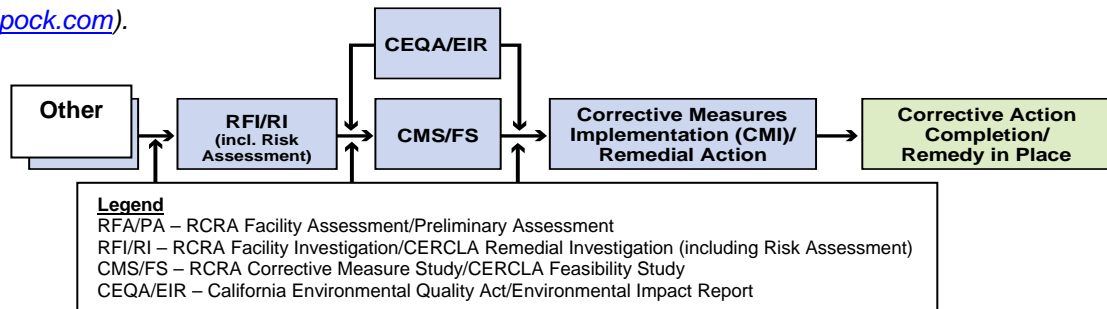


# Topock Project Executive Abstract

<p>Document Title:</p> <p>Topock IM-3 Third Quarter 2011 Monitoring Report</p> <p>Submitting Agency/Author: U.S. Department of the Interior and Regional Water Quality Control Board</p> <p>Final Document? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Date of Document: October 14, 2011</p> <p>Who Created this Document?: (i.e. PG&amp;E, DTSC, DOI, Other)</p> <p>PG&amp;E</p> <p>Document ID Number:</p> <p>PGE20111014A</p>
<p>Priority Status: <input type="checkbox"/> <b>HIGH</b> <input type="checkbox"/> <b>MED</b> <input checked="" type="checkbox"/> <b>LOW</b></p> <p>Is this time critical? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Action Required:</p> <p><input checked="" type="checkbox"/> Information Only <input type="checkbox"/> Review &amp; Comment</p> <p>Return to: _____</p> <p>By Date: _____</p> <p><input type="checkbox"/> Other / Explain:</p>
<p>Type of Document:</p> <p><input type="checkbox"/> Draft <input checked="" type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Memo</p> <p><input type="checkbox"/> Other / Explain:</p>	<p>What does this information pertain to?</p> <p><input type="checkbox"/> Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA)</p> <p><input type="checkbox"/> RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment)</p> <p><input type="checkbox"/> Corrective Measures Study (CMS)/Feasibility Study (FS)</p> <p><input type="checkbox"/> Corrective Measures Implementation (CMI)/Remedial Action</p> <p><input type="checkbox"/> California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR)</p> <p><input checked="" type="checkbox"/> Interim Measures</p> <p><input type="checkbox"/> Other / Explain:</p>
<p>What is the consequence of NOT doing this item? What is the consequence of DOING this item?</p> <p>Submittal of this report is a compliance requirement of the 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 Third 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.</p> <p>Written by: PG&amp;E</p>	
<p>Recommendations:</p> <p>This report is for your information only.</p>	
<p>How is this information related to the Final Remedy or Regulatory Requirements?</p> <p>The Topock IM-3 Third Quarter 2011 Monitoring Report is related to the Interim Measure. PG&amp;E is currently operating the IM-3 groundwater treatment system as authorized by the U.S. Department of the Interior (DOI) Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) as documented in Attachment A to the Letter Agreement issued July 26, 2011 from the Colorado River Basin Regional Water Quality Control Board (Regional Water Board) to DOI, and the subsequent Letter of Concurrence issued August 18, 2011 from DOI to the Regional Water Board.</p>	
<p>Other requirements of this information?</p> <p>None.</p>	

Related Reports and Documents:

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



Version 9



**Pacific Gas and  
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**Curt Russell**  
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October 14, 2011

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Robert Perdue  
Executive Officer  
California Regional Water Quality Control Board  
Colorado River Basin Region  
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Palm Desert, CA 92260

**Subject: Topock IM-3 Third Quarter 2011 Monitoring Report  
PG&E Topock Compressor Station, Needles, California  
Interim Measure No. 3 Groundwater Treatment System  
(Document ID: PGE20111014A)**

Dear Ms. Innis and Mr. Perdue:

Enclosed is the Third Quarter 2011 Monitoring 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.

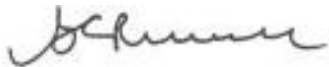
PG&E is currently operating the IM-3 groundwater treatment system as authorized by the U.S. Department of the Interior (DOI) Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) as documented in Attachment A to the Letter Agreement issued July 26, 2011 from the Regional Water Board to DOI, and the subsequent Letter of Concurrence issued 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 405,000,000 gallons of water and removed 5,039 pounds of total chromium through September 30, 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,

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

Curt Russell  
Topock Site Manager

Enclosures:

Topock IM-3 Third Quarter 2011 Monitoring 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



---

# **Third Quarter 2011 Monitoring Report Interim Measure No. 3 Groundwater Treatment System**

Document ID: PGE20111014A

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

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

on behalf of  
**Pacific Gas and Electric Company**

October 14, 2011

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

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

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

Prepared for


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

on behalf of

**Pacific Gas and Electric Company**

**October 14, 2011**

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



**Dennis Fink, P.E.  
Project Engineer**



# Contents

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	Page
<b>1.0 Introduction.....</b>	<b>1-1</b>
<b>2.0 Sampling Station Locations.....</b>	<b>2-1</b>
<b>3.0 Description of Activities .....</b>	<b>3-1</b>
<b>4.0 Groundwater Treatment System Flow Rates .....</b>	<b>4-1</b>
4.1 July 2011.....	4-1
4.2 August 2011.....	4-2
4.3 September 2011 .....	4-3
<b>5.0 Sampling and Analytical Procedures .....</b>	<b>5-1</b>
<b>6.0 Analytical Results.....</b>	<b>6-1</b>
<b>7.0 Conclusions .....</b>	<b>7-1</b>
<b>8.0 Certification.....</b>	<b>8-1</b>

## 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

**Appendix**

A	Third Quarter 2011 Laboratory Analytical Reports
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# Acronyms and Abbreviations

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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 for hydraulic control of the plume boundaries in the Colorado River floodplain, treatment of extracted groundwater, and treated groundwater injection into injection wells located on San Bernardino County Assessor's Parcel No. 650-151-06. The groundwater extraction, treatment, and injection systems collectively are referred to as Interim Measure No. 3 (IM-3). Figure 1 provides a map of the project area. All figures are located at the end of this report.

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

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

**This report covers monitoring activities related to operation of the IM-3 groundwater treatment system during the Third Quarter 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

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

## 3.0 Description of Activities

---

The treatment system was initially operated between July 25 and July 28, 2005 for the Waste Discharge Requirement (WDR)-mandated startup phase. Discharge to the injection wells was initiated July 31, 2005 after successfully completing the startup phase in accordance with Order No. R7-2004-0103. Full-time operation of the treatment system commenced in August 2005. Since initial operation in July 2005, the IM-3 groundwater treatment system has treated approximately 405,000,000 gallons of water and removed 5,039 pounds of total chromium through September 30, 2011.

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

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

During the Third Quarter 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 wells TW-2D and TW-2S were not operated during Third Quarter 2011. The operational run time for the IM groundwater extraction system (combined or individual pumping), by month, was approximately:

- 94.8 percent during July 2011
- 87.6 percent during August 2011
- 99.4 percent during September 2011

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

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

Activities during the Third Quarter 2011 included planned shutdowns in July, August, and September as detailed in Section 4.



## 4.0 Groundwater Treatment System Flow Rates

---

The Third Quarter 2011 treatment system monthly average flow rates (influent, effluent, and reverse osmosis 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-RP-10-10-03). The treatment system effluent flow rate was measured by flow meters in the piping into injection wells IW-2 and IW-3 (Figure TP-RP-10-10-11). The RO concentrate flow rate was measured by a flow meter at the piping carrying water from RO concentrate tank T-701 to the truck load-out station (Figure PR-10-03 and PR-10-04).

The IM-3 facility treated approximately 16,698,530 gallons of extracted groundwater during the Third Quarter 2011. The IM-3 facility also treated approximately 2,525 gallons of water generated from the groundwater monitoring program and 20,700 gallons of injection well backwashing/re-development water.

Four containers of solids (sludge) were transported offsite from the IM-3 facility during Third Quarter 2011.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 6.1 percent of downtime during Third Quarter 2011) are summarized below. The times shown are in Pacific Standard Time (PST) to be consistent with other data collected (e.g., water level data) at the site.

### 4.1 July 2011

During July 2011, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2S and TW-2D were not operated during July 2011. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 94.8 percent during the July 2011 reporting period.

The IM-3 facility treated approximately 5,710,722 gallons of extracted groundwater during July 2011. The IM-3 facility treated 655 gallons of water generated from the groundwater monitoring program and 5,400 gallons of injection well backwashing/re-development water. No containers of solids from the IM-3 facility were transported offsite during July 2011.

Periods of planned and unplanned extraction system down time (that together resulted in approximately 5.2 percent downtime during July 2011) are summarized below.

- **July 3, 2011 (unplanned):** The extraction well system was offline from 9:40 p.m. to 9:52 p.m. due to a 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 a 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 13<sup>th</sup> to 12:10 a.m. on July 14<sup>th</sup> and from 12:12 a.m. to 12:58 a.m. on July 14<sup>th</sup> 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 27<sup>th</sup> and from 7:14 a.m. on July 27<sup>th</sup> to 12:46 p.m. on July 28<sup>th</sup> 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 a City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 8 minutes.

## 4.2 August 2011

During August 2011, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2S and TW-2D were not operated during August 2011. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 87.6 percent during the August 2011 reporting period.

The IM-3 facility treated approximately 5,263,298 gallons of extracted groundwater during August 2011. The IM-3 facility treated 350 gallons of water generated from the groundwater monitoring program and 13,500 gallons of injection well backwashing/re-development water. Two containers of solids from the IM-3 facility were transported offsite during August 2011.

Periods of planned and unplanned extraction system down time (that together resulted in approximately 12.4 percent downtime during August 2011) are summarized below.

- **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 a 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. due to 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 scheduled 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 15<sup>th</sup> to 12:38 p.m. on August 18<sup>th</sup>, from 12:48 p.m. to 1:34 p.m. on August 18<sup>th</sup>, and from 4:18 p.m. to 7:16 p.m. on August 18<sup>th</sup> for a scheduled maintenance outage. 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.

## 4.3 September 2011

During September 2011, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2S and TW-2D were not operated during September 2011. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 99.4 percent during the September 2011 reporting period.

The IM-3 facility treated approximately 5,724,510 gallons of extracted groundwater during September 2011. The IM-3 facility treated 1,520 gallons of water generated from the groundwater monitoring program and 1,800 gallons of injection well backwashing/re-development water. Two containers of solids from the IM-3 facility were transported offsite during September 2011.

Periods of planned and unplanned extraction system down time (that together resulted in approximately 0.6 percent downtime during September 2011) are summarized below.

- **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 a 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 the leak detection system after a 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.

## 5.0 Sampling and Analytical Procedures

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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 Third 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.

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

## 6.0 Analytical Results

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Laboratory reports for samples collected in Third Quarter 2011 were prepared by certified analytical laboratories, and are presented in Appendix A.

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

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

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

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

## 7.0 Conclusions

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

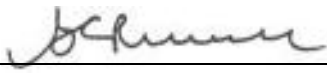
In addition, no incidents of non-compliance were identified during the reporting period. No events that caused an immediate or potential threat to human health or the environment, or new releases of hazardous waste or hazardous waste constituents, or new solid waste management units were identified during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

## 8.0 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: October 14, 2011



## Tables

---

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

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

**Note:**

### = Sequential sample identification number at each sample station.

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

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

<b>Parameter</b>	<b>System Influent<sup>a,b</sup> (gpm)</b>	<b>System Effluent<sup>b</sup> (gpm)</b>	<b>Reverse Osmosis Concentrate<sup>b</sup> (gpm)</b>
July 2011 Average Monthly Flowrate	127.9	125.0	2.0
August 2011 Average Monthly Flowrate	117.9	114.7	2.3
September 2011 Average Monthly Flowrate	132.5	130.0	1.9

**Notes:**

gpm: gallons per minute

<sup>a</sup> Extraction wells TW-3D and PE-1 were operated during the Third Quarter 2011. Extraction wells TW-2D and TW-2S were not operated during the Third Quarter 2011.

<sup>b</sup> The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during the Third Quarter 2011 is approximately 0.64 percent.

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

<b>Parameter</b>	<b>Sample Collection Dates</b>	<b>Results</b>
Influent	July 5, 2011	See Table 4
	August 2, 2011	
	September 6, 2011	
Effluent	July 5, 2011	See Table 5
	July 12, 2011	
	July 19, 2011	
	July 26, 2011	
	August 2, 2011	
	August 9, 2011	
	August 15, 2011	
	August 19, 2011	
	August 23, 2011	
	August 30, 2011	
	September 6, 2011	
	September 13, 2011	
	September 20, 2011	
	September 27, 2011	
Reverse Osmosis Concentrate	July 5, 2011	See Table 6
Sludge <sup>a</sup>	July 5, 2011	See Table 7

**Notes:**

<sup>a</sup> 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 <sup>a</sup>  
Third Quarter 2011 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Monthly																								
Sample ID	Date	Analytes Units <sup>b</sup>  MDL	TDS	Turbidity	Specific Conductance	Field <sup>c</sup> pH	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate (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	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L
			0.400	0.0140	0.0380	---	0.100	2.20	2.80	0.0020	0.120	0.280	0.200	0.0015	0.120	0.0250	0.110	0.280	0.270	0.0750	0.0550	0.00020	0.500	1.30	1.30	
SC-100B-WDR-316	7/5/2011		4720	0.107	7840	7.2	810	852	ND (50.0)	ND (0.500)	ND (10.0)	3.40	26.0	1.04	ND (5.00)	2.68	ND (10.0)	9.50	20.9	ND (10.0)	3.04	ND (0.0050)	562	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-320	8/2/2011		4590	ND (0.100)	7800	7.3	877	887	ND (50.0)	ND (0.500)	ND (10.0)	3.50	26.5	1.00	ND (5.00)	2.68	ND (10.0)	8.60	24.7	ND (10.0)	3.09	ND (0.0050)	533	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-325	9/6/2011		4590	0.180	7810	7.2	828	860	ND (50.0)	1.51	ND (10.0)	3.40	25.6	1.04	ND (5.00)	2.65	ND (10.0)	8.80	20.4	ND (10.0)	3.22	ND (0.0050)	527	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	

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

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

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

Effluent Limits <sup>b</sup>	Ave. Monthly Max Daily	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	
		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																	
<div>Analyses Units<sup>c</sup> MDL<sup>d</sup></div>	Date	TDS	Turbidity	Specific Conductance	Field pH <sup>e</sup>	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	µg/L	
		0.400	0.0140	0.0380	---	0.0550	0.0220	2.80	0.0020	0.120	0.280	0.200	0.0015	0.120	0.0250	0.110	0.280	0.270	0.0750	0.0550	0.00020	0.500	1.30	1.30		
Sample ID																										
SC-700B-WDR-316	7/5/2011	4180	ND (0.100)	7090	7.10	ND (1.00)	ND (0.200)	ND (50.0)	ND (0.500)	ND (10.0)	ND (1.00)	ND (10.0)	1.01	ND (5.00)	1.89	ND (10.0)	2.00	18.2	ND (10.0)	2.73	ND (0.0050)	494	ND (20.0)	ND (10.0)		
	RL	125	0.100	2.00	---	1.00	0.200	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-700B-WDR-317	7/12/2011	4280	ND (0.100)	7210	7.20	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	ND (1.00)	---	---	---	---	---	---	---		
	RL	125	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-318	7/19/2011	4270	ND (0.100)	7220	7.00	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	1.60	---	---	---	---	---	---	---		
	RL	125	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-319	7/26/2011	4380	ND (0.100)	7410	7.10	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	ND (1.00)	---	---	---	---	---	---	---		
	RL	125	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-320	8/2/2011	4360	ND (0.100)	7400	7.00	2.10	1.50	ND (50.0)	1.58	ND (10.0)	ND (1.00)	10.2	0.988	ND (5.00)	2.42	ND (10.0)	3.60	17.0	ND (10.0)	3.94	ND (0.0050)	469	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	12.5	20.0	10.0		
SC-700B-WDR-321	8/9/2011	4120	0.184	7190	7.10	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	1.60	---	---	---	---	---	---	---		
	RL	125	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-322	8/15/2011	4020	ND (0.100)	6930	7.30	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	1.90	---	---	---	---	---	---	---		
	RL	125	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-322B	8/19/2011	3940	ND (0.100)	6910	7.20	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	6.70	---	---	---	---	---	---	---		
	RL	125	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-323	8/23/2011	4130	0.136	7110	7.00	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	3.10	---	---	---	---	---	---	---		
	RL	125	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-324	8/30/2011	4100	0.109	7200	6.90	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
	RL	125	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-325	9/6/2011	4660	0.100	7270	7.30	1.50	ND (0.200)	ND (50.0)	1.01	ND (10.0)	ND (1.00)	13.2	1.02	ND (5.00)	1.94	ND (10.0)	5.70	16.9	ND (10.0)	2.97	ND (0.0050)	492	ND (20.0)	ND (10.0)		
	RL	125	0.100	2.00	---	1.00	0.200	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-700B-WDR-326	9/13/2011	4040	0.124	7130	6.90	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	5.00	---	---	---	---	---	---	---		
	RL	125	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-327	9/20/2011	4240	0.104	7440	7.00	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	2.40	---	---	---	---	---	---	---		
	RL	125	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-328	9/27/2011	4380	0.109	7490	7.10	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	8.00	---	---	---	---	---	---	---		
	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<sup>a</sup>  
*Third 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

