2	10.30	50	0.02	2.2	44.0	5.00		100.0	5	100.0	12.0	88	ND	

Calculations as follows:

$$T \text{ or } P = \left(\frac{A \times N \times 50000}{mL \text{ sample}} \right)$$

$$\text{Low Alkalinity} = \frac{(2 \times B - C) \times N \times 50000}{mL \text{ sample}}$$

ND: Not Detected (below the reporting limit)
 LCS: Laboratory Control Standard
 LCS2: Laboratory Control Standard Duplicate
 MS: Matrix Spike
 MSD: Matrix Spike Duplicate

Where: B = mL titrant to first recorded pH
 C = total mL titrant to reach pH 0.3 unit lower
 N = normality of standard acid

Analyst Printed Name: W. Chen
 Analyst Signature: [Signature]

Reviewer Printed Name: [Signature]
 Reviewer Signature: [Signature]



TRUESDAIL LABORATORIES, INC.
 14201 Franklin Avenue, Tustin, CA 92780-7008
 (714) 730-6239 FAX: (714) 730-6462
 www.truesdail.com

CHAIN OF CUSTODY RECORD
 [IM3Plant-WDR-329]

COC Number

TURNAROUND TIME 10 Days

DATE 10/04/11 PAGE 1 OF 1

998946

SAMPLE ID.	DATE	TIME	DESCRIPTION	TESTS													COMMENTS	
				Cr(VI) (218.6) Lab Filtered	Alkalinity (2320-B)	EC (120.1)	TDS (2540 c)	Turb (2130)	Total Metals (200.7) See List Below	Ammonia (4500-NH3)	Total P (4500-P)	Anions (300.0) F, NO3, SO4	TOC (5310 C)	Dissolved Metals (200.7) Fe, Mn lab filtered	Soluble Silica - Reactive (4500-SI Cond)	NO2 (4500-NO2B)		
SC-700B-WDR-329-338	10/04/11	1330		X	X	X	X	X	X	X	X	X	X	X	X	X	4	J pet - 6 (2007)
SC-100B-WDR-329-338	10/04/11	1330		X	X	X	X	X	X	X	X	X	X	X	X	X	9	
ALERT!! Level III QC																		
For Sample Conditions See Form Attached																		
													13	TOTAL NUMBER OF CONTAINERS				

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	Printed Name	Company/Agency	Date/Time
<i>[Signature]</i>	Rafael David	PG&E	12-6-11 15:00
<i>[Signature]</i>	Rafael David	PG&E	12-6-11 15:00
<i>[Signature]</i>	Rafael David	PG&E	12-6-11 23:30
<i>[Signature]</i>	Rafael David	PG&E	10/6/11 23:30
<i>[Signature]</i>	Rafael David	PG&E	
<i>[Signature]</i>	Rafael David	PG&E	
<i>[Signature]</i>	Rafael David	PG&E	

SAMPLE CONDITIONS

RECEIVED COOL WARM

CUSTODY SEALED YES NO

SPECIAL REQUIREMENTS:

The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
12/2/11	998873-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
12/6/2011	998900	7	5 mL	9.5	9:30 Am	GW
12/6/2011	998901-7	9.5	N/A	N/A	N/A	GW
	-8					
	-9					
12/7/2011	998935-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
12/7/2011	998937	9.5	N/A	N/A	N/A	GW
12/7/2011	998976-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
12/7/2011	998945	7	5 mL	9.5	10:15 Am	GW
12/7/2011	998946-1	7	5 mL	9.5	10:30 Am	GW
	-2				10:35 Am	GW
12/7/2011	998947-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
998634(1-8)	<1	<2	11/18/11	M.M	yes	-
998635(1-6)	↓	↓	↓	↓	↓	-
998633(1-8)	↓	↓	↓	↓	↓	-
998597(1,4,5,7)	>1	↓	↓	↓	↓	-
998623	↓	↓	↓	↓	↓	-
998624	↓	↓	↓	↓	↓	-
998632	↓	↓	↓	↓	↓	-
998638	↓	↓	↓	↓	↓	-
998201(1-0)	plant	>2	11/10/11	Katia	NO	yes 11/13/11
998661(1-3)	<1	<2	11/21/11	ES	yes	-
998662(1-6)	↓	↓	↓	↓	↓	-
998221-3	↓	↓	↓	↓	↓	-
998222-1	↓	↓	↓	↓	↓	-
998241-2	↓	↓	↓	↓	↓	-
998251-6	↓	↓	↓	↓	↓	-
998252-1	↓	↓	↓	↓	↓	-
998681(1-7)	<1	<2	11/22/11	ES	yes	-
998682(1-2)	↓	↓	↓	↓	↓	-
998733	<1	>2	11/28/11	ES	yes	-
998741(1-8)	↓	<2	11/29/11	M.M	yes	-
998779	↓	↓	↓	↓	↓	-
998815	solid	-	11/30/11	M.M	yes	TTL C
998757	↓	-	↓	↓	↓	↓
998803(1-13)	<1	<2	12/01/11	M.M	yes	-
998804(1-10)	↓	↓	↓	↓	↓	-
998805(1-13)	↓	↓	↓	↓	↓	-
998828(1-5)	↓	↓	↓	↓	↓	-
998829(1-8)	↓	↓	↓	↓	↓	-
998830(1-13)	↓	↓	↓	↓	↓	-
998730(1-5)	<1	<2	11/23/11	ES	yes	-
998878	solid	-	12/05/11	M.M	yes	STLC/TTL C
998935(1-3)	<1	<2	12/06/11	M.M	yes	-
998936(1-3)	↓	↓	↓	↓	↓	-
998851(1-5)	<1	<2	12/08/11	M.M	yes	-
998852(1-10)	↓	↓	↓	↓	↓	-
998874	↓	↓	↓	↓	↓	-
998873(1-4)	↓	↓	↓	↓	↓	-
998975(1-9)	↓	↓	↓	↓	↓	-
998945(1-2)	↓	>2	↓	↓	↓	Yes
998946(1-2)	↓	>2	↓	↓	↓	↓
998947(1-20)	↓	↓	↓	↓	↓	-
998892(1-4)	>1	<2	12/08/11	M.M	yes	-
998823	↓	↓	↓	↓	↓	-
998863	↓	↓	↓	↓	↓	-
998866	↓	↓	↓	↓	↓	-
998884	↓	↓	↓	↓	↓	-
998890	↓	↓	↓	↓	↓	-
998943	↓	↓	↓	↓	↓	-