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

TABLE 6  
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)  
Reverse Osmosis Concentrate Monitoring Results <sup>a</sup>  
Third Quarter 2011 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Quarterly																						
Sample ID	Date	Analytes	TDS	Specific Conductance	Field <sup>c</sup>	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		Units <sup>b</sup>	mg/L	µmhos/cm	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		MDL	0.434	0.0380	---	0.00020	0.00022	0.00024	0.00057	0.00040	0.0018	0.00094	0.00097	0.00025	0.0500	0.00022	0.00054	0.00040	0.00015	0.00068	0.00035	0.00025	0.00074	0.0025
SC-701-WDR-316	7/5/2011		30100	42400	7.0	0.00490	ND (0.0021)	ND (0.0100)	ND (0.0020)	0.0770	ND (0.0100)	ND (0.0030)	ND (0.0050)	ND (0.0050)	15.5	ND (0.0100)	0.130	ND (0.0020)	0.0111	0.0222	ND (0.0050)	ND (0.0020)	ND (0.0100)	ND (0.0100)
RL			833	2.00	---	0.0020	0.0021	0.0100	0.0020	0.0100	0.0100	0.0030	0.0050	0.0050	1.00	0.0100	0.0100	0.0020	0.0100	0.0100	0.0050	0.0020	0.0100	0.0100

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

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



TABLE 7  
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)  
Sludge Monitoring Results<sup>a</sup>  
Third Quarter 2011 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Quarterly																		
<div><div></div><div></div><div></div></div>	Analytes	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
	Units <sup>b</sup>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	MDL	0.0117	0.00012	0.0059	0.0078	0.0045	0.0036	0.0055	0.0053	0.0055	0.0050	0.0094	0.0080	0.00020	0.0051	0.0064	0.0044	0.0027	0.0035	0.0078
Sample ID	Date																			
SC-Sludge-WDR-316	7/5/2011	4900	34.7	34.1	ND (2.06)	70.2	ND (10.3)	ND (2.06)	7.48	55.2	24.7	8.53	9.75	0.125	20.7	ND (2.06)	ND (2.06)	ND (2.06)	125	54.4
RL		10.3	4.15	2.06	2.06	2.06	10.3	2.06	2.06	2.06	4.15	2.06	2.06	0.103	2.06	2.06	2.06	2.06	2.06	2.06

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

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

TABLE 8

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

Monitoring Information

Third 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-316	Ron Phelps	7/5/2011	3:00:00 PM	TLI	EPA 120.1	SC	7/7/2011	Gautam Savani
					TLI	EPA 200.7	B	7/13/2011	Ethel Suico
					TLI	EPA 200.7	FE	7/13/2011	Ethel Suico
					TLI	EPA 200.8	AL	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	AS	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MO	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	ZN	7/10/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	7/7/2011	Sonya Bersudsky
					TLI	EPA 300.0	FL	7/6/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	7/6/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	7/6/2011	Giawad Ghenniwa
					FIELD	HACH	PH	7/5/2011	Ron Phelps
					TLI	SM2130B	TRB	7/6/2011	Gautam Savani
					TLI	SM2540C	TDS	7/7/2011	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	7/6/2011	Maria Mangarova
					TLI	SM4500NO2B	NO2N	7/6/2011	Jenny Tankunakorn
SC-100B	SC-100B-WDR-320	Ron Phelps	8/2/2011	2:00:00 PM	TLI	EPA 120.1	SC	8/5/2011	Gautam Savani
					TLI	EPA 200.7	AL	8/5/2011	Ethel Suico
					TLI	EPA 200.7	B	8/5/2011	Ethel Suico
					TLI	EPA 200.7	FE	8/5/2011	Ethel Suico
					TLI	EPA 200.7	FETD	8/5/2011	Ethel Suico
					TLI	EPA 200.8	AS	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MND	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MO	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	8/5/2011	Katia Kiarashpoor

TABLE 8

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

Monitoring Information

Third 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-320	Ron Phelps	8/2/2011	2:00:00 PM	TLI	EPA 200.8	PB	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	ZN	8/5/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	8/8/2011	Sonya Bersudsky
					TLI	EPA 300.0	FL	8/3/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	8/3/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	8/3/2011	Giawad Ghenniwa
					FIELD	HACH	PH	8/2/2011	Ron Phelps
					TLI	SM 2320B	ALKB	8/5/2011	Kim Luck
					TLI	SM 2320B	ALKC	8/5/2011	Kim Luck
					TLI	SM2130B	TRB	8/3/2011	Gautam Savani
					TLI	SM2540C	TDS	8/9/2011	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	8/4/2011	Maria Mangarova
					TLI	SM4500NO2B	NO2N	8/4/2011	Jenny Tankunakorn
SC-100B	SC-100B-WDR-325	Ron Phelps	9/6/2011	2:00:00 PM	TLI	EPA 120.1	SC	9/9/2011	Gautam Savani
					TLI	EPA 200.7	AL	9/8/2011	Ethel Suico
					TLI	EPA 200.7	B	9/8/2011	Ethel Suico
					TLI	EPA 200.7	FE	9/8/2011	Ethel Suico
					TLI	EPA 200.7	FETD	9/8/2011	Ethel Suico
					TLI	EPA 200.7	ZN	9/28/2011	Ethel Suico
					TLI	EPA 200.8	AS	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MND	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MO	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	9/29/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	9/8/2011	Maksim Gorbunov
					TLI	EPA 300.0	FL	9/7/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	9/7/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	9/7/2011	Giawad Ghenniwa
					FIELD	HACH	PH	9/6/2011	Ron Phelps
					TLI	SM 2320B	ALKB	9/12/2011	Kim Luck

TABLE 8

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

Monitoring Information

Third 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-325	Ron Phelps	9/6/2011	2:00:00 PM	TLI	SM 2320B	ALKC	9/12/2011	Kim Luck
					TLI	SM2130B	TRB	9/7/2011	Gautam Savani
					TLI	SM2540C	TDS	9/7/2011	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	9/7/2011	Maria Mangarova
					TLI	SM4500NO2B	NO2N	9/7/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-316	Ron Phelps	7/5/2011	3:00:00 PM	TLI	EPA 120.1	SC	7/7/2011	Gautam Savani
					TLI	EPA 200.7	B	7/13/2011	Ethel Suico
					TLI	EPA 200.7	FE	7/13/2011	Ethel Suico
					TLI	EPA 200.8	AL	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	AS	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MO	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	7/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	ZN	7/10/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	7/7/2011	Sonya Bersudsky
					TLI	EPA 300.0	FL	7/6/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	7/6/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	7/6/2011	Giawad Ghenniwa
					FIELD	HACH	PH	7/5/2011	Ron Phelps
					TLI	SM2130B	TRB	7/6/2011	Gautam Savani
					TLI	SM2540C	TDS	7/7/2011	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	7/6/2011	Maria Mangarova
					TLI	SM4500NO2B	NO2N	7/6/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-317	Ron Phelps	7/12/2011	2:00:00 PM	TLI	EPA 120.1	SC	7/13/2011	Gautam Savani
					TLI	EPA 200.8	CR	7/18/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	7/18/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	7/13/2011	Sonya Bersudsky
					FIELD	HACH	PH	7/12/2011	Ron Phelps
					TLI	SM2130B	TRB	7/13/2011	Gautam Savani
					TLI	SM2540C	TDS	7/13/2011	Jenny Tankunakorn

TABLE 8

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

Monitoring Information

Third 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-318	Ron Phelps	7/19/2011	2:30:00 PM	TLI	EPA 120.1	SC	7/20/2011	Gautam Savani
					TLI	EPA 200.8	CR	7/25/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	7/25/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	7/20/2011	Sonya Bersudsky
					FIELD	HACH	PH	7/19/2011	Ron Phelps
					TLI	SM2130B	TRB	7/20/2011	Gautam Savani
					TLI	SM2540C	TDS	7/21/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-319	C.Knight	7/26/2011	2:05:00 PM	TLI	EPA 120.1	SC	7/27/2011	Gautam Savani
					TLI	EPA 200.8	CR	7/28/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	7/28/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	7/27/2011	Sonya Bersudsky
					FIELD	HACH	PH	7/26/2011	C.Knight
					TLI	SM2130B	TRB	7/27/2011	Gautam Savani
					TLI	SM2540C	TDS	7/28/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-320	Ron Phelps	8/2/2011	2:00:00 PM	TLI	EPA 120.1	SC	8/5/2011	Gautam Savani
					TLI	EPA 200.7	AL	8/5/2011	Ethel Suico
					TLI	EPA 200.7	B	8/5/2011	Ethel Suico
					TLI	EPA 200.7	FE	8/5/2011	Ethel Suico
					TLI	EPA 200.8	AS	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MO	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	8/5/2011	Katia Kiarashpoor
					TLI	EPA 200.8	ZN	8/5/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	8/8/2011	Sonya Bersudsky
					TLI	EPA 300.0	FL	8/3/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	8/3/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	8/3/2011	Giawad Ghenniwa
					FIELD	HACH	PH	8/2/2011	Ron Phelps
					TLI	SM2130B	TRB	8/3/2011	Gautam Savani
					TLI	SM2540C	TDS	8/9/2011	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	8/4/2011	Maria Mangarova

TABLE 8

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

Monitoring Information

Third 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-320	Ron Phelps	8/2/2011	2:00:00 PM	TLI	SM4500NO2B	NO2N	8/4/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-321	Ron Phelps	8/9/2011	1:30:00 PM	TLI	EPA 120.1	SC	8/10/2011	Gautam Savani
					TLI	EPA 200.8	CR	8/17/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	8/17/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	8/10/2011	Sonya Bersudsky
					FIELD	HACH	PH	8/9/2011	Ron Phelps
					TLI	SM2130B	TRB	8/10/2011	Gautam Savani
					TLI	SM2540C	TDS	8/12/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-322	Ron Phelps	8/15/2011	6:00:00 AM	TLI	EPA 120.1	SC	8/16/2011	Gautam Savani
					TLI	EPA 200.8	CR	9/9/2011	Hope Trinidad
					TLI	EPA 200.8	MN	9/9/2011	Hope Trinidad
					TLI	EPA 218.6	CR6	8/16/2011	Sonya Bersudsky
					FIELD	HACH	PH	8/15/2011	Ryan Phelps
					TLI	SM2130B	TRB	8/16/2011	Gautam Savani
					TLI	SM2540C	TDS	8/17/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-322B	C.Knight	8/19/2011	1:18:00 PM	TLI	EPA 120.1	SC	8/22/2011	Gautam Savani
					TLI	EPA 200.8	CR	8/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	8/24/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	8/22/2011	Sonya Bersudsky
					FIELD	HACH	PH	8/19/2011	C.Knight
					TLI	SM2130B	TRB	8/20/2011	Kim Luck
					TLI	SM2540C	TDS	8/22/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-323	C.Knight	8/23/2011	12:16:00 PM	TLI	EPA 120.1	SC	8/26/2011	Gautam Savani
					TLI	EPA 200.8	CR	9/2/2011	Hope Trinidad
					TLI	EPA 200.8	MN	9/2/2011	Hope Trinidad
					TLI	EPA 218.6	CR6	8/25/2011	Sonya Bersudsky
					FIELD	HACH	PH	8/23/2011	C.Knight
					TLI	SM2130B	TRB	8/24/2011	Gautam Savani
					TLI	SM2540C	TDS	8/29/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-324	Ron Phelps	8/30/2011	9:30:00 AM	TLI	EPA 120.1	SC	8/31/2011	Gautam Savani
					TLI	EPA 200.8	CR	9/6/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	9/6/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	8/31/2011	Sonya Bersudsky
					FIELD	HACH	PH	8/30/2011	Ron Phelps

TABLE 8

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

Monitoring Information

Third 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-324	Ron Phelps	8/30/2011	9:30:00 AM	TLI	SM2130B	TRB	8/31/2011	Gautam Savani
					TLI	SM2540C	TDS	8/31/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-325	Ron Phelps	9/6/2011	2:00:00 PM	TLI	EPA 120.1	SC	9/9/2011	Gautam Savani
					TLI	EPA 200.7	AL	9/8/2011	Ethel Suico
					TLI	EPA 200.7	B	9/8/2011	Ethel Suico
					TLI	EPA 200.7	FE	9/8/2011	Ethel Suico
					TLI	EPA 200.7	ZN	9/28/2011	Ethel Suico
					TLI	EPA 200.8	AS	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MO	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	9/15/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	9/29/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	9/8/2011	Maksim Gorbunov
					TLI	EPA 300.0	FL	9/7/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	9/7/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	9/7/2011	Giawad Ghenniwa
					FIELD	HACH	PH	9/6/2011	Ron Phelps
					TLI	SM2130B	TRB	9/7/2011	Gautam Savani
					TLI	SM2540C	TDS	9/7/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-326	Ron Phelps	9/13/2011	10:00:00 AM	TLI	SM4500NH3D	NH3N	9/7/2011	Maria Mangarova
					TLI	SM4500NO2B	NO2N	9/7/2011	Jenny Tankunakorn
					TLI	EPA 120.1	SC	9/14/2011	Gautam Savani
					TLI	EPA 200.8	CR	9/21/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	9/21/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	9/14/2011	Sonya Bersudsky
					FIELD	HACH	PH	9/13/2011	Ron Phelps
SC-700B	SC-700B-WDR-327	Ron Phelps	9/20/2011	1:00:00 PM	TLI	SM2130B	TRB	9/14/2011	Gautam Savani
					TLI	SM2540C	TDS	9/14/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-327	Ron Phelps	9/20/2011	1:00:00 PM	TLI	EPA 120.1	SC	9/22/2011	Gautam Savani
					TLI	EPA 200.8	CR	10/4/2011	Maksim Gorbunov
					TLI	EPA 200.8	MN	10/4/2011	Maksim Gorbunov

TABLE 8

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

Monitoring Information

Third 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-327	Ron Phelps	9/20/2011	1:00:00 PM	TLI	EPA 218.6	CR6	9/21/2011	Sonya Bersudsky
					FIELD	HACH	PH	9/20/2011	Ron Phelps
					TLI	SM2130B	TRB	9/21/2011	Gautam Savani
					TLI	SM2540C	TDS	9/26/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-328	Ron Phelps	9/27/2011	10:00:00 AM	TLI	EPA 120.1	SC	9/28/2011	Gautam Savani
					TLI	EPA 200.8	CR	10/4/2011	Maksim Gorbunov
					TLI	EPA 200.8	MN	10/4/2011	Maksim Gorbunov
					TLI	EPA 218.6	CR6	9/28/2011	Sonya Bersudsky
					FIELD	HACH	PH	9/27/2011	Ron Phelps
					TLI	SM2130B	TRB	9/28/2011	Gautam Savani
					TLI	SM2540C	TDS	9/29/2011	Jenny Tankunakorn
SC-701	SC-701-WDR-316	Ron Phelps	7/5/2011	3:00:00 PM	TLI	EPA 120.1	SC	7/7/2011	Gautam Savani
					TLI	EPA 200.8	AG	7/19/2011	Katia Kiarashpoor
					TLI	EPA 200.8	AS	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BE	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CD	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CO	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	HG	7/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MO	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	7/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SE	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	TL	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	V	7/11/2011	Katia Kiarashpoor
					TLI	EPA 200.8	ZN	7/11/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	7/7/2011	Sonya Bersudsky
					TLI	EPA 300.0	FL	7/8/2011	Giawad Ghenniwa
					FIELD	HACH	PH	7/5/2011	Ron Phelps
					TLI	SM2540C	TDS	7/7/2011	Jenny Tankunakorn
Phase Separator	SC-Sludge-WDR-316	Ron Phelps	7/5/2011	3:20:00 PM	TLI	EPA 300.0	FL	7/6/2011	Giawad Ghenniwa



TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)  
Monitoring Information  
*Third 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-316	Ron Phelps	7/5/2011	3:20:00 PM	TLI	EPA 300.0	NO3N	7/6/2011	Giawad Ghenniwa
					TLI	EPA 6010B	AG	7/12/2011	Ethel Suico
					TLI	EPA 6010B	AS	7/12/2011	Ethel Suico
					TLI	EPA 6010B	BA	7/12/2011	Ethel Suico
					TLI	EPA 6010B	CD	7/12/2011	Ethel Suico
					TLI	EPA 6010B	CO	7/12/2011	Ethel Suico
					TLI	EPA 6010B	CR	7/12/2011	Ethel Suico
					TLI	EPA 6010B	CU	7/12/2011	Ethel Suico
					TLI	EPA 6010B	MN	7/12/2011	Ethel Suico
					TLI	EPA 6010B	MO	7/12/2011	Ethel Suico
					TLI	EPA 6010B	NI	7/12/2011	Ethel Suico
					TLI	EPA 6010B	PB	7/12/2011	Ethel Suico
					TLI	EPA 6010B	SB	7/12/2011	Ethel Suico
					TLI	EPA 6010B	SE	7/12/2011	Ethel Suico
					TLI	EPA 6010B	TL	7/12/2011	Ethel Suico
					TLI	EPA 6010B	V	7/12/2011	Ethel Suico
					TLI	EPA 6010B	ZN	7/12/2011	Ethel Suico
					TLI	SM2540B	MOIST	7/7/2011	Gautam Savani
					TLI	SW 6020A	BE	7/14/2011	Katia Kiarashpoor
					TLI	SW 6020A	HG	7/15/2011	Katia Kiarashpoor
					TLI	SW 7199	CR6	7/19/2011	Sonya Bersudsky

TABLE 8

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

Monitoring Information

*Third 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&amp;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&amp;ID TP-PR-10-10-04).

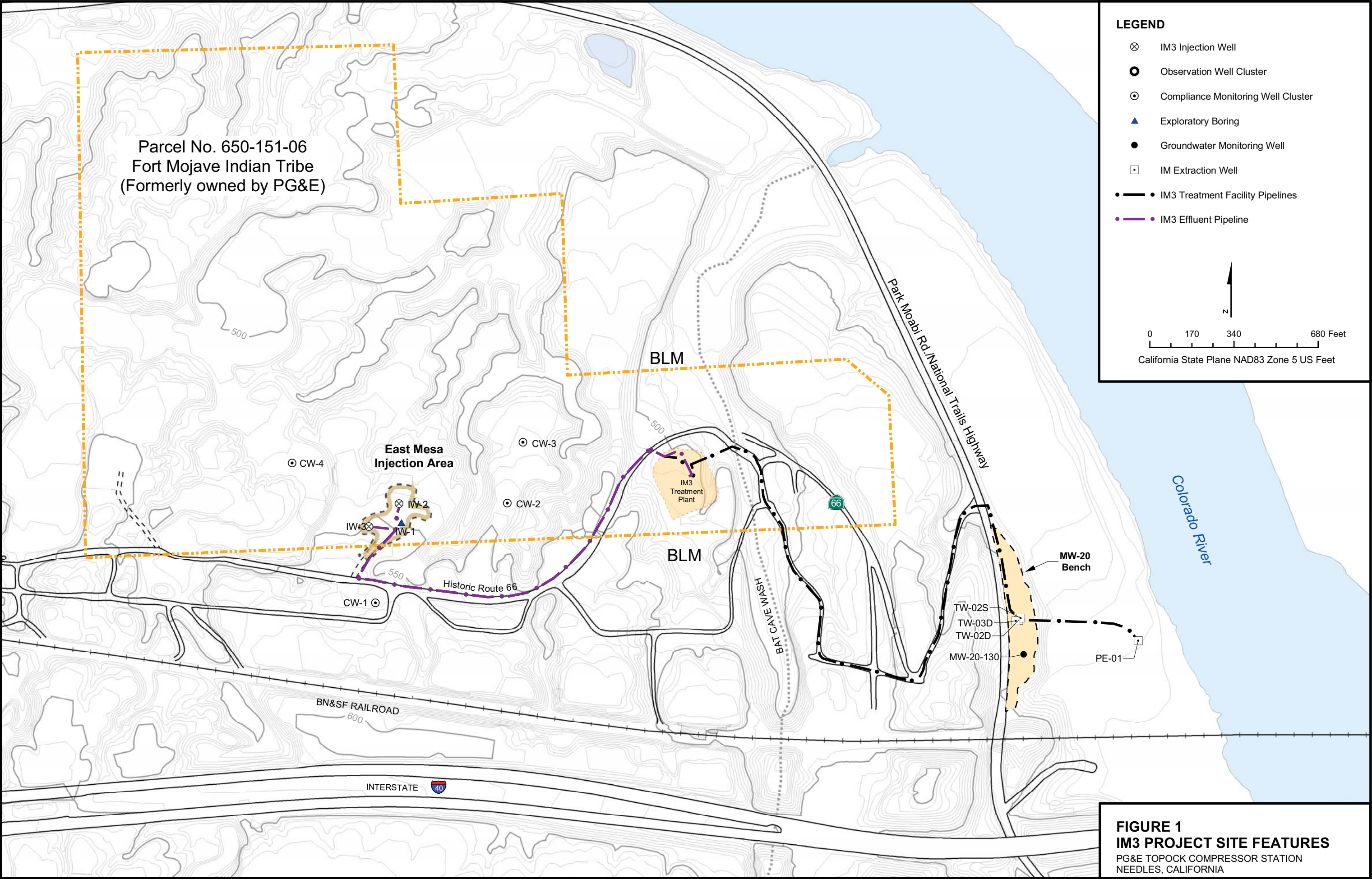
SC-701 = Sampling location for all reverse osmosis samples is tap on pipe T-701 (see attached P&amp;ID PR-10-04).

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

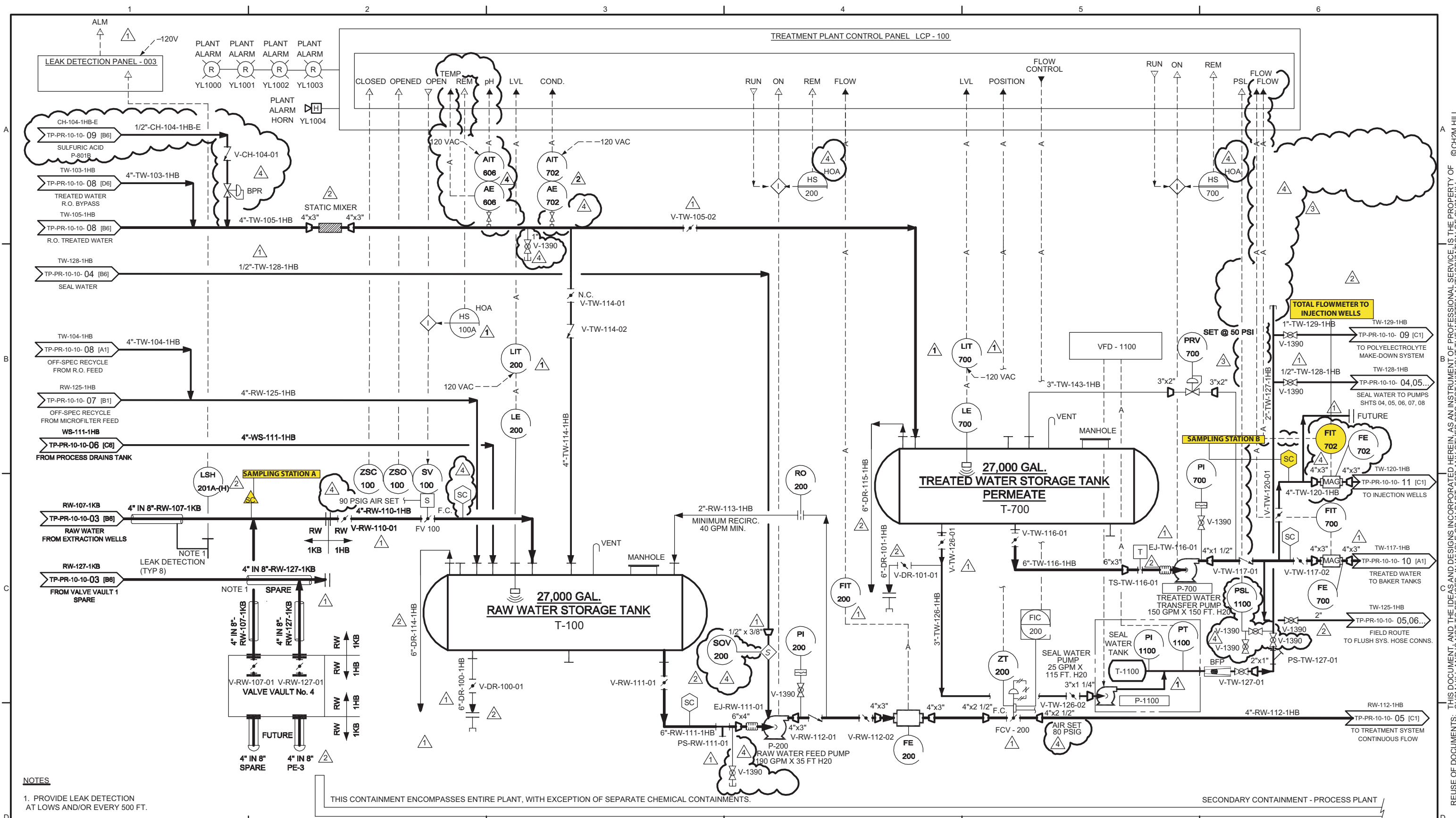
ALKB =	alkalinity, bicarb as CaCO <sub>3</sub>	MO =	molybdenum
ALKC =	alkalinity, carb as CaCO <sub>3</sub>	MOIST =	moisture
AL =	aluminum	NH <sub>3</sub> N =	ammonia (as N)
Ag =	silver	NI =	nickel
AS =	arsenic	NO <sub>2</sub> N =	nitrite (as N)
B =	boron	NO <sub>3</sub> N =	nitrate (as N)
BA =	barium	PB =	lead
BE =	beryllium	PH =	pH
CD =	cadmium	SB =	antimony
CO =	cobalt	SC =	specific conductance
CR =	chromium	SE =	selenium
CR6 =	hexavalent chromium	SO <sub>4</sub> =	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

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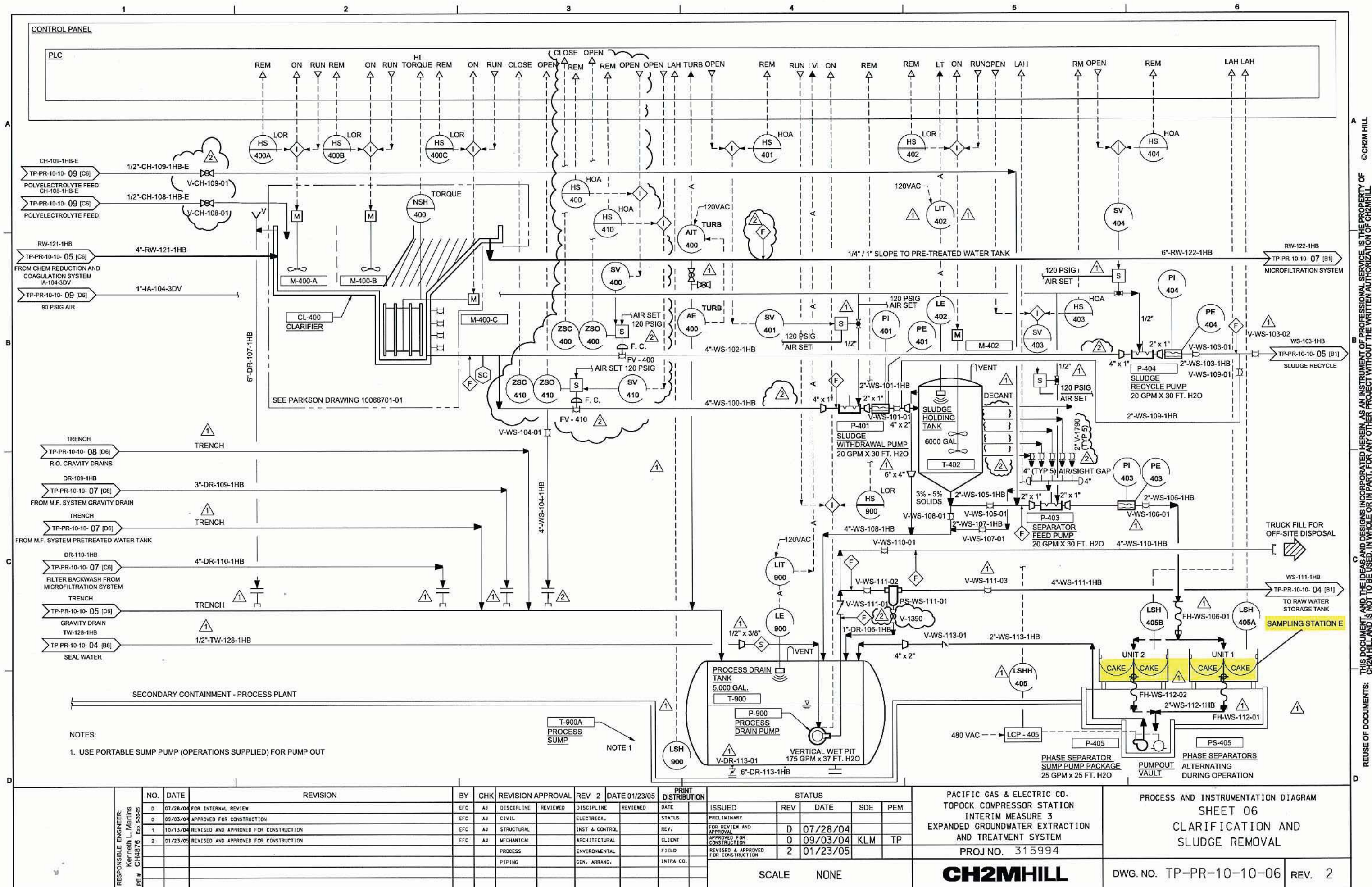


RESPONSIBLE ENGINEER: Kenneth L. Martins CH4876 PE #	NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 4	DATE 09/21/05	PRINT DISTRIBUTION	STATUS					PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 EXPANDED GROUNDWATER EXTRACTION AND TREATMENT SYSTEM PROJ NO. 315994	PROCESS AND INSTRUMENTATION DIAGRAM  SHEET 04 STORAGE AREA		
	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	/ /			CH2MHILL	DWG. NO. TP-PR-10-10-04	REV. 4
	4	09/21/05	REVISED PER AS-BUILT CONDITIONS	EFC	AJ	PIPING		GEN. ARRANG.		INTRA CO.								
										SCALE NONE								



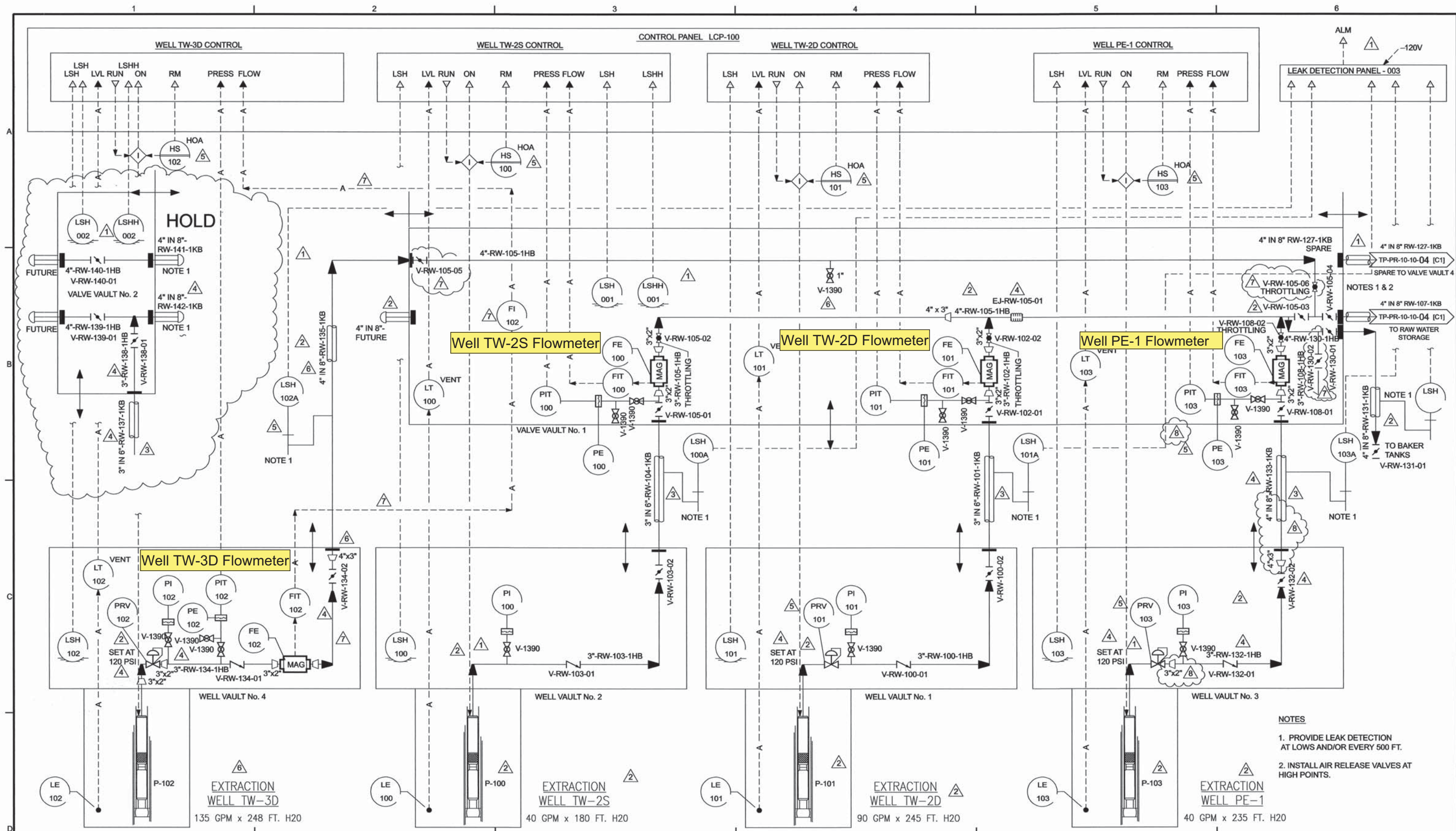






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- NOTES**
1. PROVIDE LEAK DETECTION AT LOWS AND/OR EVERY 500 FT.
  2. INSTALL AIR RELEASE VALVES AT HIGH POINTS.



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

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

SCALE NONE

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

**CH2MHILL**

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

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

FILENAME: tpr101003.dwg

PLOT DATE: 19-OCT-2005

PLOT TIME:

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**Appendix A**  
**Third Quarter 2011 Laboratory Analytical Reports**

# LABORATORY REPORT



*"dedicated to providing quality aquatic toxicity testing"*

**Date:** July 12, 2011

**Client:** Truesdail Laboratories, Inc.  
14201 Franklin Avenue  
Tustin, CA 92780  
Attn: Sean Condon

4350 Transport Street, Unit 107  
Ventura, CA 93003  
(805) 650-0546 FAX (805) 650-0756  
CA DOHS ELAP Cert. No.: 1775

**Laboratory No.:** A-11070701-001  
**Sample ID.:** 995929

**Sample Control:** The sample was received by ATL chilled, with the chain of custody record attached.


Date Sampled: 07/05/11  
Date Received: 07/07/11  
Date Tested: 07/08/11 to 07/12/11

**Sample Analysis:** The following analyses were performed on your sample:  
  
CCR Title 22 Fathead Minnow Hazardous Waste Screen Bioassay (Polisini & Miller 1988).  
  