Sample Integrity & Analysis Discrepancy Form

Client: E2

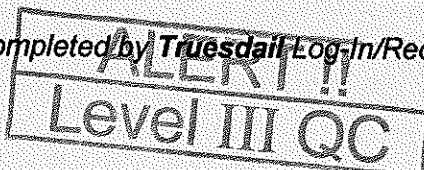
Lab # 998946

Date Delivered: 12/6/11 Time: 13:30 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 3.5°C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = see C.O.C Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other Water

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: J. Stealman



TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

January 5, 2012

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-339 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 999088

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-339 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.


The samples were received and delivered with the chain of custody on December 13, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

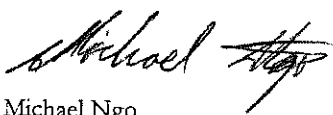
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


f.s. Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

001A

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Laboratory No.: 999088

Date: January 5, 2012

Collected: December 13, 2011

Received: December 13, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov



Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 999088
Date Received: December 13, 2011

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Analytical Results Summary

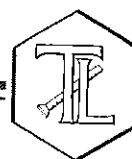
Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999088-001	SC-700B-WDR-339	E120.1	NONE	12/13/2011	13:30	EC	6990	umhos/cm	2.00
999088-001	SC-700B-WDR-339	E200.8	NONE-digested	12/13/2011	13:30	Chromium	ND	ug/L	1.0
999088-001	SC-700B-WDR-339	E200.8	NONE-digested	12/13/2011	13:30	Manganese	7.5	ug/L	1.0
999088-001	SC-700B-WDR-339	E218.6	LABFLT	12/13/2011	13:30	Chromium, hexavalent	ND	ug/L	0.20
999088-001	SC-700B-WDR-339	SM2130B	NONE	12/13/2011	13:30	Turbidity	ND	NTU	0.100
999088-001	SC-700B-WDR-339	SM2540C	NONE	12/13/2011	13:30	Total Dissolved Solids	4150	mg/L	125

ND: Non Detected (below reporting limit)
mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01ppm will have two (2) significant figures.
Result above or equal to 0.01ppm will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Laboratory No. 999088

Page 1 of 12

Printed 1/5/2012

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Samples Received on 12/13/2011 11:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-339	999088-001	12/13/2011 13:30	Water

Specific Conductivity - EPA 120.1

Batch: 12EC11E

12/14/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999088-001 Specific Conductivity	umhos/cm	12/14/2011	1.00	0.0950	2.00	6990

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 999088-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7000	6990	0.143	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	703	706	99.6	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	705	706	99.8	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	681	706	96.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	940	997	94.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	950	997	95.3	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

008



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 3 of 12
Printed 1/5/2012

Chrome VI by EPA 218.6

Batch 12CrH11N

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 999088-001 Chromium, Hexavalent, ug/L, 12/16/2011 04:46, 1.05, 0.0260, 0.20, ND

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Chromium, Hexavalent, ug/L, 1.00, ND

Duplicate

Lab ID = 999121-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.05, 1.52, 1.54, 1.42, 0 - 20

Low Level Calibration Verification

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 0.218, 0.200, 109, 70 - 130

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 4.82, 5.00, 96.5, 90 - 110

Matrix Spike

Lab ID = 998947-021

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 5.25, 5.26, 5.47(5.25), 95.9, 90 - 110

Matrix Spike

Lab ID = 999088-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 5.25, 5.48, 5.60(5.25), 97.8, 90 - 110

Matrix Spike

Lab ID = 999088-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.22, 1.22(1.06), 99.8, 90 - 110

Matrix Spike

Lab ID = 999089-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 5.25, 33.6, 34.4(26.2), 96.7, 90 - 110

Matrix Spike

Lab ID = 999089-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 5.25, 33.5, 34.9(26.2), 94.6, 90 - 110

Matrix Spike

Lab ID = 999089-003

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 5.25, 6.18, 6.41(5.25), 95.6, 90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 7 of 12
Printed 1/5/2012

Metals by EPA 200.8, Total

Batch 122911B

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 999088-001 Manganese, ug/L, 12/30/2011 07:30, 5.00, 0.285, 1.0, 7.5

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Manganese, ug/L, 1.00, ND

Duplicate

Lab ID = 999088-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Manganese, ug/L, 5.00, 7.60, 7.54, 0.858, 0 - 20

Low Level Calibration Verification

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 1.00, 0.197, 0.200, 98.4, 70 - 130

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 5.00, 90.3, 100., 90.3, 85 - 115

Lab Control Sample Duplicate

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 5.00, 94.1, 100., 94.1, 85 - 115

Matrix Spike

Lab ID = 999088-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 5.00, 103., 108.(100.), 95.1, 75 - 125

MRCSS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 1.00, 9.17, 10.0, 91.7, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 1.00, 9.21, 10.0, 92.1, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 1.00, 9.12, 10.0, 91.2, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Manganese, ug/L, 1.00, 9.00, 10.0, 90.0, 90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 9 of 12
Printed 1/5/2012

Metals by EPA 200.8, Total

Batch 010412A

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 999088-001 Chromium, ug/L, 01/04/2012 21:34, 5.00, 0.110, 1.0, ND

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Chromium, ug/L, 1.00, ND

Duplicate

Lab ID = 999088-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Chromium, ug/L, 5.00, ND, 0.00, 0, 0 - 20

Low Level Calibration Verification

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 0.233, 0.200, 116., 70 - 130

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 5.00, 101., 100., 101., 85 - 115

Lab Control Sample Duplicate

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 5.00, 102., 100., 102., 85 - 115

Matrix Spike

Lab ID = 999088-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 5.00, 105, 100.(100.), 105, 75 - 125

Matrix Spike Duplicate

Lab ID = 999088-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 5.00, 104., 100.(100.), 104., 75 - 125

MRCSS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 10.1, 10.0, 101., 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 9.43, 10.0, 94.3, 90 - 110

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, ug/L, 1.00, 9.40, 10.0, 94.0, 90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 11 of 12
Printed 1/5/2012

Total Dissolved Solids by SM 2540 C

Batch 12TDS11D

12/16/2011

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 999088-001 Total Dissolved Solids, mg/L, 12/16/2011, 1.00, 0.400, 125, 4150.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Total Dissolved Solids, mg/L, 1.00, ND.