Attached are the test data generated from the analysis of your sample.

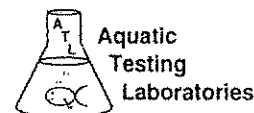
## Result Summary:

<u>Sample ID.</u>	<u>Results</u>
995929	PASS (LC50 > 750 mg/l)

**Quality Control:** Reviewed and approved by:

  
Joseph A. LeMay  
Laboratory Director

# FATHEAD MINNOW HAZARDOUS WASTE SCREEN BIOASSAY



Lab No.: A11070701-001

Client/ID: Tuesday 995929

## TEST SUMMARY

Species: *Pimephales promelas*.  
Fish weight (gm): av: 0.32; min: 0.27; max: 0.36.  
Reference Toxicant: SDS conducted monthly.  
Test chamber volume: 10 liters.  
Temperature: 20 +/- 2°C.  
Aeration: none, unless D.O. drops below 5.0 mg/l.  
Number of replicates: 2.  
Dilution water: Soft reconstituted water (40-48 mg/l CaCO<sub>3</sub>).

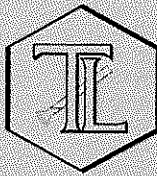
Source: In-Lab Culture.  
Regulations: CCR Title 22.  
Test Protocol: California F&G/DHS 1988.  
Endpoints: Survival at 96 hrs.  
Test type: Static.  
Feeding: None.  
Number of fish per chamber: 10.  
Photoperiod: 16/8 hrs light/dark.

## TEST DATA

	INITIAL				24 Hr				48 Hr				72 Hr				96 Hr			
Date/Time:	7-8-11 1000				7-9-11 1030				7-10-11 1000				7-11-11 1000				7-12-11 1030			
Analyst:	J				J				J				J				J			
	°C	DO	pH		°C	DO	pH	# D	°C	DO	pH	# D	°C	DO	pH	# D	°C	DO	pH	# D
Control A	20.6	8.1	7.9		20.9	8.2	7.8	0	21.1	8.1	7.7	0	21.1	8.1	7.7	0	21.0	8.1	8.0	0
Control B	20.6	8.3	7.8		20.9	8.4	7.6	0	21.1	8.1	7.7	0	21.1	8.1	7.6	0	21.0	8.7	7.8	0
400 mg/l A	20.6	7.8	8.2		20.9	8.4	7.8	0	21.1	8.0	7.9	0	21.0	8.1	7.8	0	20.8	8.7	8.0	0
400 mg/l B	20.6	8.1	8.2		20.9	8.1	8.0	0	21.1	8.0	8.0	0	21.0	8.2	7.9	0	21.1	8.6	8.0	0
750 mg/l A	20.6	8.2	8.1		20.9	8.7	8.0	0	21.1	8.2	8.1	0	21.1	8.5	8.0	0	21.0	8.6	8.0	0
750 mg/l B	20.6	8.4	8.0		21.0	8.8	8.0	0	21.0	8.2	8.1	0	21.0	8.5	7.9	0	21.1	8.9	8.0	0
Comments: Extraction method: Mechanical shaking <u>X</u> . None (aqueous solution) <u>—</u> . Dissolved Oxygen (DO) readings in mg/l O <sub>2</sub> . Test Aerated: <u>Yes</u> / No																				

	CONTROL		HIGH CONCENTRATION		Total Number Dead	
	Alkalinity	Hardness	Alkalinity	Hardness	Control	
Initial	33 mg/l CaCO <sub>3</sub>	43 mg/l CaCO <sub>3</sub>	33 mg/l CaCO <sub>3</sub>	44 mg/l CaCO <sub>3</sub>	400 mg/l	0 / 20
Final	33 mg/l CaCO <sub>3</sub>	43 mg/l CaCO <sub>3</sub>	53 mg/l CaCO <sub>3</sub>	63 mg/l CaCO <sub>3</sub>	750 mg/l	0 / 20

RESULTS (the checked result applies based on fish survival rates)		
✓	PASSED	LC50 > 750 mg/l (<40% dead in 750 mg/l conc.)
NA	FAILED	≥40% dead in 750 mg/l (close to passing - definitive test recommended)
NA	FAILED	LC50 < 400 mg/l (>60% dead in 400 mg/l conc.)



# TRUESDAIL LABORATORIES, INC.

14201 FRANKLIN AVENUE, TUSTIN, CALIFORNIA 92780

**ALERT !!**  
**Level III QC**

## Laboratory Transmittal Form

Date: 07/06/11 Page: 1 of 1

Laboratory: Aquatic Testing Laboratories

Attention: Joe LeMay

Address: 4350 Transport St. #107, Ph#:805-650- 0546

City: Ventura State: CA Zip: 93003

Please sign, date & return this form with the results, to:

**TRUESDAIL LABORATORIES, INC.**

Attn: Sean Condon

14201 Franklin Avenue, Tustin, California 92780

**Please include Truesdail Sample ID on your invoice**

Sample ID	Date	Time	Matrix	Tests/Methods Required												Container Qty.	Comments/Container Type
				Acute Aquatic Toxicity, 96 hr Acute (Bioassay)													
995929	7/5/11	15:20	Sludge	X												1	4 oz /Glass
																1	Containers Total

### Type of Service:

☒ X Normal ( TAT)

☐ RUSH (5 day TAT)

☐ URGENT (24-48 hr. TAT)

☐ Results needed by: \_\_\_\_\_

### Sample Conditions:

Received on Ice? Yes/No

Sealed? Yes/No

Special Shipment/Handling or Storage Requirements:

Relinquished by: Luda Shabunina

Signature

Luda Shabunina

Printed Name

**TLI**

Company

07/06/11

Date

14:30

Time

Received by: Joe LeMay

Signature

Joe LeMay

Printed Name

ATL

Company

7/7/11

Date

0955

Time

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



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

August 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-316 PROJECT, SLUDGE  
MONITORING,  
TLI NO.: 995929

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-316 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 July 5, 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.

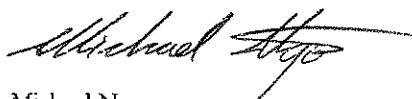
The reported result (Non-detect) for Total Beryllium is from a 100x dilution by SW 6020, although the reporting limit exceeds the contract required detection limit. At lower dilutions, the internal standards were failing due to possible matrix interference.

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.

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**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.:** 408401.01.DM

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TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
[www.truesdail.com](http://www.truesdail.com)

**Laboratory No.:** 995929

**Date:** August 1, 2011

**Collected:** July 5, 2011

**Received:** July 5, 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	Sonya Bersudsky





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

**Attention:** Shawn Duffy

**Project Name:** PG&E Topack Project  
**Project No.:** 408401.01.DM  
**P.O. No.:** 408401.01.DM

**Laboratory No.:** 995929  
**Date Received:** July 5, 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>
995929	SC-Sludge-WDR-316	15:20	34.7	24.7	ND	51.8

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.

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

**Laboratory No.:** 995929  
**Date Received:** July 5, 2011

**Attention:** Shawn Duffy  
**Project Name:** PG&E Topock Project  
**Project No.:** 408401.01.DM  
**P.O. No.:** 408401.01.DM

## Analytical Results Summary

**METALS ANALYSIS:** Total Metal Analyses as Requested

Lab I.D.	Sample ID	Date of Analysis: Time Coll.	Antimony SW 6010B	Arsenic SW 6010B	Barium SW 6010B	Beryllium SW 6020	Cadmium SW 6010B	Chromium SW 6010B	Cobalt SW 6010B	Copper SW 6010B	Lead SW 6010B
			07/12/11	07/12/11	07/12/11	07/14/11	07/12/11	07/12/11	07/12/11	07/12/11	07/12/11
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
995929	SC-Sludge-WDR-316	15:20	34.1	ND	70.2	ND	ND	4900	7.48	55.2	8.53

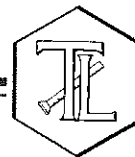
Lab I.D.	Sample ID	Date of Analysis: Time Coll.	Manganese SW 6010B	Mercury SW 6020	Molybdenum SW 6010B	Nickel SW 6010B	Selenium SW 6010B	Silver SW 6010B	Thallium SW 6010B	Vanadium SW 6010B	Zinc SW 6010B
			07/12/11	07/15/11	07/12/11	07/12/11	07/12/11	07/12/11	07/12/11	07/12/11	07/12/11
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
995929	SC-Sludge-WDR-316	15:20	358	0.125	9.75	20.7	ND	ND	ND	125	54.4

### NOTES:

ND: Not detected, or below limit of detection

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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.:** 408401.01.DM

**P.O. No.:** 408401.01.DM

**Prep. Batch:** 07CrH11J

**Laboratory No.:** 995929

**Date:** August 1, 2011

**Collected:** July 5, 2011

**Received:** July 5, 2011

**Prep/ Analyzed:** July 19, 2011

**Analytical Batch:** 07CrH11J

### Investigation:

Hexavalent Chromium by IC Using Method SW 7199

### Analytical Results Hexavalent Chromium

<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>
995929	SC-Sludge-WDR-316	15:20	12:39	mg/kg	5.00	4.15	34.7

### QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	995929	34.7	34.2	1.47%	≤ 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	995929	34.7	10.0	16.6	166	203	201	101%	75-125%	Yes
IMS	995929	34.7	50.0	36.1	1803	1660	1837	90.2%	75-125%	Yes
PDMS	995929	34.7	25.0	13.3	332	385	367	106%	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
MRCCS	2.03	2.00	102%	90% - 110%	Yes
MRCVS#1	2.02	2.00	101%	90% - 110%	Yes
MRCVS#2	2.00	2.00	100%	90% - 110%	Yes
LCS	1.94	2.00	97.1%	80% - 120%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

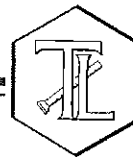
Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

*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.

# TRUESDAIL LABORATORIES, INC.

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**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.:** 408401.01.DM

**P.O. No.:** 408401.01.DM

## REPORT

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

**Laboratory No.:** 995929

**Date:** August 1, 2011

**Collected:** July 5, 2011

**Received:** July 5, 2011

**Prep/ Analyzed:** July 7, 2011

**Analytical Batch:** 07SOLID11A

**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>
995929	SC-Sludge-WDR-316	15:20	%	51.8

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	995929	51.8	53.4	3.05%	≤ 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  
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## 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.: 408401.01.DM

P.O. No.: 408401.01.DM

Laboratory No.: 995929

Date: August 1, 2011

Collected: July 5, 2011

Received: July 5, 2011

Prep/ Analyzed: July 6, 2011

Analytical Batch: 07AN11C

Investigation: Fluoride by Ion Chromatography using EPA 300.0

### Analytical Results Fluoride

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
995929	SC-Sludge-WDR-316	15:20	14:24	mg/kg	1.00	4.15	24.7

### QA/QC Summary

QC STD I.D.		Laboratory Number		Concentration		Duplicate Concentration		Relative Percent Difference		Acceptance limits		QC Within Control	
Duplicate		995935		ND		ND		0.00%		≤ 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	995935	0.00	1.00	2.00	2.00	2.14	2.00	107%	85-115%	Yes
MSD	995935	0.00	1.00	2.00	2.00	2.16	2.00	108%	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	4.10	4.00	103%	90% - 110%	Yes
MRCVS#1	3.13	3.00	104%	90% - 110%	Yes
MRCVS#2	3.13	3.00	104%	90% - 110%	Yes
MRCVS#3	3.13	3.00	104%	90% - 110%	Yes
LCS	4.09	4.00	102%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi, Manager  
Analytical Services

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# 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.: 408401.01.DM

P.O. No.: 408401.01.DM

Laboratory No.: 995929

Date: August 1, 2011

Collected: July 5, 2011

Received: July 5, 2011

Prep/ Analyzed: July 6, 2011

Analytical Batch: 07AN11C

Investigation: Nitrate as N by Ion Chromatography using EPA 300.0

### Analytical Results Nitrate as N

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
995929	SC-Sludge-WDR-316	15:20	14:24	mg/kg	1.00	8.31	ND

### QA/QC Summary

QC STD I.D.		Laboratory Number		Concentration		Duplicate Concentration		Relative Percent Difference		Acceptance limits		QC Within Control	
Duplicate		995935		ND		ND		0.00%		≤ 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	995935	0.00	1.00	2.00	2.00	2.22	2.00	111%	85-115%	Yes
MSD	995935	0.00	1.00	2.00	2.00	2.22	2.00	111%	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	4.00	4.00	100%	90% - 110%	Yes
MRCVS#1	2.99	3.00	99.6%	90% - 110%	Yes
MRCVS#2	2.99	3.00	99.8%	90% - 110%	Yes
MRCVS#3	2.99	3.00	99.6%	90% - 110%	Yes
LCS	4.00	4.00	100%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
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Mona Nassimi, Manager  
Analytical Services

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## 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.:** 408401.01.DM  
**P.O. No.:** 408401.01.DM

**Investigation:** Total Metal Analyses as Requested

**Laboratory No.:** 995929

**Reported:** August 1, 2011

**Collected:** July 5, 2011

**Received:** July 5, 2011

**Analyzed:** See Below

## Analytical Results

SAMPLE ID: SC-Sludge-WDR-316		Time Collected: 15:20		LAB ID: 995929				
Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Antimony	SW 6010B	34.1	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01
Arsenic	SW 6010B	ND	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01
Barium	SW 6010B	70.2	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01
Beryllium	SW 6020	ND	100	mg/kg	10.3	071411B	07/14/11	18:21
Cadmium	SW 6010B	ND	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01
Chromium	SW 6010B	4900	10.0	mg/kg	10.3	071211A-Th	07/12/11	16:28
Cobalt	SW 6010B	7.48	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01
Copper	SW 6010B	55.2	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01
Lead	SW 6010B	8.53	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01
Manganese	SW 6010B	358	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01
Mercury	SW 6020	0.125	5.00	mg/kg	0.103	071511A	07/15/11	15:04
Molybdenum	SW 6010B	9.75	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01
Nickel	SW 6010B	20.7	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01
Selenium	SW 6010B	ND	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01
Silver	SW 6010B	ND	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01
Thallium	SW 6010B	ND	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01
Vanadium	SW 6010B	125	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01
Zinc	SW 6010B	54.4	2.00	mg/kg	2.06	071211A-Th	07/12/11	16:01

### 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

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**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.:** 408401.01.DM

**P.O. No.:** 408401.01.DM

**Laboratory No.:** 995929

**Reported:** August 1, 2011

**Collected:** July 5, 2011

**Received:** July 5, 2011

## Quality Control/Quality Assurance Report

Parameter	Method	Batch	Units	DIGESTED BLANK		MRCCS			MRCVS				
				Blank	RL	Observed Value	TRUE Value	% Rec	Control Limits	Observed Value	TRUE Value	% Rec	Control Limits %
Antimony	SW 6010B	071211A-Th	mg/kg	ND	2.00	4.82	5.00	96.3%	90-110%	4.84	5.00	96.8%	90-110%
Arsenic	SW 6010B	071211A-Th	mg/kg	ND	0.500	4.73	5.00	94.6%	90-110%	4.76	5.00	95.3%	90-110%
Barium	SW 6010B	071211A-Th	mg/kg	ND	1.00	5.02	5.00	100%	90-110%	5.08	5.00	102%	90-110%
Beryllium	SW 6020	071411B	mg/kg	ND	1.00	0.0484	0.0500	96.9%	90-110%	0.0493	0.0500	98.6%	90-110%
Cadmium	SW 6010B	071211A-Th	mg/kg	ND	0.500	4.85	5.00	97.0%	90-110%	4.74	5.00	94.8%	90-110%
Chromium	SW 6010B	071211A-Th	mg/kg	ND	1.00	5.06	5.00	101%	90-110%	5.03	5.00	101%	90-110%
Cobalt	SW 6010B	071211A-Th	mg/kg	ND	1.00	4.81	5.00	96.3%	90-110%	4.81	5.00	96.3%	90-110%
Copper	SW 6010B	071211A-Th	mg/kg	ND	1.00	5.02	5.00	100%	90-110%	5.02	5.00	100%	90-110%
Lead	SW 6010B	071211A-Th	mg/kg	ND	1.00	4.58	5.00	91.7%	90-110%	4.56	5.00	91.3%	90-110%
Manganese	SW 6010B	071211A-Th	mg/kg	ND	1.00	5.02	5.00	100%	90-110%	4.95	5.00	99.0%	90-110%
Mercury	SW 6020	071511A	mg/kg	ND	0.100	0.00196	0.00200	97.9%	90-110%	0.00198	0.00200	98.9%	90-110%
Molybdenum	SW 6010B	071211A-Th	mg/kg	ND	1.00	4.72	5.00	94.4%	90-110%	4.76	5.00	95.2%	90-110%
Nickel	SW 6010B	071211A-Th	mg/kg	ND	1.00	4.84	5.00	96.8%	90-110%	4.92	5.00	98.3%	90-110%
Selenium	SW 6010B	071211A-Th	mg/kg	ND	1.00	4.89	5.00	97.7%	90-110%	4.92	5.00	98.3%	90-110%
Silver	SW 6010B	071211A-Th	mg/kg	ND	1.00	4.96	5.00	99.2%	90-110%	4.77	5.00	95.4%	90-110%
Thallium	SW 6010B	071211A-Th	mg/kg	ND	2.00	5.00	5.00	100%	90-110%	5.00	5.00	100%	90-110%
Vanadium	SW 6010B	071211A-Th	mg/kg	ND	1.00	4.81	5.00	96.2%	90-110%	4.71	5.00	94.2%	90-110%
Zinc	SW 6010B	071211A-Th	mg/kg	ND	2.00	4.98	5.00	99.6%	90-110%	5.01	5.00	100%	90-110%

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INTERFERENCE CHECK STANDARD AB

Parameter	Method	Units	ICS Obs.	ICS Theo.	% Rec.	Control Limits
Arsenic	SW 6010B	mg/kg	1.84	2.00	92.2%	80-120%
Cadmium	SW 6010B	mg/kg	1.93	2.00	96.4%	80-120%
Chromium	SW 6010B	mg/kg	2.04	2.00	102%	80-120%
Cobalt	SW 6010B	mg/kg	1.92	2.00	96.2%	80-120%
Copper	SW 6010B	mg/kg	2.06	2.00	103%	80-120%
Manganese	SW 6010B	mg/kg	2.05	2.00	102%	80-120%
Mercury	SW 6020	mg/kg	0.00192	0.00200	95.8%	80-120%
Nickel	SW 6010B	mg/kg	1.93	2.00	96.7%	80-120%
Silver	SW 6010B	mg/kg	2.00	2.00	100%	80-120%
Zinc	SW 6010B	mg/kg	2.00	2.00	100%	80-120%

LABORATORY CONTROL SAMPLES

SAMPLE DUPLICATES

Parameter	Method	Units	LCS Obs.	LCS Theo.	% Rec.	Control Limits	SAMPLE ID	SAMPLE RESULT	DUP RESULT	% RPD	Precision Control Limits %
Antimony	SW 6010B	mg/kg	98.0	100	98.0%	85-115%	995929	34.1	33.4	1.97%	≤20
Arsenic	SW 6010B	mg/kg	95.3	100	95.3%	85-115%	995929	ND	ND	0.00%	≤20
Barium	SW 6010B	mg/kg	99.8	100	99.8%	85-115%	995929	70.2	69.8	0.56%	≤20
Beryllium	SW 6020	mg/kg	90.6	100	90.6%	85-115%	995929	ND	ND	0.00%	≤20
Cadmium	SW 6010B	mg/kg	90.8	100	90.8%	85-115%	995929	ND	ND	0.00%	≤20
Chromium	SW 6010B	mg/kg	101	100	101%	85-115%	995929	4900	4890	0.20%	≤20
Cobalt	SW 6010B	mg/kg	93.2	100	93.2%	85-115%	995929	7.48	7.48	0.03%	≤20
Copper	SW 6010B	mg/kg	99.8	100	99.8%	85-115%	995929	55.2	54.4	1.52%	≤20
Lead	SW 6010B	mg/kg	88.5	100	88.5%	85-115%	995929	8.53	8.77	2.66%	≤20
Manganese	SW 6010B	mg/kg	99.0	100	99.0%	85-115%	995929	358	355	0.82%	≤20
Mercury	SW 6020	mg/kg	5.33	5.00	107%	85-115%	995929	0.125	0.125	0.41%	≤20
Molybdenum	SW 6010B	mg/kg	98.2	100	98.2%	85-115%	995929	9.75	9.76	0.09%	≤20
Nickel	SW 6010B	mg/kg	95.8	100	95.8%	85-115%	995929	20.7	20.5	1.08%	≤20
Selenium	SW 6010B	mg/kg	92.2	100	92.2%	85-115%	995929	ND	ND	0.00%	≤20
Silver	SW 6010B	mg/kg	85.9	100	85.9%	85-115%	995929	ND	ND	0.00%	≤20
Thallium	SW 6010B	mg/kg	98.0	100	98.0%	85-115%	995929	ND	ND	0.00%	≤20
Vanadium	SW 6010B	mg/kg	90.6	100	90.6%	85-115%	995929	125	125	0.27%	≤20
Zinc	SW 6010B	mg/kg	93.2	100	93.2%	85-115%	995929	54.4	53.3	2.20%	≤20

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MATRIX SPIKE

Sample ID	Parameter	Method	Units	Sample Result	DF	Spike Level	Total Amt. of Spike	Theo. Value	MS Obs.	% Rec.	Accuracy Control Limits %
995929	Antimony	SW 6010B	mg/kg	34.1	2.00	206	412	446	508	115%	75-125%
995929	Arsenic	SW 6010B	mg/kg	0.00	2.00	206	412	412	500	122%	75-125%
995929	Barium	SW 6010B	mg/kg	70.2	2.00	206	412	482	515	108%	75-125%
995929	Beryllium	SW 6020	mg/kg	0.00	200	1.02	204	204	181	89.0%	75-125%
995929	Cadmium	SW 6010B	mg/kg	0.00	2.00	206	412	412	453	110%	75-125%
995929	Chromium	SW 6010B	mg/kg	4900	10.0	206	2058	6958	6591	82.2%	75-125%
995929	Cobalt	SW 6010B	mg/kg	7.48	2.00	206	412	419	449	107%	75-125%
995929	Copper	SW 6010B	mg/kg	55.2	2.00	206	412	467	496	107%	75-125%
995929	Lead	SW 6010B	mg/kg	8.53	2.00	206	412	420	399	94.8%	75-125%
995929	Manganese	SW 6010B	mg/kg	358	2.00	206	412	769	766	99.2%	75-125%
995929	Mercury	SW 6020	mg/kg	0.125	5.00	0.205	1.03	1.15	0.903	75.7%	75-125%
995929	Molybdenum	SW 6010B	mg/kg	9.75	2.00	206	412	421	503	120%	75-125%
995929	Nickel	SW 6010B	mg/kg	20.7	2.00	206	412	432	473	110%	75-125%
995929	Selenium	SW 6010B	mg/kg	0.00	2.00	206	412	412	424	103%	75-125%
995929	Silver	SW 6010B	mg/kg	0.00	2.00	206	412	412	351	85.3%	75-125%
995929	Thallium	SW 6010B	mg/kg	0.00	2.00	206	412	412	384	93.2%	75-125%
995929	Vanadium	SW 6010B	mg/kg	125	2.00	206	412	537	542	101%	75-125%
995929	Zinc	SW 6010B	mg/kg	54.4	2.00	206	412	466	560	123%	75-125%

ND: Not detected, or below limit of detection.

DF: Dilution Factor

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

*for*   
Mona Nassimi, Manager  
Analytical Services

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## Dry Weight Calculations

Date Calculated: 8/1/2011

	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	11.894	---	51.8	24.6994	24.7	2.00	4.15
Nitrate as N	ND	---	51.8	ND	ND	4.00	8.31
Hexavalent Chromium	16.7232	---	51.8	34.7278	34.7	2.00	4.15
Hexavalent Chromium - Dup	16.4790	---	51.8	34.2208	34.2	2.00	4.15
Hexavalent Chromium - MS	97.8648	---	51.8	203.229	203	4.00	8.31
Hexavalent Chromium - IMS	798.822	---	51.8	1658.855	1660	20.0	41.5
Hexavalent Chromium - PDMS	185.6300	---	51.8	385.484	385	10.0	20.8
Antimony	16.42	2.00	51.8	34.0982	34.1	0.991	2.06
Arsenic	ND	2.00	51.8	ND	ND	0.991	2.06
Barium	33.80	2.00	51.8	70.1900	70.2	0.991	2.06
Beryllium	0.2498	100	51.8	0.5187	ND	4.955	10.3
Cadmium	0.954	2.00	51.8	1.9811	ND	0.991	2.06
Chromium	2358	10.0	51.8	4896.69	4900	4.955	10.3
Cobalt	3.602	2.00	51.8	7.4800	7.48	0.991	2.06
Copper	26.60	2.00	51.8	55.2383	55.2	0.991	2.06
Lead	4.110	2.00	51.8	8.5349	8.53	0.991	2.06
Manganese	172.3	2.00	51.8	357.8029	358	0.991	2.06
Mercury	0.06040	5.00	51.8	0.12543	0.125	0.0494	0.103
Molybdenum	4.697	2.00	51.8	9.7539	9.75	0.991	2.06
Nickel	9.968	2.00	51.8	20.6998	20.7	0.991	2.06
Selenium	ND	2.00	51.8	ND	ND	0.991	2.06
Silver	ND	2.00	51.8	ND	ND	0.991	2.06
Thallium	ND	2.00	51.8	ND	ND	0.991	2.06
Vanadium	60.27	2.00	51.8	125.158	125	0.991	2.06
Zinc	26.22	2.00	51.8	54.4492	54.4	0.991	2.06

Sample Result in Dry Weight =  $[\text{Sample}_{\text{ww}} / (100 - \% \text{Moisture})] * 100$

where:

Sample<sub>ww</sub> = Sample result in wet weight

**TRUESDAIL LABORATORIES, INC.**



**TOTAL SOLIDS BY SM 2540 B**

Date of Analysis: 07/07/11

Analytical Batch:	07SOLD11A
Oven Temp, °C:	105

[illegible]

Relative Percent Difference			
Sample ID	Sample	Sample Dup	RPD
995929	51.845	53.451	3.1

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

Where:

A = Weight of dried Residue + Dish, g

B = Weight of dish, g

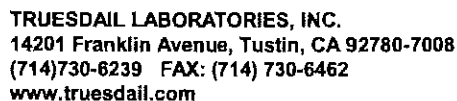
C = Weight of wet sample + Dish, g

G. Savani  
Analyst Name

  
\_\_\_\_\_  
Analyst Signature

hpe  
Reviewer Name

  
Reviewer Signature



995929

[IM3plant-WDR-316]

TURNAROUND TIME 10 Days

DATE 07/05/11

PAGE 1 OF 1

**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"/> 5.6 °C °F
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time		
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		

049



TRUESDAIL LABORATORIES, INC.

## Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 995 929

Date Delivered: 07/05/11 Time: 22:30 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: 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 =        ☐ 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: 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

July 29, 2011

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-WDR-316 PROJECT,  
GROUNDWATER MONITORING,  
TLI NO.: 995931


Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-316 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.

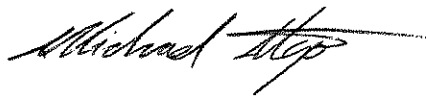
The samples were received and delivered with the chain of custody on July 5, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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  
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:** Three (3) Groundwaters

**Project Name:** PG&E Topock Project

**Project No.:** 408401.01.DM

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TUSTIN, CALIFORNIA 92780-7008  
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**Laboratory No.:** 995931

**Date:** July 26, 2011

**Collected:** July 5, 2011

**Received:** July 5, 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 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	Sonya Bersudsky





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

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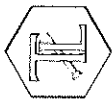
**Project Name:** PG&E Topock Project  
**Project No.:** 408401.01.DM  
**P.O. No.:** 408401.01.DM

**Laboratory No.:** 995931  
**Date Received:** July 5, 2011

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
995931-001	SC-700B-WDR-316	E120.1	NONE	7/5/2011	15:00	EC	7090	umhos/cm	2.00
995931-001	SC-700B-WDR-316	E200.7	NONE	7/5/2011	15:00	BORON	1010	ug/L	200
995931-001	SC-700B-WDR-316	E200.7	NONE	7/5/2011	15:00	Iron	ND	ug/L	20.0
995931-001	SC-700B-WDR-316	E200.8	NONE	7/5/2011	15:00	Aluminum	ND	ug/L	50.0
995931-001	SC-700B-WDR-316	E200.8	NONE	7/5/2011	15:00	Antimony	ND	ug/L	10.0
995931-001	SC-700B-WDR-316	E200.8	NONE	7/5/2011	15:00	Arsenic	ND	ug/L	1.0
995931-001	SC-700B-WDR-316	E200.8	NONE	7/5/2011	15:00	Barium	ND	ug/L	10.0
995931-001	SC-700B-WDR-316	E200.8	NONE	7/5/2011	15:00	Chromium	ND	ug/L	1.0
995931-001	SC-700B-WDR-316	E200.8	NONE	7/5/2011	15:00	Copper	ND	ug/L	5.0
995931-001	SC-700B-WDR-316	E200.8	NONE	7/5/2011	15:00	Lead	ND	ug/L	10.0
995931-001	SC-700B-WDR-316	E200.8	NONE	7/5/2011	15:00	Manganese	2.0	ug/L	1.0
995931-001	SC-700B-WDR-316	E200.8	NONE	7/5/2011	15:00	Molybdenum	18.2	ug/L	10.0
995931-001	SC-700B-WDR-316	E200.8	NONE	7/5/2011	15:00	Nickel	ND	ug/L	10.0
995931-001	SC-700B-WDR-316	E200.8	NONE	7/5/2011	15:00	Zinc	ND	ug/L	10.0
995931-001	SC-700B-WDR-316	E218.6	LABFLT	7/5/2011	15:00	Chromium, hexavalent	ND	ug/L	0.20
995931-001	SC-700B-WDR-316	E300	NONE	7/5/2011	15:00	Fluoride	1.89	mg/L	0.500
995931-001	SC-700B-WDR-316	E300	NONE	7/5/2011	15:00	Nitrate as N	2.73	mg/L	1.00
995931-001	SC-700B-WDR-316	E300	NONE	7/5/2011	15:00	Sulfate	494	mg/L	12.5
995931-001	SC-700B-WDR-316	SM2130B	NONE	7/5/2011	15:00	Turbidity	ND	NTU	0.100
995931-001	SC-700B-WDR-316	SM2540C	NONE	7/5/2011	15:00	Total Dissolved Solids	4180	mg/L	125
995931-001	SC-700B-WDR-316	SM4500NH3D	NONE	7/5/2011	15:00	Ammonia-N	ND	mg/L	0.500
995931-001	SC-700B-WDR-316	SM4500NO2B	NONE	7/5/2011	15:00	Nitrite as N	ND	mg/L	0.0050

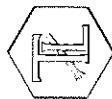
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# TRUESDAIL LABORATORIES, INC.

Report Continued

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
995931-002	SC-100B-WDR-316	E120.1	NONE	7/5/2011	15:00	EC	7840	umhos/cm	2.00
995931-002	SC-100B-WDR-316	E200.7	NONE	7/5/2011	15:00	BORON	1040	ug/L	200
995931-002	SC-100B-WDR-316	E200.7	NONE	7/5/2011	15:00	Iron	ND	ug/L	20.0
995931-002	SC-100B-WDR-316	E200.8	NONE	7/5/2011	15:00	Aluminum	ND	ug/L	50.0
995931-002	SC-100B-WDR-316	E200.8	NONE	7/5/2011	15:00	Antimony	ND	ug/L	10.0
995931-002	SC-100B-WDR-316	E200.8	NONE	7/5/2011	15:00	Arsenic	3.4	ug/L	1.0
995931-002	SC-100B-WDR-316	E200.8	NONE	7/5/2011	15:00	Barium	26.0	ug/L	10.0
995931-002	SC-100B-WDR-316	E200.8	NONE	7/5/2011	15:00	Chromium	810	ug/L	1.0
995931-002	SC-100B-WDR-316	E200.8	NONE	7/5/2011	15:00	Copper	ND	ug/L	5.0
995931-002	SC-100B-WDR-316	E200.8	NONE	7/5/2011	15:00	Lead	ND	ug/L	10.0
995931-002	SC-100B-WDR-316	E200.8	NONE	7/5/2011	15:00	Manganese	9.5	ug/L	1.0
995931-002	SC-100B-WDR-316	E200.8	NONE	7/5/2011	15:00	Molybdenum	20.9	ug/L	10.0
995931-002	SC-100B-WDR-316	E200.8	NONE	7/5/2011	15:00	Nickel	ND	ug/L	10.0
995931-002	SC-100B-WDR-316	E200.8	NONE	7/5/2011	15:00	Zinc	ND	ug/L	10.0
995931-002	SC-100B-WDR-316	E218.6	LABFLT	7/5/2011	15:00	Chromium, hexavalent	852	ug/L	21.0
995931-002	SC-100B-WDR-316	E300	NONE	7/5/2011	15:00	Fluoride	2.68	mg/L	0.500
995931-002	SC-100B-WDR-316	E300	NONE	7/5/2011	15:00	Nitrate as N	3.04	mg/L	1.00
995931-002	SC-100B-WDR-316	E300	NONE	7/5/2011	15:00	Sulfate	562	mg/L	12.5
995931-002	SC-100B-WDR-316	SM2130B	NONE	7/5/2011	15:00	Turbidity	0.107	NTU	0.100
995931-002	SC-100B-WDR-316	SM2540C	NONE	7/5/2011	15:00	Total Dissolved Solids	4720	mg/L	125
995931-002	SC-100B-WDR-316	SM4500NH3D	NONE	7/5/2011	15:00	Ammonia-N	ND	mg/L	0.500
995931-002	SC-100B-WDR-316	SM4500NO2B	NONE	7/5/2011	15:00	Nitrite as N	ND	mg/L	0.0050



# TRUESDAIL LABORATORIES, INC.

Report Continued

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
995931-003	SC-701-WDR-316	E120.1	NONE	7/5/2011	15:00	EC	42400	umhos/cm	2.00
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Antimony	ND	ug/L	10.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Arsenic	ND	ug/L	2.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Barium	77.0	ug/L	10.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Beryllium	ND	ug/L	10.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Cadmium	ND	ug/L	3.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Chromium	4.9	ug/L	2.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Cobalt	ND	ug/L	5.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Copper	ND	ug/L	5.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Lead	ND	ug/L	10.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Manganese	23.9	ug/L	2.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Mercury	ND	ug/L	2.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Molybdenum	130	ug/L	10.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Nickel	11.1	ug/L	10.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Selenium	22.2	ug/L	10.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Silver	ND	ug/L	5.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Thallium	ND	ug/L	2.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Vanadium	ND	ug/L	10.0
995931-003	SC-701-WDR-316	E200.8	NONE	7/5/2011	15:00	Zinc	ND	ug/L	10.0
995931-003	SC-701-WDR-316	E218.6	LABFLT	7/5/2011	15:00	Chromium, hexavalent	ND	ug/L	2.1
995931-003	SC-701-WDR-316	E300	NONE	7/5/2011	15:00	Fluoride	15.5	mg/L	1.00
995931-003	SC-701-WDR-316	SM2540C	NONE	7/5/2011	15:00	Total Dissolved Solids	30100	mg/L	833

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.