Duplicate

Lab ID = 999086-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Total Dissolved Solids, mg/L, 1.00, 1030, 1010, 2.15, 0 - 5.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Total Dissolved Solids, mg/L, 1.00, 492, 500, 98.4, 90 - 110.

Turbidity by SM 2130 B

Batch 12TUC11E

12/14/2011

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 999088-001 Turbidity, NTU, 12/14/2011, 1.00, 0.0140, 0.100, ND.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Turbidity, NTU, 1.00, ND.

Duplicate

Lab ID = 999088-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Turbidity, NTU, 1.00, ND, 0.00, 0, 0 - 20.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Turbidity, NTU, 1.00, 8.05, 8.00, 101, 90 - 110.

Lab Control Sample Duplicate

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Turbidity, NTU, 1.00, 8.10, 8.00, 101, 90 - 110.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 12 of 12

Project Number: 424973.01.DM

Printed 1/5/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi

Manager, Analytical Services

B2 Sam



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 12TDS11D
Date Calculated: 12/21/11

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	76.5513	76.5513	76.5513	0.0000	No	0.0000	0.0	25.0	ND	1
999085-1	50	68.5702	68.6123	68.6122	0.0001	No	0.0420	840.0	50.0	840.0	1
999085-2	50	68.6050	68.6453	68.645	0.0003	No	0.0400	800.0	50.0	800.0	1
999085-3	50	68.1054	68.1522	68.1518	0.0004	No	0.0464	928.0	50.0	928.0	1
999085-4	50	66.7184	66.7581	66.7578	0.0003	No	0.0394	788.0	50.0	788.0	1
999085-5	50	74.1772	74.2083	74.2083	0.0000	No	0.0311	622.0	50.0	622.0	1
999085-6	50	68.5192	68.5844	68.5844	0.0000	No	0.0652	1304.0	50.0	1304.0	1
999086-1	50	73.6043	73.6526	73.6522	0.0004	No	0.0479	958.0	50.0	958.0	1
999086-2	50	49.3589	49.4056	49.4053	0.0003	No	0.0464	928.0	50.0	928.0	1
999086-3	50	72.5085	72.5659	72.5656	0.0003	No	0.0571	1142.0	50.0	1142.0	1
999086-4	50	49.3224	49.3727	49.3727	0.0000	No	0.0503	1006.0	50.0	1006.0	1
999086-4D	50	73.0000	73.0516	73.0516	0.0000	No	0.0516	1032.0	50.0	1032.0	1
LCS	100	73.5003	73.5496	73.5495	0.0001	No	0.0492	492.0	25.0	492.0	1
999086-5	50	51.4257	51.4826	51.4823	0.0003	No	0.0566	1132.0	50.0	1132.0	1
999086-6	50	51.0882	51.1408	51.1408	0.0000	No	0.0526	1052.0	50.0	1052.0	1
999087-1	50	50.6109	50.6623	50.662	0.0003	No	0.0511	1022.0	50.0	1022.0	1
999087-2	50	49.0332	49.0898	49.0895	0.0003	No	0.0563	1126.0	50.0	1126.0	1
999088	20	51.2668	51.3499	51.3498	0.0001	No	0.0830	4150.0	125.0	4150.0	1
999120	50	50.4154	50.4629	50.4629	0.0000	No	0.0475	950.0	50.0	950.0	1
999136	50	47.9634	48.0112	48.0112	0.0000	No	0.0478	956.0	50.0	956.0	1
999156	50	49.2962	49.3479	49.3475	0.0004	No	0.0513	1026.0	50.0	1026.0	1
999143	450	105.3560	105.3566	105.3566	0.0000	No	0.0006	1.3	5.6	ND	1
999062-2	20	50.9469	50.9907	50.9907	0.0000	No	0.0438	2190.0	125.0	2190.0	1
LCS D											1

Calculation as follows:

$$\text{Filterable residue (TDS), mg/L} = \left(\frac{A - B}{C} \right) \times 10^6$$

Where: A = weight of dish + residue in grams.

B = weight of dish in grams.

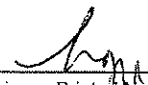
C = mL of sample filtered.

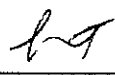
RL= reporting limit.

ND = not detected (below the reporting limit)


Analyst Printed Name


Analyst Signature


Reviewer Printed Name


Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 12TDS11D

Date Calculated: 12/21/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
999085-1	1402	0.60	911.3	0.92
999085-2	1408	0.57	915.2	0.87
999085-3	1473	0.63	957.45	0.97
999085-4	1257	0.63	817.05	0.96
999085-5	1055	0.59	685.75	0.91
999085-6	2110	0.62	1371.5	0.95
999086-1	1470	0.65	955.5	1.00
999086-2	1460	0.64	949	0.98
999086-3	1760	0.65	1144	1.00
999086-4	1600	0.63	1040	0.97
999086-4D	1600	0.64	1040	0.99
LCS				
999086-5	1700	0.67	1105	1.02
999086-6	1600	0.66	1040	1.01
999087-1	1560	0.66	1014	1.01
999087-2	1700	0.66	1105	1.02
999088	7000	0.59	4550	0.91
999120	1530	0.62	994.5	0.96
999136	1720	0.56	1118	0.86
999156	1605	0.64	1043.25	0.98
999143	1.99	ND	1.2935	ND
999062-2	2160	1.01	1404	1.56

— RR/ but still had bug



TRUESDAIL LABORATORIES, INC.
 14201 Franklin Avenue, Tustin, CA 92780-7008
 (714) 730-6239 FAX: (714) 730-6462
 www.truesdail.com

CHAIN OF CUSTODY RECORD

[IM3] Plant-WDR-339]

COC Number

10 Days

TURNAROUND TIME

DATE 12/13/11

PAGE 1 OF 1

999088

COMPANY E2	PROJECT NAME PG&E Topock	PHONE (530) 229-3303	FAX (530) 339-3303	ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612	P.O. NUMBER 424973.01.DM	SAMPLERS (SIGNATURE) <i>[Signature]</i>	DATE 12/13/11	TIME 1330	DESCRIPTION Water	Cr6 (218.6) Lab Filtered	Totol Metals (200.7) Cr. Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)	NUMBER OF CONTAINERS	COMMENTS
SAMPLE I.D. SC-700B-WDR-339	DATE 12/13/11	TIME 1330	DESCRIPTION Water	Cr6 (218.6) Lab Filtered	Totol Metals (200.7) Cr. Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)							3	
															3	OIL = 7 (700.7)
															3	TOTAL NUMBER OF CONTAINERS

**ALERT!!
Level III QC**

**For Sample Conditions
See Form Attached**

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL	WARM	
<i>[Signature]</i>	<i>[Name]</i>	<i>[Company]</i>	12-13-11 15:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	40 F
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES	NO	<input checked="" type="checkbox"/>
<i>[Signature]</i>	<i>[Name]</i>	<i>[Company]</i>	12-13-11 15:30	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:			
<i>[Signature]</i>	<i>[Name]</i>	<i>[Company]</i>	12-13-11 23:30				
Signature (Received)	Printed Name	Company/ Agency	Date/ Time				
<i>[Signature]</i>	<i>[Name]</i>	<i>[Company]</i>	12/13/11 23:30				
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time				
<i>[Signature]</i>	<i>[Name]</i>	<i>[Company]</i>					
Signature (Received)	Printed Name	Company/ Agency	Date/ Time				
<i>[Signature]</i>	<i>[Name]</i>	<i>[Company]</i>					

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
12/9/11	999016-1	9.5	N/A	N/A	N/A	GW
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
12/13/11	999038-1	9.5	N/A	N/A	N/A	GW
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	999039-2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
12/14/11	999083	9.5	N/A	N/A	N/A	al
12/14/11	999084-1	9.5	N/A	N/A	N/A	al
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
12/14/11	999086-1	9.5	N/A	N/A	N/A	al
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
al 12/14/11	999087					
12/14/11	999087-1	9.5	N/A	N/A	N/A	al
↓	↓ -2	↓	↓	↓	↓	↓
12/14/11	999088	7	5 mL to 9.5	9.5	10:40a	al



ALERT !!
Level III QC

Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 999088

Date Delivered: 12/12/11 Time: 03:30 By: Mail Field Service Client

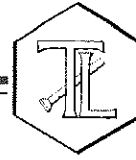
1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4 °C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = see COC Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other Water

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: Alex

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

January 9, 2012

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-340 PROJECT, GROUNDWATER MONITORING, TLI NO.: 999227

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-340 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.


The samples were received and delivered with the chain of custody on December 20, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.


Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 999227

Date: January 9, 2012

Collected: December 20, 2011

Received: December 20, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Laboratory No.: 999227
Date Received: December 20, 2011

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999227-001	SC-700B-WDR-340	E120.1	NONE	12/20/2011	13:30	EC	7120	umhos/cm	2.0
999227-001	SC-700B-WDR-340	E200.8	NONE-digested	12/20/2011	13:30	Chromium	ND	ug/L	1.0
999227-001	SC-700B-WDR-340	E200.8	NONE-digested	12/20/2011	13:30	Manganese	6.5	ug/L	1.0
999227-001	SC-700B-WDR-340	E218.6	LABFLT	12/20/2011	13:30	Chromium, hexavalent	ND	ug/L	1.0
999227-001	SC-700B-WDR-340	SM2130B	NONE	12/20/2011	13:30	Turbidity	ND	NTU	0.100
999227-001	SC-700B-WDR-340	SM2540C	NONE	12/20/2011	13:30	Total Dissolved Solids	4280	mg/L	125

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:

Results below 0.01ppm will have two (2) significant figures.

Result above or equal to 0.01ppm will have three (3) significant figures.

Quality Control data will always have three (3) significant figures.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800
Oakland, CA 94612

Laboratory No. 999227

Page 1 of 9

Printed 1/9/2012

Attention: Shawn Duffy

Project Name: PG&E Topock Projec

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Samples Received on 12/20/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-340	999227-001	12/20/2011 13:30	Water

Specific Conductivity - EPA 120.1

Batch 12EC11H

12/28/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999227-001 Specific Conductivity	umhos/cm	12/28/2011	1.00	0.0950	2.00	7120

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 999227-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7130	7120	0.140	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	684	706	96.9	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	688	706	97.4	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	684	706	96.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	951	997	95.4	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

008



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Projec
Project Number: 424973.01.DM

Page 2 of 9
Printed 1/9/2012

Chrome VI by EPA 218.6

Batch 12CrH11P

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Row 1: 999227-001 Chromium, Hexavalent, ug/L, 12/22/2011 11:01, 5.25, 0.136, 1.0, ND

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Row 1: Chromium, Hexavalent, ug/L, 1.00, ND

Duplicate

Lab ID = 999178-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected, RPD, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.05, 0.375, 0.377, 0.639, 0 - 20

Low Level Calibration Verification

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 0.203, 0.200, 102., 70 - 130

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.00, 4.88, 5.00, 97.6, 90 - 110

Matrix Spike

Lab ID = 999178-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.46, 1.44(1.06), 102., 90 - 110

Matrix Spike

Lab ID = 999178-002

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 7.20, 7.16(5.30), 101., 90 - 110