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14201 FRANKLIN AVENUE  
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## 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:** 408401.01.DM

**Project Number:** 408401.01.DM

**Laboratory No.** 995931

Page 1 of 38

Printed 7/26/2011

Samples Received on 7/5/2011 10:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-316	995931-001	07/05/2011 15:00	Water
SC-100B-WDR-316	995931-002	07/05/2011 15:00	Water
SC-701-WDR-316	995931-003	07/05/2011 15:00	Water

### Anions By I.C. - EPA 300.0

Batch 07AN11C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
995931-001 Fluoride	mg/L	07/06/2011 11:48	5.00	0.0250	0.500	1.89
Nitrate as Nitrogen	mg/L	07/06/2011 11:48	5.00	0.0550	1.00	2.73
Sulfate	mg/L	07/06/2011 16:00	25.0	0.500	12.5	494.
995931-002 Fluoride	mg/L	07/06/2011 11:59	5.00	0.0250	0.500	2.68
Nitrate as Nitrogen	mg/L	07/06/2011 11:59	5.00	0.0550	1.00	3.04
Sulfate	mg/L	07/06/2011 16:11	25.0	0.500	12.5	562.

### Method Blank

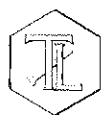
Parameter	Unit	DF	Result
Fluoride	mg/L	1.00	ND
Sulfate	mg/L	1.00	ND
Nitrate as Nitrogen	mg/L	1.00	ND

### Duplicate

Lab ID = 995935-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	1.00	ND	0.00	0	0 - 20
Sulfate	mg/L	1.00	ND	0.00	0	0 - 20
Nitrate as Nitrogen	mg/L	1.00	ND	0.00	0	0 - 20

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.09	4.00	102.	90 - 110
Sulfate	mg/L	1.00	20.3	20.0	101.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00	100.	90 - 110

## Matrix Spike

Lab ID = 995935-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	1.00	2.14	2.00(2.00)	107.	85 - 115
Sulfate	mg/L	1.00	1.93	2.00(2.00)	96.4	85 - 115
Nitrate as Nitrogen	mg/L	1.00	2.22	2.00(2.00)	111.	85 - 115

## Matrix Spike Duplicate

Lab ID = 995935-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	1.00	2.16	2.00(2.00)	108.	85 - 115
Sulfate	mg/L	1.00	1.93	2.00(2.00)	96.4	85 - 115
Nitrate as Nitrogen	mg/L	1.00	2.22	2.00(2.00)	111.	85 - 115

## MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.10	4.00	102.	90 - 110
Sulfate	mg/L	1.00	20.3	20.0	102.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00	100.	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	3.13	3.00	104.	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
Sulfate	mg/L	1.00	15.1	15.0	101.	90 - 110

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	15.1	15.0	101.	90 - 110

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	15.1	15.0	101.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	2.99	3.00	99.6	90 - 110

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.99	3.00	99.6	90 - 110

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.99	3.00	99.8	90 - 110

## Anions By I.C. - EPA 300.0

Batch 07AN11E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
995931-003 Fluoride	mg/L	07/08/2011 12:46	10.0	0.0500	1.00	15.5

## Method Blank

Parameter	Unit	DF	Result
Fluoride	mg/L	1.00	ND

## Duplicate

Lab ID = 995931-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	10.0	15.2	15.5	2.26	0 - 20

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.09	4.00	102.	90 - 110

## Matrix Spike

Lab ID = 995931-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	10.0	35.0	35.5(20.0)	97.5	85 - 115

## MRCVS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.10	4.00	102.	90 - 110

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.14	3.00	104.	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

## Nitrite SM 4500-NO2 B

Batch 07NO211A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
995931-001 Nitrite as Nitrogen	mg/L	07/06/2011 12:01	1.00	0.000200	0.0050	ND
995931-002 Nitrite as Nitrogen	mg/L	07/06/2011 12:02	1.00	0.000200	0.0050	ND

### Method Blank

Parameter	Unit	DF	Result
Nitrite as Nitrogen	mg/L	1.00	ND

### Duplicate

Lab ID = 995931-002

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	0.0390	0.0400	97.5	90 - 110

### Matrix Spike

Lab ID = 995931-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0211	0.0200(0.0200)	106.	85 - 115

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0185	0.0200	92.5	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0187	0.0200	93.5	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

## Specific Conductivity - EPA 120.1

Batch 07EC11B

7/7/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
995931-001 Specific Conductivity	umhos/cm	07/07/2011	1.00	0.0380	2.00	7090
995931-002 Specific Conductivity	umhos/cm	07/07/2011	1.00	0.0380	2.00	7840
995931-003 Specific Conductivity	umhos/cm	07/07/2011	1.00	0.0380	2.00	42400

### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

### Duplicate

Lab ID = 995931-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	42300	42400	0.236	0 - 10

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	709	706	100.	90 - 110

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	708	706	100.	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	980.	998	98.2	90 - 110





Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

**Chrome VI by EPA 218.6**

Batch: 07CrH11B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
995931-001 Chromium, Hexavalent	ug/L	07/07/2011 09:30	1.05	0.0210	0.20	ND
995931-002 Chromium, Hexavalent	ug/L	07/07/2011 09:41	105	2.20	21.0	852.
995931-003 Chromium, Hexavalent	ug/L	07/07/2011 12:20	10.5	0.220	2.1	ND

**Method Blank**

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

**Duplicate**

Lab ID = 995934-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	0.979	0.977	0.204	0 - 20

**Lab Control Sample**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.04	5.00	101.	90 - 110

**Matrix Spike**

Lab ID = 995931-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.30	5.44(5.25)	97.5	90 - 110

**Matrix Spike**

Lab ID = 995931-001

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 = 995931-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	105	1930	1900(1050)	102.	90 - 110

**Matrix Spike**

Lab ID = 995931-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.5	12.5	11.7(10.5)	108.	90 - 110

**Matrix Spike**

Lab ID = 995931-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.36	6.06(5.25)	106.	90 - 110

**Matrix Spike**

Lab ID = 995931-003

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 = 995934-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.97	6.90(5.30)	101.	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

## Metals by EPA 200.7, Total

Batch 071311A-Th

Parameter	Unit	Analyzed	DF	MDL	RL	Result
995931-001 Boron	ug/L	07/13/2011 12:04	1.00	5.00	200.	1010
Iron	ug/L	07/13/2011 12:04	1.00	1.34	20.0	ND
995931-002 Boron	ug/L	07/13/2011 12:22	1.00	5.00	200.	1040
Iron	ug/L	07/13/2011 12:22	1.00	1.34	20.0	ND

### Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND
Boron	ug/L	1.00	ND

### Duplicate

Lab ID = 995931-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20
Boron	ug/L	1.00	974.	1010	3.62	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5660	5000	113.	85 - 115
Boron	ug/L	1.00	5130	5000	102.	85 - 115

### Matrix Spike

Lab ID = 995931-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	1870	2000(2000)	93.4	75 - 125
Boron	ug/L	1.00	2990	3010(2000)	98.9	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5250	5000	105.	95 - 105
Boron	ug/L	1.00	5080	5000	102.	95 - 105

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4970	5000	99.4	90 - 110
Boron	ug/L	1.00	4720	5000	94.3	90 - 110

### Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2150	2000	108.	80 - 120

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Client: **E2 Consulting Engineers, Inc.**

Project Name: PG&amp;E Topock Project

Page 11 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

**Metals by EPA 200.8, Total**

Batch 071011A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
995931-001 Aluminum	ug/L	07/10/2011 15:43	5.00	6.02	50.0	ND
Antimony	ug/L	07/10/2011 15:43	5.00	0.120	10.0	ND
Arsenic	ug/L	07/10/2011 15:43	5.00	0.285	1.0	ND
Barium	ug/L	07/10/2011 15:43	5.00	0.200	10.0	ND
Chromium	ug/L	07/10/2011 15:43	5.00	0.110	1.0	ND
Copper	ug/L	07/10/2011 15:43	5.00	0.125	5.0	ND
Lead	ug/L	07/10/2011 15:43	5.00	0.110	10.0	ND
Manganese	ug/L	07/10/2011 15:43	5.00	0.980	1.0	2.0
Molybdenum	ug/L	07/10/2011 15:43	5.00	0.270	10.0	18.2
Nickel	ug/L	07/10/2011 15:43	5.00	0.0750	10.0	ND
Zinc	ug/L	07/10/2011 15:43	5.00	1.26	10.0	ND
995931-002 Aluminum	ug/L	07/10/2011 16:09	5.00	6.02	50.0	ND
Antimony	ug/L	07/10/2011 16:09	5.00	0.120	10.0	ND
Arsenic	ug/L	07/10/2011 16:09	5.00	0.285	1.0	3.4
Copper	ug/L	07/10/2011 16:09	5.00	0.125	5.0	ND
Lead	ug/L	07/10/2011 16:09	5.00	0.110	10.0	ND
Manganese	ug/L	07/10/2011 16:09	5.00	0.980	1.0	9.5
Molybdenum	ug/L	07/10/2011 16:09	5.00	0.270	10.0	20.9
Nickel	ug/L	07/10/2011 16:09	5.00	0.0750	10.0	ND
Zinc	ug/L	07/10/2011 16:09	5.00	1.26	10.0	ND

## Method Blank

Parameter	Unit	DF	Result
Aluminum	ug/L	1.00	ND
Arsenic	ug/L	1.00	ND
Barium	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Nickel	ug/L	1.00	ND
Zinc	ug/L	1.00	ND
Antimony	ug/L	1.00	ND
Copper	ug/L	1.00	ND
Lead	ug/L	1.00	ND
Manganese	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 12 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

## Duplicate

Lab ID = 995931-001

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
Barium	ug/L	5.00	10.0	9.76	2.43	0 - 20
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Nickel	ug/L	5.00	ND	0.00	0	0 - 20
Zinc	ug/L	5.00	ND	0.00	0	0 - 20
Antimony	ug/L	5.00	ND	0.00	0	0 - 20
Copper	ug/L	5.00	ND	0.00	0	0 - 20
Lead	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	2.02	2.05	1.42	0 - 20
Molybdenum	ug/L	5.00	18.3	18.2	0.602	0 - 20

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	49.6	50.0	99.2	85 - 115
Arsenic	ug/L	1.00	50.0	50.0	100.	85 - 115
Barium	ug/L	1.00	50.4	50.0	101.	85 - 115
Chromium	ug/L	1.00	49.9	50.0	99.8	85 - 115
Nickel	ug/L	1.00	49.6	50.0	99.2	85 - 115
Zinc	ug/L	1.00	47.8	50.0	95.6	85 - 115
Antimony	ug/L	1.00	47.9	50.0	95.7	85 - 115
Copper	ug/L	1.00	50.0	50.0	100.	85 - 115
Lead	ug/L	1.00	49.1	50.0	98.3	85 - 115
Manganese	ug/L	1.00	50.6	50.0	101.	85 - 115
Molybdenum	ug/L	1.00	49.6	50.0	99.2	85 - 115

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 13 of 38****Project Number: 408401.01.DM****Printed 7/26/2011****Matrix Spike****Lab ID = 995931-001**

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	5.00	231.	250.(250.)	92.5	75 - 125
Arsenic	ug/L	5.00	243.	250.(250.)	97.1	75 - 125
Barium	ug/L	5.00	244.	260.(250.)	93.7	75 - 125
Chromium	ug/L	5.00	247.	250.(250.)	98.7	75 - 125
Nickel	ug/L	5.00	230.	250.(250.)	91.9	75 - 125
Zinc	ug/L	5.00	202.	250.(250.)	80.7	75 - 125
Antimony	ug/L	5.00	218.	250.(250.)	87.0	75 - 125
Copper	ug/L	5.00	228.	250.(250.)	91.0	75 - 125
Lead	ug/L	5.00	217	250.(250.)	86.8	75 - 125
Manganese	ug/L	5.00	248.	252.(250.)	98.5	75 - 125
Molybdenum	ug/L	5.00	261.	268.(250.)	97.0	75 - 125

**Matrix Spike Duplicate****Lab ID = 995931-001**

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	5.00	231.	250.(250.)	92.3	75 - 125
Arsenic	ug/L	5.00	244.	250.(250.)	97.8	75 - 125
Barium	ug/L	5.00	244.	260.(250.)	93.9	75 - 125
Chromium	ug/L	5.00	247.	250.(250.)	98.6	75 - 125
Nickel	ug/L	5.00	228.	250.(250.)	91.3	75 - 125
Zinc	ug/L	5.00	202.	250.(250.)	80.8	75 - 125
Antimony	ug/L	5.00	220.	250.(250.)	87.8	75 - 125
Copper	ug/L	5.00	227.	250.(250.)	90.7	75 - 125
Lead	ug/L	5.00	216.	250.(250.)	86.5	75 - 125
Manganese	ug/L	5.00	246.	252.(250.)	97.8	75 - 125
Molybdenum	ug/L	5.00	260.	268.(250.)	96.9	75 - 125



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 19 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

## Metals by EPA 200.8, Total

Batch 071111A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
995931-002 Barium	ug/L	07/11/2011 17:25	5.00	0.200	10.0	26.0
Chromium	ug/L	07/11/2011 17:25	5.00	0.100	1.0	810.
995931-003 Arsenic	ug/L	07/11/2011 17:44	10.0	0.570	2.0	ND
Barium	ug/L	07/11/2011 17:44	10.0	0.400	10.0	77.0
Beryllium	ug/L	07/11/2011 17:51	50.0	1.80	10.0	ND
Cadmium	ug/L	07/11/2011 17:44	10.0	0.940	3.0	ND
Chromium	ug/L	07/11/2011 17:44	10.0	0.200	2.0	4.9
Cobalt	ug/L	07/11/2011 17:44	10.0	0.970	5.0	ND
Copper	ug/L	07/11/2011 17:44	10.0	0.250	5.0	ND
Lead	ug/L	07/11/2011 17:44	10.0	0.220	10.0	ND
Manganese	ug/L	07/11/2011 17:44	10.0	1.96	2.0	23.9
Molybdenum	ug/L	07/11/2011 17:44	10.0	0.540	10.0	130.
Nickel	ug/L	07/11/2011 17:44	10.0	0.150	10.0	11.1
Selenium	ug/L	07/11/2011 17:44	10.0	0.680	10.0	22.2
Thallium	ug/L	07/11/2011 17:44	10.0	0.250	2.0	ND
Vanadium	ug/L	07/11/2011 17:44	10.0	0.740	10.0	ND
Zinc	ug/L	07/11/2011 17:44	10.0	2.52	10.0	ND

## Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Barium	ug/L	1.00	ND
Beryllium	ug/L	1.00	ND
Cadmium	ug/L	1.00	ND
Cobalt	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Nickel	ug/L	1.00	ND
Selenium	ug/L	1.00	ND
Zinc	ug/L	1.00	ND
Copper	ug/L	1.00	ND
Lead	ug/L	1.00	ND
Thallium	ug/L	1.00	ND
Vanadium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

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036



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 20 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

## Duplicate

Lab ID = 995930-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	5.00	3.66	3.69	0.871	0 - 20
Barium	ug/L	5.00	13.6	13.8	1.24	0 - 20
Beryllium	ug/L	5.00	ND	0.00	0	0 - 20
Cadmium	ug/L	5.00	ND	0.00	0	0 - 20
Cobalt	ug/L	5.00	ND	0.00	0	0 - 20
Chromium	ug/L	5.00	7.57	7.64	0.947	0 - 20
Nickel	ug/L	5.00	ND	0.00	0	0 - 20
Selenium	ug/L	5.00	ND	0.00	0	0 - 20
Zinc	ug/L	5.00	ND	0.00	0	0 - 20
Copper	ug/L	5.00	ND	0.00	0	0 - 20
Lead	ug/L	5.00	ND	0.00	0	0 - 20
Thallium	ug/L	5.00	ND	0.00	0	0 - 20
Vanadium	ug/L	5.00	ND	8.02	0	0 - 20
Manganese	ug/L	5.00	32.7	32.6	0.184	0 - 20
Molybdenum	ug/L	5.00	18.7	18.6	0.643	0 - 20

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	49.6	50.0	99.1	85 - 115
Barium	ug/L	1.00	49.8	50.0	99.6	85 - 115
Beryllium	ug/L	1.00	46.4	50.0	92.9	85 - 115
Cadmium	ug/L	1.00	50.0	50.0	99.9	85 - 115
Cobalt	ug/L	1.00	50.6	50.0	101.	85 - 115
Chromium	ug/L	1.00	49.7	50.0	99.3	85 - 115
Nickel	ug/L	1.00	49.3	50.0	98.7	85 - 115
Selenium	ug/L	1.00	49.4	50.0	98.8	85 - 115
Zinc	ug/L	1.00	48.4	50.0	96.7	85 - 115
Copper	ug/L	1.00	49.8	50.0	99.7	85 - 115
Lead	ug/L	1.00	48.2	50.0	96.4	85 - 115
Thallium	ug/L	1.00	50.9	50.0	102.	85 - 115
Vanadium	ug/L	1.00	49.0	50.0	98.0	85 - 115
Manganese	ug/L	1.00	50.8	50.0	102.	85 - 115
Molybdenum	ug/L	1.00	49.8	50.0	99.6	85 - 115

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 21 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

## Matrix Spike

Lab ID = 995930-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	248.	254.(250.)	97.9	75 - 125
Barium	ug/L	5.00	249.	264.(250.)	94.2	75 - 125
Beryllium	ug/L	5.00	234	250.(250.)	93.6	75 - 125
Cadmium	ug/L	5.00	219	250.(250.)	87.6	75 - 125
Cobalt	ug/L	5.00	240.	250.(250.)	96.2	75 - 125
Chromium	ug/L	5.00	248.	258.(250.)	95.9	75 - 125
Nickel	ug/L	5.00	222.	250.(250.)	88.8	75 - 125
Selenium	ug/L	5.00	234.	250.(250.)	93.4	75 - 125
Zinc	ug/L	5.00	214.	250.(250.)	85.7	75 - 125
Copper	ug/L	5.00	222.	250.(250.)	88.6	75 - 125
Lead	ug/L	5.00	222.	250.(250.)	88.6	75 - 125
Thallium	ug/L	5.00	233.	250.(250.)	93.4	75 - 125
Vanadium	ug/L	5.00	256	258.(250.)	99.2	75 - 125
Manganese	ug/L	5.00	284	283.(250.)	100.	75 - 125
Molybdenum	ug/L	5.00	265.	269.(250.)	98.7	75 - 125

## Matrix Spike Duplicate

Lab ID = 995930-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	247.	254.(250.)	97.5	75 - 125
Barium	ug/L	5.00	249.	264.(250.)	94.1	75 - 125
Beryllium	ug/L	5.00	236.	250.(250.)	94.2	75 - 125
Cadmium	ug/L	5.00	217.	250.(250.)	87.0	75 - 125
Cobalt	ug/L	5.00	238.	250.(250.)	95.1	75 - 125
Chromium	ug/L	5.00	247.	258.(250.)	95.9	75 - 125
Nickel	ug/L	5.00	223.	250.(250.)	89.2	75 - 125
Selenium	ug/L	5.00	232.	250.(250.)	93.0	75 - 125
Zinc	ug/L	5.00	212.	250.(250.)	84.9	75 - 125
Copper	ug/L	5.00	223	250.(250.)	89.2	75 - 125
Lead	ug/L	5.00	221.	250.(250.)	88.4	75 - 125
Thallium	ug/L	5.00	234.	250.(250.)	93.4	75 - 125
Vanadium	ug/L	5.00	255.	258.(250.)	98.8	75 - 125
Manganese	ug/L	5.00	281.	283.(250.)	99.3	75 - 125
Molybdenum	ug/L	5.00	264.	269.(250.)	98.1	75 - 125





# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 31 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

## Interference Check Standard AB

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

## Interference Check Standard AB

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

## Interference Check Standard AB

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

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Vanadium	ug/L	1.00	ND	0.00		
Manganese	ug/L	1.00	48.6	50.0	97.2	80 - 120

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	48.4	50.0	96.7	80 - 120
Molybdenum	ug/L	1.00	ND	0.00		

## Interference Check Standard AB

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

## Serial Dilution

Lab ID = 995931-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	25.0	25.2	26.0	3.08	0 - 10
Chromium	ug/L	25.0	781.	810.	3.66	0 - 10

## Serial Dilution

Lab ID = 995931-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Molybdenum	ug/L	50.0	122.	130.	6.43	0 - 10



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project  
Project Number: 408401.01.DM

Page 32 of 38  
Printed 7/26/2011

## Metals by EPA 200.8, Total

Batch 071211A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
995931-003 Antimony	ug/L	07/12/2011 16:57	10.0	0.240	10.0	ND
Mercury	ug/L	07/12/2011 16:57	10.0	0.400	2.0	ND

### Method Blank

Parameter	Unit	DF	Result
Mercury	ug/L	1.00	ND
Antimony	ug/L	1.00	ND

### Duplicate

Lab ID = 995931-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Mercury	ug/L	10.0	ND	0.00	0	0 - 20
Antimony	ug/L	10.0	ND	0.00	0	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Mercury	ug/L	1.00	1.98	2.00	98.8	85 - 115
Antimony	ug/L	1.00	47.2	50.0	94.3	85 - 115

### Matrix Spike

Lab ID = 995931-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Mercury	ug/L	10.0	15.5	20.0(20.0)	77.6	75 - 125
Antimony	ug/L	10.0	408.	500.(500.)	81.5	75 - 125

### Matrix Spike Duplicate

Lab ID = 995931-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Mercury	ug/L	10.0	15.5	20.0(20.0)	77.3	75 - 125
Antimony	ug/L	10.0	402.	500.(500.)	80.5	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Mercury	ug/L	1.00	1.99	2.00	99.5	90 - 110
Antimony	ug/L	1.00	46.0	50.0	91.9	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Mercury	ug/L	1.00	2.02	2.00	101.	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Mercury	ug/L	1.00	1.99	2.00	99.6	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 35 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

**Metals by EPA 200.8, Total**

Batch: 071911A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
995931-003 Silver	ug/L	07/19/2011 12:19	10.0	0.350	5.0	ND

Method Blank

Parameter	Unit	DF	Result
Silver	ug/L	1.00	ND

Duplicate

Lab ID = 995931-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Silver	ug/L	10.0	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	49.0	50.0	98.0	85 - 115

Matrix Spike

Lab ID = 995931-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Silver	ug/L	10.0	387.	500.(500.)	77.5	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	50.0	50.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	49.7	50.0	99.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	48.9	50.0	97.9	90 - 110

MRCVS - Primary

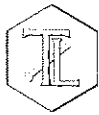
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	48.8	50.0	97.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	49.0	50.0	98.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	51.0	50.0	102.	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 36 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

## Interference Check Standard A

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

## Interference Check Standard A

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

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	54.0	50.0	108.	80 - 120

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	51.0	50.0	102.	80 - 120

## Total Dissolved Solids by SM 2540 C

Batch 07TDS11B

7/7/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
995931-001 Total Dissolved Solids	mg/L	07/07/2011	1.00	0.434	125	4180
995931-002 Total Dissolved Solids	mg/L	07/07/2011	1.00	0.434	125	4720
995931-003 Total Dissolved Solids	mg/L	07/07/2011	1.00	0.434	833.	30100

## Method Blank

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

## Duplicate

Lab ID = 995933-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	411	401	2.46	0 - 5

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	516	500.	103.	90 - 110

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 37 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

## Ammonia Nitrogen by SM4500-NH3D

Batch 07NH3-E11A

7/6/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
995931-001 Ammonia as N	mg/L	07/06/2011	1.00	0.00200	0.500	ND
995931-002 Ammonia as N	mg/L	07/06/2011	1.00	0.00200	0.500	ND

### Method Blank

Parameter	Unit	DF	Result
Ammonia as N	mg/L	1.00	ND

### Duplicate

Lab ID = 995931-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Ammonia as N	mg/L	1.00	ND	0.323	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

### Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	10.7	10.0	107.	90 - 110

### Matrix Spike

Lab ID = 995931-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.61	6.32(6.00)	88.1	75 - 125

### Matrix Spike Duplicate

Lab ID = 995931-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.82	6.32(6.00)	91.6	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.54	6.00	109.	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.46	6.00	91.0	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 38 of 38

Project Number: 408401.01.DM

Printed 7/26/2011

## Turbidity by SM 2130 B

Batch: 07TUC11D

7/6/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
995931-001 Turbidity	NTU	07/06/2011	1.00	0.0140	0.100	ND
995931-002 Turbidity	NTU	07/06/2011	1.00	0.0140	0.100	0.107

### Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

### Duplicate

Lab ID = 995931-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.108	0.107	0.930	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.68	8.00	96.0	90 - 110

### Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.53	8.00	94.1	90 - 110

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**

  
for Mona Nassimi

Manager, Analytical Services



E2 Condon

**Total Dissolved Solids by SM 2540 C****Calculations**

Batch: 07TDS11B

Date Calculated: 7/11/11

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	67.2310	67.2312	67.231	0.0002	No	0.0000	0.0	25.0	ND	1
995930-1	20	49.7176	49.7799	49.7799	0.0000	No	0.0623	3115.0	125.0	3115.0	1
995930-2	20	48.1850	48.2859	48.2855	0.0004	No	0.1005	5025.0	125.0	5025.0	1
995931-1	20	50.3837	50.4676	50.4674	0.0002	No	0.0837	4185.0	125.0	4185.0	1
995931-2	20	49.4166	49.5113	49.5109	0.0004	No	0.0943	4715.0	125.0	4715.0	1
995931-3	3	47.6197	47.7105	47.7101	0.0004	No	0.0904	30133.3	833.3	30133.3	1
995933-1	100	73.1413	73.2054	73.2054	0.0000	No	0.0641	641.0	25.0	641.0	1
995933-2	100	65.9571	65.9885	65.9885	0.0000	No	0.0314	314.0	25.0	314.0	1
995933-3	100	68.1785	68.2209	68.2205	0.0004	No	0.0420	420.0	25.0	420.0	1
995933-4	100	73.8279	73.8681	73.8680	0.0001	No	0.0401	401.0	25.0	401.0	1
995933-5	100	72.4704	72.5196	72.5192	0.0004	No	0.0488	488.0	25.0	488.0	1
995933-4D	100	76.2040	76.2455	76.2451	0.0004	No	0.0411	411.0	25.0	411.0	1
LCS	100	109.0957	109.1474	109.1473	0.0001	No	0.0516	516.0	25.0	516.0	1
995967	50	51.2503	51.3125	51.3123	0.0002	No	0.0620	1240.0	50.0	1240.0	1
995936-1	50	68.9039	68.9565	68.9564	0.0001	No	0.0525	1050.0	50.0	1050.0	1
995936-2	100	75.7664	75.8199	75.8196	0.0003	No	0.0532	532.0	25.0	532.0	1
995936-3	100	65.6296	65.6863	65.6863	0.0000	No	0.0567	567.0	25.0	567.0	1
995936-4	100	74.7140	74.7701	74.7698	0.0003	No	0.0558	558.0	25.0	558.0	1
995970-1	100	110.4365	110.4765	110.4761	0.0004	No	0.0396	396.0	25.0	396.0	1
995970-2	100	51.5077	51.5525	51.5523	0.0002	No	0.0446	446.0	25.0	446.0	1
995970-3	100	111.3748	111.41	111.41	0.0000	No	0.0352	352.0	25.0	352.0	1
995970-4	50	51.1304	51.2042	51.204	0.0002	No	0.0736	1472.0	50.0	1472.0	1
995970-5	100	108.6921	108.7288	108.7287	0.0001	No	0.0366	366.0	25.0	366.0	1
LCSD	100				0.0000	No	0.0000	0.0	25.0	ND	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

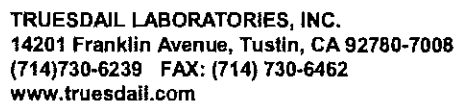
Batch: 07TDS11B

Date Calculated: 7/11/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
995930-1	5140	0.61	3341	0.93
995930-2	8460	0.59	5499	0.91
995931-1	7090	0.59	4608.5	0.91
995931-2	7840	0.60	5096	0.93
995931-3	42400	0.71	27560	1.09
995933-1	999	0.64	649.35	0.99
995933-2	566	0.55	367.9	0.85
995933-3	706	0.59	458.9	0.92
995933-4	665	0.60	432.25	0.93
995933-5	862	0.57	560.3	0.87
995933-4D	665	0.62	432.25	0.95
LCS				
995967	1810	0.69	1176.5	1.05
995936-1	1807	0.58	1174.55	0.89
995936-2	969	0.55	629.85	0.84
995936-3	937	0.61	609.05	0.93
995936-4	843	0.66	547.95	1.02
995970-1	681	0.58	442.65	0.89
995970-2	723	0.62	469.95	0.95
995970-3	587	0.60	381.55	0.92
995970-4	2110	0.70	1371.5	1.07
995970-5	594	0.62	386.1	0.95







**[IM3Plant-WDR-316]**

995931

DATE 07/05/11 PAGE 1 OF 1

COMPANY		CH2M HILL /E2																		COMMENTS				
PROJECT NAME		PG&E Topock IM3																						
PHONE		530-229-3303		FAX		530-339-3303																		
ADDRESS		155 Grand Ave Ste 1000 Oakland, CA 94612																						
P.O. NUMBER		408401.01.DM																						
SAMPLERS (SIGNATURE)																								
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr(VI) (218.6) Lab Filtered	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								
SC-700B-WDR-316	07/05/11	1500		X		X	X	X	X	X		X			X		4	} pH = 6 200.7, 200.8						
SC-100B-WDR-316	07/05/11	1500		X		X	X	X	X		X			X		4								
SC-701-WDR-316	07/05/11	1500		X	X	X	X				X		X			4								
				For Sample Conditions See Form Attached																				
ALERT !! Level III LOC																		12	TOTAL NUMBER OF CONTAINERS					

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"/> 3.6 °C °F		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn		
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			

CO

# 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
07/06/11	995930-1	7.0	5.00	9.5	10:15	SB
07/06/11	995931-1	7.0	5.00	9.5	10:20	SB
↓	↓ -2	↓	↓	↓	10:25	↓
↓	↓ -3	↓	↓	↓	10:30	↓
07/06/11	995932-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
07/06/11	995933-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
07/06/11	995934-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
07/07/11	995908-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓

# Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
995876 (5)	<1	<2	6/30/11	h	Y	-
995890	<1	>2	6/30/11	pk	No	RS @ 1345 pm
995897 (1-3)	<1	>2	↓	↓	↓	↓
995929	Solid		6/30/11	M.M	Yes	TT < C
995932 (1-6)	<1	<2	↓	↓	↓	-
995933 (1-5)	↓	↓	↓	↓	↓	-
995934 (1-8)	↓	↓	↓	↓	↓	-
995930 (1-2)	<1	>2	7/6/11	ES	No	yes @ 11:00 a.m
995931 (1-3)	<1	>2	↓	↓	↓	↓
995967	<1	<2	7/7/11	M.M	Yes	-
995968 (1-10)	↓	↓	↓	↓	↓	-
995969 (1-8)	↓	↓	↓	↓	↓	-
995970 (1-6)	↓	↓	↓	↓	↓	-
995971 (1-3)	↓	↓	↓	↓	↓	-
995936 (1-4)	<1	>2	7/7/11	pk	No	RS @ 230 pm
995939	<1	>2	↓	↓	↓	↓
995960 (1-3)	<1	>2	↓	↓	↓	↓
995979	<1	>2	↓	↓	↓	yes @ 229 pm
995990 (1-12)	<1	<2	7/8/11	M.M	Yes	-
995991 (1-4)	↓	↓	↓	↓	↓	-
995992 (1-7)	↓	↓	↓	↓	↓	-
995993 (1-10)	↓	↓	↓	↓	↓	-
996012	<1	<2	7/11/11	pk	No	No
996008 (1-6)	<1	<2	7/11/11	M.M	Yes	-
996009 (1-6)	↓	↓	↓	↓	↓	-
996010 (1-5)	↓	↓	↓	↓	↓	-
995980	Solid	-	7/11/11	MM	Yes	-
995962	<1	<2	7/11/11	ES	No	No
967	↓	↓	↓	↓	↓	↓
964	↓	↓	↓	↓	↓	↓
965	↓	↓	↓	↓	↓	↓
982	↓	↓	↓	↓	↓	↓
983	↓	↓	↓	↓	↓	↓
987	↓	↓	↓	↓	↓	↓
996007	↓	↓	↓	↓	↓	↓
004	↓	↓	↓	↓	↓	↓
005	↓	↓	↓	↓	↓	↓
012	↓	↓	↓	↓	↓	↓
996053 (1-7)	<1	<2	7/13/11	MM	Yes	-
996026 (1-6)	<1	<2	7/13/11	ES	No	-
996051	<1	>2	↓	↓	↓	yes @ 11:00 a.m
996052 (1-7)	<1	<2	↓	↓	↓	-
996021 (1-4)	<1	>2	↓	↓	↓	yes with 000
996045 (1-3)	↓	↓	↓	↓	↓	↓
996059-4	↓	<2	↓	↓	↓	↓
996061	↓	↓	↓	↓	↓	-
062	↓	↓	↓	↓	↓	-
673 (7.8.9)	↓	>2	↓	↓	↓	yes @ 11:00
996027	<1	<2	7/11			

M.M 7/15/11

hinkley



TRUESDAIL LABORATORIES, INC.

## Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 995 931

Date Delivered: 07/05/11 Time: 22:30 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)? 3.6°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
16. Comments: \_\_\_\_\_
17. Sample Check-In completed by Truesdail Log-In/Receiving: Luda 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

July 26, 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-317 PROJECT, GROUNDWATER MONITORING, TLI NO.: 996051

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-317 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 July 12, 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.


The straight run for the matrix spike for sample SC-700B-WDR-317 for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery was within acceptable limits, the data from the straight run is reported.

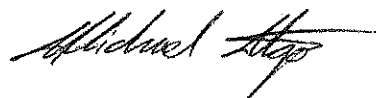
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

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.

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**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.:** 408401.01.DM

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(714) 730-6239 · FAX (714) 730-6462  
[www.truesdail.com](http://www.truesdail.com)

**Laboratory No.:** 996051

**Date:** July 26, 2011

**Collected:** July 12, 2011

**Received:** July 12, 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	Sonya Bersudsky

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

Attention: Shawn Duffy

Laboratory No.: 996051  
Date Received: July 12, 2011

Project Name: PG&E Topock Project  
Project No.: 408401.01.DM  
P.O. No.: 408401.01.DM

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
996051-001	SC-700B-WDR-317	E120.1	NONE	7/12/2011	14:00	EC	7210	umhos/cm	2.00
996051-001	SC-700B-WDR-317	E200.8	NONE	7/12/2011	14:00	Chromium	ND	ug/L	1.0
996051-001	SC-700B-WDR-317	E200.8	NONE	7/12/2011	14:00	Manganese	ND	ug/L	1.0
996051-001	SC-700B-WDR-317	E218.6	LABFLT	7/12/2011	14:00	Chromium, hexavalent	ND	ug/L	0.20
996051-001	SC-700B-WDR-317	SM2130B	NONE	7/12/2011	14:00	Turbidity	ND	NTU	0.100
996051-001	SC-700B-WDR-317	SM2540C	NONE	7/12/2011	14:00	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.