Matrix Spike

Lab ID = 999178-003

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 7.31, 7.29(5.30), 100., 90 - 110

Matrix Spike

Lab ID = 999178-004

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 1.28, 1.28(1.06), 99.6, 90 - 110

Matrix Spike

Lab ID = 999178-005

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 7.08, 7.03(5.30), 101., 90 - 110

Matrix Spike

Lab ID = 999178-006

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Row 1: Chromium, Hexavalent, ug/L, 1.06, 7.17, 7.14(5.30), 101., 90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Projec

Page 3 of 9

Project Number: 424973.01.DM

Printed 1/9/2012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	7.62	7.60(5.30)	100.	90 - 110
Lab ID = 999178-007						
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	8.63	8.65(5.30)	99.7	90 - 110
Lab ID = 999178-008						
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.02	1.06(1.06)	95.8	90 - 110
Lab ID = 999227-001						
Matrix Spike						
Chromium, Hexavalent	ug/L	5.25	5.12	5.25(5.25)	97.6	90 - 110
Lab ID = 999227-001						
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	6.74	6.72(5.30)	100.	90 - 110
Lab ID = 999247-001						
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	6.61	6.61(5.30)	99.9	90 - 110
Lab ID = 999248-001						
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.22	1.22(1.06)	99.8	90 - 110
Lab ID = 999248-002						
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	1.18	1.10(1.06)	107.	90 - 110
Lab ID = 999248-003						
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	8.13	8.12(5.30)	100.	90 - 110
Lab ID = 999249-001						
Matrix Spike						
Chromium, Hexavalent	ug/L	1.06	6.48	6.52(5.30)	99.2	90 - 110
Lab ID = 999249-002						
Matrix Spike						
Chromium, Hexavalent	ug/L	1.00	4.87	5.00	97.5	90 - 110
Lab ID = 999249-002						
MRCVS - Primary						
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105
Lab ID = 999249-002						
MRCVS - Secondary						
Chromium, Hexavalent	ug/L	1.00	4.87	5.00	97.5	90 - 110
Lab ID = 999249-002						

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Projec

Page 5 of 9

Project Number: 424973.01.DM

Printed 1/9/2012

Metals by EPA 200.8, Total

Batch 010712B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999227-001 Chromium	ug/L	01/08/2012 19:06	5.00	0.275	1.0	ND
Manganese	ug/L	01/08/2012 19:06	5.00	0.285	1.0	6.5

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 999227-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	6.22	6.53	4.86	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.150	0.200	75.0	70 - 130
Manganese	ug/L	1.00	0.170	0.200	85.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	108.	100.	108.	85 - 115
Manganese	ug/L	5.00	104.	100.	104.	85 - 115

Matrix Spike

Lab ID = 999227-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	110.	100.(100.)	110.	75 - 125
Manganese	ug/L	5.00	107.	106.(100.)	100.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	90 - 110
Manganese	ug/L	1.00	9.81	10.0	98.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.52	10.0	95.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.54	10.0	95.4	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 8 of 9
Printed 1/9/2012

Total Dissolved Solids by SM 2540 C

Batch 12TDS11E

12/27/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999227-001 Total Dissolved Solids	mg/L	12/22/2011	1.00	0.400	125	4280

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	1.00	ND

Duplicate

Lab ID = 999227-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4320	4280	1.04	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	504	500	101	90 - 110

Turbidity by SM 2130 B

Batch 12TUC11G

12/21/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999227-001 Turbidity	NTU	12/21/2011	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 999227-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.72	8.00	96.5	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.65	8.00	95.6	90 - 110



Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Projec

Page 9 of 9

Project Number: 424973.01.DM

Printed 1/9/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 

Mona Nassimi

Manager, Analytical Services



TRUESDAIL LABORATORIES, INC.
 14201 Franklin Avenue, Tustin, CA 92780-7008
 (714) 730-6239 FAX: (714) 730-6462
 www.truesdail.com

CHAIN OF CUSTODY RECORD

[IM3] Plant-WDR-340

COC Number

10 Days

TURNAROUND TIME

DATE 12/20/11 PAGE 1 OF 1

999227

COMPANY E2	PROJECT NAME PG&E Topock	PHONE (530) 229-3303	FAX (530) 339-3303	ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612	P.O. NUMBER 424973.01.DM	TEAM 1	SAMPLERS SIGNATURE 	DATE 12/20/11	TIME 1330	DESCRIPTION Water	Cr6 (218.6) Lab Filtered	X	Total Metals (200.7) Cr. Mn	X	Specific Conductance (120.1)	X	TDS (SM2540C)	X	Turbidity (SM2130)	X	COMMENTS
SC-700B-WDR-340											NUMBER OF CONTAINERS										
											3										
											3										
											TOTAL NUMBER OF CONTAINERS										

PH = 6.200.7

For Sample Conditions
See Form Attached

ALERT!!
Level III QC

CHAIN OF CUSTODY SIGNATURE RECORD										SAMPLE CONDITIONS							
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	Signature (Received)	Printed Name	Company/ Agency	Date/ Time	Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL	WARM	YES	NO	5.4 °C
	Rafael Davila	Company/ Agency	12-20-11 15:30		Rafael Davila	Company/ Agency	12-20-11 15:30		Rafael Davila	Company/ Agency	12-20-11 21:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	Signature (Received)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:					
	Rafael Davila	Company/ Agency	12-20-11 21:30		Rafael Davila	Company/ Agency	12-20-11 21:30		Rafael Davila	Company/ Agency	12-20-11 21:30						

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
12/19/11	999180-13	9.5	N/A	N/A	N/A	GW
		-14				
		-15				
		-16				
		-17				
		-18				
		-19				
		-20				
		-21				
		-23				
		-24				
		-25				
		-26				
		-26				
12/20/11	999226	7	5 ml	9.5	10 Am	GW
12/21/11	999227	7	5 ml	9.5	10:15 Am	GW
12/22/11	999247	9.5	N/A	N/A	N/A	GW
12/22/11	999248-1	9.5	N/A	N/A	N/A	GW
		-2				
		-3				
12/22/11	999249-1	9.5	N/A	N/A	N/A	GW
		-2				
12/22/11	999250-1	9.5	N/A	N/A	N/A	GW
		-2				
		-3				
		-4				
		-5				
		-6				
		-7				
		-8				
		-9				
		-10				

al

Metals Samples Logbook
 -Turbidity/pH Check-

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
998901 (7-8)	<1	<2	12/09/11	M.M	Yes	-
998945 (1-2)	↓	↓	↓	↓	↓	-
998946 (1-2)	↓	↓	↓	↓	↓	-
998947 (1-5)	↓	↓	↓	↓	↓	-
998996 (1-6)	↓	↓	↓	↓	↓	-
999016 (1-6)	<1	<2	12/12/11	M.M	Yes	-
999059	>1	<2	12/04/11	M.M	Yes	-
999056	↓	↓	↓	↓	↓	-
999059 (1-2)	↓	↓	↓	↓	↓	-
999038 (1-2)	<1	<2	12/14/11	M.M	Yes	-
999039 (1-5)	↓	↓	12/14/11	↓	↓	-
999084 (1-6)	↓	↓	↓	↓	↓	-
999086 (1-6)	↓	↓	↓	↓	↓	-
999087 (1-2)	↓	↓	↓	↓	↓	-
999088	↓	↓	↓	↓	↓	-
999089 (1-5)	↓	↓	↓	↓	↓	-
999091 (1-2)	<1	<2	12/15/11	M.M	Yes	-
999090 (1-2)	↓	↓	↓	↓	↓	-
999092 (1-16)	↓	↓	↓	↓	↓	-
999117 (1-2)	↓	↓	↓	↓	↓	-
999118	↓	↓	↓	↓	↓	-
999121 (1-4)	↓	↓	↓	↓	↓	-
999154 (1-9)	<1	<2	12/16/11	M.M	Yes	-
999155 (1-2)	↓	↓	↓	↓	↓	-
999156	↓	↓	↓	↓	↓	-
999047-1	>1	<2	12/16/11	M.M	Yes	-
999064 (1-2)	↓	↓	↓	↓	↓	-
999124	↓	↓	↓	↓	↓	-
999125 (1-4)	↓	↓	↓	↓	↓	-
999148	↓	↓	↓	↓	↓	-
999149	↓	↓	↓	↓	↓	-
999151	↓	↓	↓	↓	↓	-
999167	↓	↓	↓	↓	↓	-
999178 (1-8)	<1	<2	12/19/11	M.M	Yes	-
999179 (1-8)	↓	↓	↓	↓	↓	-
999180 (1-26)	↓	↓	↓	↓	↓	-
999028 (1-2)	Solid	-	12/19/11	M.M	Yes	TVC
999175 (1-2)	↓	↓	↓	↓	↓	↓
999191	↓	↓	↓	↓	↓	↓
998731 (12/19)	<1	<2	11/23/11	M.M	Yes	↓
999227	<1	<2	12/21/11	M.M	Yes	-
998732 (1-13)	<1	<2	11/30/11	M.M	Yes	-
998802	<1	<2	11/30/11	M.M	Yes	-
999241	>1	>2	12/21/11	M.M	Yes	-
998777 (1-7)	<1	<2	11/30/11	M.M	Yes	-
998778 (1-9)	<1	<2	↓	↓	↓	-
999308	<1	<2	01/11/12	M.M	Yes	-
999360 (1-2)	↓	↓	↓	↓	↓	-
999362 (1-3)	↓	↓	↓	↓	↓	-



Sample Integrity & Analysis Discrepancy Form

Client: EL

Lab # 999227

Date Delivered: 12/20/11 Time: 11:30 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition? Yes No N/A
Temperature (if yes)? 5.4°C
7. Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation? Yes No N/A
Preserved (if yes) by: Truesdail Client
12. Were samples pH checked? pH = 8.0-8.2 Yes No N/A
13. Were all analyses within holding time at time of receipt? Yes No N/A
If not, notify Project Manager.
14. Have Project due dates been checked and accepted? Yes No N/A
Turn Around Time (TAT): RUSH Std
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other Water

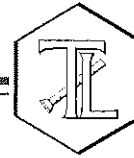
ALERT!!
Level III QC

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: Linda Stabumire

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

January 9, 2012

E2 Consulting Engineers, Inc.
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-341 PROJECT, GROUNDWATER
MONITORING, TLI NO: 999308

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-341 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.


The samples were received and delivered with the chain of custody on December 27, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

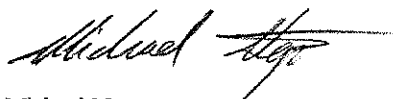
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

No other violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


for
Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 999308

Date: January 9, 2012

Collected: December 27, 2011

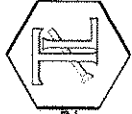
Received: December 27, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Mark Kotani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Kim Luck
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
 (714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: E2 Consulting Engineers, Inc.
 155 Grand Ave. Suite 1000
 Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 999308
Date Received: December 27, 2011

Project Name: PG&E Topock Project
Project No.: 424973.01.DM
P.O. No.: 424973.01.DM

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999308-001	SC-700B-WDR-341	E120.1	NONE	12/27/2011	10:30	EC	7160	umthos/cm	2.0
999308-001	SC-700B-WDR-341	E200.8	NONE-digested	12/27/2011	10:30	Chromium	ND	ug/L	1.0
999308-001	SC-700B-WDR-341	E200.8	NONE-digested	12/27/2011	10:30	Manganese	5.7	ug/L	1.0
999308-001	SC-700B-WDR-341	E218.6	LABFLT	12/27/2011	10:30	Chromium, hexavalent	ND	ug/L	1.0
999308-001	SC-700B-WDR-341	SM2130B	NONE	12/27/2011	10:30	Turbidity	ND	NTU	0.100
999308-001	SC-700B-WDR-341	SM2540C	NONE	12/27/2011	10:30	Total Dissolved Solids	4240	mg/L	125

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:

Results below 0.01ppm will have two (2) significant figures.

Result above or equal to 0.01ppm will have three (3) significant figures.

Quality Control data will always have three (3) significant figures.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Laboratory No. 999308

Page 1 of 9

Printed 1/9/2012

Samples Received on 12/27/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-341	999308-001	12/27/2011 10:30	Water

Specific Conductivity - EPA 120.1

Batch: 12EC11H

12/28/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999308-001 Specific Conductivity	umhos/cm	12/28/2011	1.00	0.0950	2.00	7160

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 999227-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7130	7120	0.140	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	684	706	96.9	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	688	706	97.4	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	684	706	96.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	951	997	95.4	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

008



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 9

Project Number: 424973.01.DM

Printed 1/9/2012

Chrome VI by EPA 218.6

Batch: 12CrH11S

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999308-001 Chromium, Hexavalent	ug/L	12/28/2011 14:58	5.25	0.136	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium, Hexavalent	ug/L	1.00	ND

Duplicate

Lab ID = 999092-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	6.58	6.62	0.661	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.186	0.200	92.8	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00	98.0	90 - 110

Matrix Spike

Lab ID = 999090-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.5	10.3	10.5(10.5)	98.3	90 - 110

Matrix Spike

Lab ID = 999090-017

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.5	10.1	10.5(10.5)	96.2	90 - 110

Matrix Spike

Lab ID = 999092-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.06	5.25(5.25)	96.4	90 - 110

Matrix Spike

Lab ID = 999092-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	0.00	1.06(1.06)	0.00	90 - 110

Matrix Spike

Lab ID = 999092-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.04	1.06(1.06)	98.5	90 - 110

Matrix Spike

Lab ID = 999092-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.23	5.25(5.25)	99.5	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 4 of 9
Printed 1/9/2012

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Rows include Matrix Spike and MRCVS - Primary for Chromium, Hexavalent.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project
Project Number: 424973.01.DM

Page 5 of 9
Printed 1/11/2012
Revised

Metals by EPA 200.8, Total

Batch 010712C

Table with 7 columns: Parameter, Unit, Analyzed, DF, MDL, RL, Result. Rows include Chromium and Manganese with their respective units and results.

Method Blank

Table with 4 columns: Parameter, Unit, DF, Result. Rows for Chromium and Manganese showing ND results.

Low Level Calibration Verification

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows for Chromium and Manganese.

Lab Control Sample

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows for Chromium and Manganese.

Matrix Spike

Lab ID = 999308-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Rows for Chromium and Manganese.

Matrix Spike Duplicate

Lab ID = 999308-001

Table with 7 columns: Parameter, Unit, DF, Result, Expected/Added, Recovery, Acceptance Range. Rows for Chromium and Manganese.

MRCCS - Secondary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Rows for Chromium and Manganese.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Chromium.

MRCVS - Primary

Table with 7 columns: Parameter, Unit, DF, Result, Expected, Recovery, Acceptance Range. Row for Chromium.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 9

Project Number: 424973.01.DM

Printed 1/9/2012

Total Dissolved Solids by SM 2540 C

Batch 12TDS11F

12/28/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999308-001 Total Dissolved Solids	mg/L	12/28/2011	1.00	0.400	125	4240

Method Blank

Parameter	Unit	DF	Result
Total Dissolved Solids	mg/L	1.00	ND

Duplicate

Lab ID = 999250-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	3200	3200	0.156	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	491	500	98.2	90 - 110

Turbidity by SM 2130 B

Batch 12TUC11L

12/29/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999308-001 Turbidity	NTU	12/29/2011	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 999308-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.06	8.00	101	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.02	8.00	100	90 - 110

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 9

Project Number: 424973.01.DM

Printed 1/9/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 

Mona Nassimi

Manager, Analytical Services

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 12TDS11F

Date Calculated: 12/29/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
999250-1	4990	0.75	3243.5	1.15
999250-2	2180	0.68	1417	1.04
999250-3	2030	0.68	1319.5	1.04
999250-4	828	0.64	538.2	0.99
999250-5	3510	0.72	2281.5	1.10
999250-6	4730	0.68	3074.5	1.04
999250-7	2860	0.67	1859	1.02
999250-8	2290	0.65	1488.5	1.00
999250-9	2350	0.65	1527.5	1.00
999250-10	4740	0.68	3081	1.04
999250-10D	4740	0.67	3081	1.04
LCS				
999274-1	3730	0.61	2424.5	0.94
999274-2	3970	0.60	2580.5	0.92
999398-2	206	0.51	133.9	0.79
999398-4	449	0.58	291.85	0.89
999308	7160	0.59	4654	0.91



TRUESDAIL LABORATORIES, INC.
 14201 Franklin Avenue, Tustin, CA 92780-7008
 (714) 730-6239 FAX: (714) 730-6462
 www.truesdail.com

CHAIN OF CUSTODY RECORD

[IMS]Plant-WDR-341

999308

COC Number

TURNAROUND TIME 5 Days

DATE 12/27/11 PAGE 1 OF 1

COMPANY E2	PROJECT NAME PG&E Topock	PHONE (530) 229-3303	FAX (530) 339-3303	ADDRESS 155 Grand Ave Site 1000 Oakland, CA 94612	P.O. NUMBER 424973.01.DM	TEAM 1	SAMPLERS (SIGNATURE) <i>[Signature]</i>	DATE 12/27/11	TIME 10:30	DESCRIPTION Water	Cr6 (218.6) Lab Filtered	X	Total Metals (200.7) Cr, Mn	X	Specific Conductance (120.1)	X	TDS (SM2540C)	X	Turbidity (SM2130)	X	COMMENTS	NUMBER OF CONTAINERS	TOTAL NUMBER OF CONTAINERS	
																					3	3	PH = 7 (200.7)	3

RUSH

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	<i>[Signature]</i>	Printed Name	<i>[Name]</i>	Company/ Agency	<i>[Company]</i>	Date/ Time	12-27-11 13:30
Signature (Received)	<i>[Signature]</i>	Printed Name	Rafael Davila	Company/ Agency	F.I.I	Date/ Time	11-27-11
Signature (Relinquished)	<i>[Signature]</i>	Printed Name	Rafael Davila	Company/ Agency	F.I.I	Date/ Time	12-27-11 21:30
Signature (Received)	<i>[Signature]</i>	Printed Name	Stacy Wong	Company/ Agency	TLD	Date/ Time	12/27/11 21:50
Signature (Relinquished)		Printed Name		Company/ Agency		Date/ Time	
Signature (Received)		Printed Name		Company/ Agency		Date/ Time	

SAMPLE CONDITIONS

RECEIVED COOL WARM 5.3 °C

CUSTODY SEALED YES NO

SPECIAL REQUIREMENTS:

Metals Samples Logbook

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
998901 (7-8)	<1	<2	12/09/11	M.M	Yes	-
998945 (1-2)	↓	↓	↓	↓	↓	-
998946 (1-2)	↓	↓	↓	↓	↓	-
998947 (1-5)	↓	↓	↓	↓	↓	-
998996 (1-6)	↓	↓	↓	↓	↓	-
999016 (1-6)	<1	<2	12/12/11	M.M	Yes	-
999052	>1	<2	12/04/11	M.M	Yes	-
999056	↓	↓	↓	↓	↓	-
999059 (1-5)	↓	↓	↓	↓	↓	-
999038 (1-2)	<1	<2	12/14/11	M.M	Yes	-
999039 (1-5)	↓	↓	14:00	↓	↓	-
999084 (1-6)	↓	↓	↓	↓	↓	-
999086 (1-6)	↓	↓	↓	↓	↓	-
999087 (1-2)	↓	↓	↓	↓	↓	-
999088	↓	↓	↓	↓	↓	-
999089 (1-5)	↓	↓	↓	↓	↓	-
999091 (1-2)	<1	<2	12/15/11	M.M	Yes	-
999090 (1-9)	↓	↓	↓	↓	↓	-
999092 (1-16)	↓	↓	↓	↓	↓	-
999117 (1-2)	↓	↓	↓	↓	↓	-
999118	↓	↓	↓	↓	↓	-
999121 (1-4)	↓	↓	↓	↓	↓	-
999154 (1-9)	<1	<2	12/16/11	M.M	Yes	-
999155 (1-2)	↓	↓	↓	↓	↓	-
999156	↓	↓	↓	↓	↓	-
999047-1	>1	<2	12/16/11	M.M	Yes	-
999065 (1-2)	↓	↓	↓	↓	↓	-
999124	↓	↓	↓	↓	↓	-
999125 (1-4)	↓	↓	↓	↓	↓	-
999148	↓	↓	↓	↓	↓	-
999149	↓	↓	↓	↓	↓	-
999151	↓	↓	↓	↓	↓	-
999167	↓	↓	↓	↓	↓	-
999178 (1-8)	<1	<2	12/19/11	M.M	Yes	-
999179 (1-8)	↓	↓	↓	↓	↓	-
999180 (1-26)	↓	↓	↓	↓	↓	-
999028 (1-2)	Solid	-	12/19/11	M.M	Yes	TTC
999175 (1-2)	↓	↓	↓	↓	↓	↓
999191	↓	↓	↓	↓	↓	↓
998731 (1-2)	<1	<2	11/23/11	M.M	Yes	↓
999227	<1	<2	12/21/11	M.M	Yes	-
998732 (1-13)	<1	<2	11/30/11	M.M	Yes	-
998802	<1	<2	11/30/11	M.M	Yes	-
999241	>1	>2	12/21/11	M.M	Yes	-
998777 (1-7)	<1	<2	11/30/11	M.M	Yes	-
998778 (1-9)	<1	<2	↓	↓	↓	-
999308	<1	<2	01/01/12	M.M	Yes	-
999360 (1-2)	↓	↓	↓	↓	↓	-
999362 (1-3)	↓	↓	↓	↓	↓	-



Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 999308

Date Delivered: 12/27/11 Time: 11:30 By: Mail Field Service Client

1. Was a Chain of Custody received and signed? Yes No N/A
2. Does Customer require an acknowledgement of the COC? Yes No N/A
3. Are there any special requirements or notes on the COC? Yes No N/A
4. If a letter was sent with the COC, does it match the COC? Yes No N/A
5. Were all requested analyses understood and acceptable? Yes No N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 5, 3°C Yes No N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? Yes No N/A
8. Were sample custody seals intact? Yes No N/A
9. Does the number of samples received agree with COC? Yes No N/A
10. Did sample labels correspond with the client ID's? Yes No N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: Truesdail Client Yes No N/A
12. Were samples pH checked? pH = see c.o.c. Yes No N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. Yes No N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): RUSH Std Yes No N/A
15. **Sample Matrix:** Liquid Drinking Water Ground Water Waste Water
 Sludge Soil Wipe Paint Solid Other Water

ALERT!!
Level III QC

RUSH

16. Comments: _____

17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Guabruna

WDR pH Results

Analytical Bench Log Book

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. for Serial Number See cover Sheet	Date Calibrated	pH meter Calibrated	Time Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
SC-100B	12-6-11	1330	12-6-11	1335	METER #1	12-6-11	1:00	56.3	56.3	from Phelps	7.2
Notes:											
SC-700B	12-6-11	1330	12-6-11	1338	METER #1	12-6-11	1:00	56.3	56.3	from Phelps	7.9
Notes:											
SC-700B	12-13-11	1330	12-13-11	1334	METER #1	12-13-11	1:30	52.4	52.4	from Phelps	7.0
Notes:											
SC-700B	12-20-11	1330	12-20-11	1335	METER #1	12-20-11	1:00	55.9	55.9	from Phelps	7.1
Notes:											
SC-700B	12-22-11	1030	12-22-11	1034	METER #1	12-22-11	1:00	55.9	55.9	from Phelps	7.1
Notes:											
Reminder: WDR Required pH Range for the Effluent (SC-700B) is: 6.5 - 8.4											