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## 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: 408401.01.DM

Project Number: 408401.01.DM

Laboratory No. 996051

Page 1 of 8

Printed 7/26/2011

Samples Received on 7/12/2011 10:00:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-317	996051-001	07/12/2011 14:00	Water

### Specific Conductivity - EPA 120.1

Batch 07EC11C

7/13/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996051-001 Specific Conductivity	umhos/cm	07/13/2011	1.00	0.0380	2.00	7210

#### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

#### Duplicate

Lab ID = 996051-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7220	7210	0.139	0 - 10

#### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	715	706	101.	90 - 110

#### MRCCS - Secondary

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

#### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	985	998	98.7	90 - 110

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008




**Client: E2 Consulting Engineers, Inc.**
**Project Name: PG&E Topock Project**
**Page 2 of 8**
**Project Number: 408401.01.DM**
**Printed 7/26/2011**
**Chrome VI by EPA 218.6**

Batch 07CrH11G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996051-001 Chromium, Hexavalent	ug/L	07/13/2011 11:44	1.05	0.0210	0.20	ND

**Method Blank**

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

**Duplicate**

Lab ID = 996028-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	2.24	2.24	0.0446	0 - 20

**Lab Control Sample**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.08	5.00	102.	90 - 110

**Matrix Spike**

Lab ID = 995971-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	9.89	9.90(5.30)	99.9	90 - 110

**Matrix Spike**

Lab ID = 996028-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.06	1.06(1.06)	100.	90 - 110

**Matrix Spike**

Lab ID = 996028-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.47	7.54(5.30)	98.7	90 - 110

**Matrix Spike**

Lab ID = 996028-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.77	6.88(5.30)	97.9	90 - 110

**Matrix Spike**

Lab ID = 996028-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	18.1	18.2(10.6)	99.8	90 - 110

**Matrix Spike**

Lab ID = 996028-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.04	1.06(1.06)	98.4	90 - 110

**Matrix Spike**

Lab ID = 996051-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.12	1.06(1.06)	105.	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 8

Project Number: 408401.01.DM

Printed 7/26/2011

Matrix Spike						Lab ID = 996051-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.17	5.25(5.25)	98.5	90 - 110
Matrix Spike						Lab ID = 996053-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.11	1.06(1.06)	105	90 - 110
Matrix Spike						Lab ID = 996053-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	8.02	7.96(5.30)	101.	90 - 110
Matrix Spike						Lab ID = 996053-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.40	6.41(5.30)	99.9	90 - 110
Matrix Spike						Lab ID = 996053-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.10	1.06(1.06)	103.	90 - 110
Matrix Spike						Lab ID = 996053-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.89	7.97(5.30)	98.5	90 - 110
Matrix Spike						Lab ID = 996053-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.58	1.60(1.06)	98.3	90 - 110
Matrix Spike						Lab ID = 996053-007
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.10	1.06(1.06)	104.	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.87	5.00	97.5	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	10.2	10.0	102.	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.1	10.0	101.	95 - 105

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 8

Project Number: 408401.01.DM

Printed 7/26/2011

## Metals by EPA 200.8, Total

Batch 071811B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996051-001 Chromium	ug/L	07/18/2011 20:45	5.00	0.110	1.0	ND
Manganese	ug/L	07/18/2011 20:45	5.00	0.980	1.0	ND

### Method Blank

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

### Duplicate

Lab ID = 996051-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	ND	0.00	0	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.5	50.0	99.1	85 - 115
Manganese	ug/L	1.00	49.3	50.0	98.6	85 - 115

### Matrix Spike

Lab ID = 996051-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	237.	250.(250.)	94.9	75 - 125
Manganese	ug/L	5.00	233	250.(250.)	93.2	75 - 125

### Matrix Spike Duplicate

Lab ID = 996051-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	238.	250.(250.)	95.4	75 - 125
Manganese	ug/L	5.00	232.	250.(250.)	92.8	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.3	50.0	96.6	90 - 110
Manganese	ug/L	1.00	48.6	50.0	97.2	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.6	50.0	95.2	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.6	50.0	95.3	90 - 110

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 8

Project Number: 408401.01.DM

Printed 7/26/2011

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	47.6	50.0	95.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	47.6	50.0	95.2	80 - 120

**Total Dissolved Solids by SM 2540 C**

Batch 07TDS11D

7/13/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996051-001 Total Dissolved Solids	mg/L	07/13/2011	1.00	0.434	125	4280

Method Blank

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

Duplicate

Lab ID = 996073-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	375	381	1.59	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	516	500.	103.	90 - 110

**Turbidity by SM 2130 B**

Batch 07TUC11F

7/13/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996051-001 Turbidity	NTU	07/13/2011	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 996051-001

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	7.97	8.00	99.6	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



**TRUESDAIL LABORATORIES, INC.**

*Report Continued*

**Client: E2 Consulting Engineers, Inc.**

**Project Name: PG&E Topock Project**

**Page 8 of 8**

**Project Number: 408401.01.DM**

**Printed 7/26/2011**

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**



Mona Nassimi

Manager, Analytical Services



## Calculations

Date Calculated: 7/15/11

[illegible]

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

Arjo  
Reviewer Printed Name

Reviewer Signature

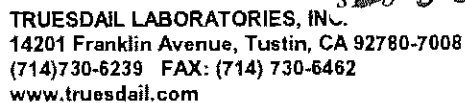
### TDS/EC CHECK

Date Calculated: 7/15/11

[illegible]

B. H.





Rec'd 07/12/11  
s176 96051

## [PM3Plant-WDR-317]

996051

COC Number

### TURNAROUND TIME

**10 Days**

DATE 07/12/11

PAGE 1 OF 1

COMPANY				COMMENTS											
PROJECT NAME															
PHONE															
ADDRESS															
P.O. NUMBER															
SAMPLERS (SIGNATURE)															
SAMPLE I.D.		DATE	TIME	DESCRIPTION	Cr6 (218.6)	Lab Filtered	Total Metals (200.7)	Cr, Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)	NUMBER OF CONTAINERS			
SC-700B-WDR-317	07/12/11	1400	Water	X	X	X	X		X					3	PH=5 (200.7)
												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	7-12-11 14:15	RECEIVED	COOL <input checked="" type="checkbox"/> WARM <input type="checkbox"/> 4.2°C
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	7-12-11 14:15	CUSTODY SEALED	YES <input type="checkbox"/> NO <input type="checkbox"/>
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	7-12-11 22:00	SPECIAL REQUIREMENTS:	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	7/12/11 22:00		
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			

041



# 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
07/02/11	996009-5	9.5	N/A	N/A	N/A	SB
↓	↓ -6	↓	↓	↓	↓	↓
07/08/11	996010-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
07/12/11	996026-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
07/12/11	996027-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
07/12/11	996028-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
07/13/11	996051	7.0	5.00	9.5	9:25	SB
07/13/11	996052-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
07/13/11	996053-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓

# Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
995876 (5)	<1	<2	6/30/11	HR	Y	-
995890	<1	>2	6/30/11	PK	NO	yes @ 1345 pm
995897 (1-3)	<1	>2	↓	↓	↓	↓
995929	Solid		6/30/11	M.M	yes	T.T.C
995932 (1-6)	<1	<2	↓	↓	↓	-
995933 (1-5)	↓	↓	↓	↓	↓	-
995934 (1-8)	↓	↓	↓	↓	↓	-
995930 (1-2)	<1	>2	7/6/11	ES	NO	yes @ 11:00 a.m
995931 (1-3)	<1	>2	↓	↓	↓	↓
995967	<1	<2	7/7/11	M.M	yes	-
995968 (1-10)	↓	↓	↓	↓	↓	-
995969 (1-8)	↓	↓	↓	↓	↓	-
995970 (1-6)	↓	↓	↓	↓	↓	-
995971 (1-3)	↓	↓	↓	↓	↓	-
995936 (1-4)	<1	>2	7/7/11	PK	NO	yes @ 230 pm
995939	<1	>2	↓	↓	↓	↓
995960 (1-3)	<1	>2	↓	↓	↓	↓
995979	<1	>2	↓	↓	↓	yes @ 220 pm
995990 (1-12)	<1	<2	7/8/11	M.M	yes	-
995991 (1-4)	↓	↓	↓	↓	↓	-
995992 (1-7)	↓	↓	↓	↓	↓	-
995993 (1-10)	↓	↓	↓	↓	↓	-
996012	<1	<2	7/11/11	PK	NO	NO
996008 (1-6)	<1	<2	7/11/11	M.M	yes	-
996009 (1-6)	↓	↓	↓	↓	↓	-
996010 (1-5)	↓	↓	↓	↓	↓	-
995980	Solid	-	7/11/11	MM	yes	-
995962	<1	<2	7/11/11	ES	NO	NO
967	↓	↓	↓	↓	↓	↓
964	↓	↓	↓	↓	↓	↓
965	↓	↓	↓	↓	↓	↓
962	↓	↓	↓	↓	↓	↓
963	↓	↓	↓	↓	↓	↓
967	↓	↓	↓	↓	↓	↓
996007	↓	↓	↓	↓	↓	↓
004	↓	↓	↓	↓	↓	↓
005	↓	↓	↓	↓	↓	↓
012	↓	↓	↓	↓	↓	↓
996053 (1-7)	<1	<2	7/13/11	MM	yes	-
996026 (1-6)	<1	<2	7/13/11	ES	NO	-
996051	<1	>2	↓	↓	↓	yes @ 11:00 a.m
996052 (1-7)	<1	<2	↓	↓	↓	-
996021 (1-4)	<1	>2	↓	↓	↓	yes @ 11:00 a.m
996045 (1-3)	↓	↓	↓	↓	↓	↓
996059-4	↓	<2	↓	↓	↓	↓
996061	↓	↓	↓	↓	↓	↓
062	↓	↓	↓	↓	↓	↓
673 (7.8.11)	↓	>2	↓	↓	↓	yes @ 11:00
996027	<1	<2	7/11			

M.M 7/15

thinkley



TRUESDAIL LABORATORIES, INC.

## Sample Integrity & Analysis Discrepancy Form

Client: EL

Lab # 996051

Date Delivered: 07/12/11 Time: 2:00 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)? 1.2°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 ☐ 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: Linda Strabian

# 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

August 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-318 PROJECT, GROUNDWATER MONITORING, TLI NO.: 996207

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-318 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 July 19, 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.


The straight run for the matrix spike for sample SC-700B-WDR-318 for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery was within acceptable limits, the data from the straight run is reported.

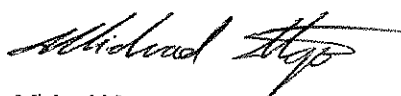
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

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



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**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.:** 408401.01.DM

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

**Laboratory No.:** 996207

**Date:** August 1, 2011

**Collected:** July 19, 2011

**Received:** July 19, 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	Sonya Bersudsky

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(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.:** 996207

**Date Received:** July 19, 2011

**Project Name:** PG&E Topock Project

**Project No.:** 408401.01.DM

**P.O. No.:** 408401.01.DM

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
996207-001	SC-700B-WDR-318	E120.1	NONE	7/19/2011	14:30	EC	7220	umhos/cm	2.00
996207-001	SC-700B-WDR-318	E200.8	NONE	7/19/2011	14:30	Chromium	ND	ug/L	1.0
996207-001	SC-700B-WDR-318	E200.8	NONE	7/19/2011	14:30	Manganese	1.6	ug/L	1.0
996207-001	SC-700B-WDR-318	E218.6	LABFLT	7/19/2011	14:30	Chromium, hexavalent	ND	ug/L	0.20
996207-001	SC-700B-WDR-318	SM2130B	NONE	7/19/2011	14:30	Turbidity	ND	NTU	0.100
996207-001	SC-700B-WDR-318	SM2540C	NONE	7/19/2011	14:30	Total Dissolved Solids	4270	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:

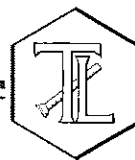
Results below 0.01ppm will have two (2) significant figures.

Result above or equal to 0.01ppm will have three (3) significant figures.

Quality Control data will always have three (3) significant figures.

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## 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: 408401.01.DM

Project Number: 408401.01.DM

Laboratory No. 996207

Page 1 of 6

Printed 8/1/2011

Samples Received on 7/19/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-318	996207-001	07/19/2011 14:30	Water

### Specific Conductivity - EPA 120.1

Batch 07EC11D

7/20/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996207-001 Specific Conductivity	umhos/cm	07/20/2011	1.00	0.0380	2.00	7220

#### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

#### Duplicate

Lab ID = 996207-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7230	7220	0.138	0 - 10

#### Lab Control Sample

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

#### MRCCS - Secondary

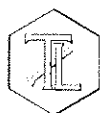
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	711	706	101.	90 - 110

#### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	994	998	99.6	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.

008



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 6

Project Number: 408401.01.DM

Printed 8/1/2011

## Chrome VI by EPA 218.6

Batch 07CrH11K

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996207-001 Chromium, Hexavalent	ug/L	07/20/2011 10:18	1.05	0.0210	0.20	ND

### Method Blank

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

### Duplicate

Lab ID = 996121-006

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	52.5	624.	615	1.43	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.15	5.00	103.	90 - 110

### Matrix Spike

Lab ID = 996207-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.25	5.25(5.25)	100.	90 - 110

### Matrix Spike

Lab ID = 996207-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.14	1.16(1.06)	98.1	90 - 110

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00	98.0	90 - 110

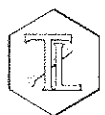
### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.58	10.0	95.8	95 - 105

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.99	10.0	99.9	95 - 105





# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 6

Project Number: 408401.01.DM

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## Metals by EPA 200.8, Total

Batch 072511A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996207-001 Chromium	ug/L	07/25/2011 13:41	5.00	0.110	1.0	ND
Manganese	ug/L	07/25/2011 13:41	5.00	0.980	1.0	1.6

### Method Blank

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

### Duplicate

Lab ID = 996207-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	1.63	1.58	3.24	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	53.3	50.0	106.	85 - 115
Manganese	ug/L	1.00	52.9	50.0	106.	85 - 115

### Matrix Spike

Lab ID = 996207-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	239.	250.(250.)	95.6	75 - 125
Manganese	ug/L	5.00	241	252.(250.)	95.8	752 - 125

### Matrix Spike Duplicate

Lab ID = 996207-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	254	250.(250.)	102.	75 - 125
Manganese	ug/L	5.00	264.	252.(250.)	105.	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	52.5	50.0	105.	90 - 110
Manganese	ug/L	1.00	52.5	50.0	105.	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	50.6	50.0	101.	90 - 110

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 6

Project Number: 408401.01.DM

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## Total Dissolved Solids by SM 2540 C

Batch 07TDS11F

7/21/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996207-001 Total Dissolved Solids	mg/L	07/21/2011	1.00	0.434	125	4270

### Method Blank

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

### Duplicate

Lab ID = 996207-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4380	4270	2.54	0 - 5

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	502	500.	100.	90 - 110

## Turbidity by SM 2130 B

Batch 07TUC11K

7/20/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996207-001 Turbidity	NTU	07/20/2011	1.00	0.0140	0.100	ND

### Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

### Duplicate

Lab ID = 996207-001

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	7.51	8.00	93.9	90 - 110

### Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.58	8.00	94.8	90 - 110



**TRUESDAIL LABORATORIES, INC.**

*Report Continued*

**Client: E2 Consulting Engineers, Inc.**

**Project Name: PG&E Topock Project**

**Page 6 of 6**

**Project Number: 408401.01.DM**

**Printed 8/1/2011**

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**

  
for - Mona Nassimi

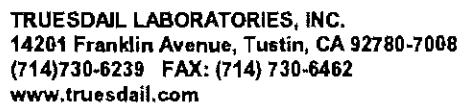
Manager, Analytical Services



### TDS/EC CHECK

Date Calculated: 7/26/11

[illegible]



996 207

**10 Days**

PAGE 1 OF 1

[IM3Plant-WDR-318]

COMPANY				E2														COMMENTS			
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				408401.01.DM				TEAM				1									
SAMPLERS (SIGNATURE)																					
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6 (218.6)	Lab Filtered	Total Metals (200.7)	Cr, Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)								NUMBER OF CONTAINERS			
SC-700B-WDR-318	07/19/11	1430	Water	x	x	x	x		x									3	pH=6 (200)		
																		3	TOTAL NUMBER OF CONTAINERS		

Rec'd 07/19/11  
s/86 996207

**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 °F
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time		
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	For Sample Condition See Form Attached	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time		

For Sample Conditions  
See Form Attached

035

# 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
07/13/11	996053-4	9.5	N/A	N/A	N/A	SB
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
07/14/11	996097-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
07/14/11	996098-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
07/14/11	996099	9.5	N/A	N/A	N/A	SB
07/14/11	996100-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
07/14/11	996101-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
07/15/11	996121-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
07/15/11	996122	9.5	N/A	N/A	N/A	SB
07/15/11	996123-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
07/20/11	996207	7.0	5.00	9.5	9:30	SB

*ah*

# Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
700583 (1-8)	<1	<2	7/13/11	MG	No	—
700585 (1-6)	<1	<2	7/13/11	MG	No	—
700601 (1-4)	<1	<2	7/13/11	MG	No	—
700602 (1-4)	<1	<2	7/13/11	MG	No	—
996100 (1-2)	<1	<2	7/14/11	ES	No	—
996101 (1-2)	↓	↓	↓	↓	↓	—
996097 (1-6)	<1	<2	7/14/11	M.M.	Yes	—
996058 (1-4)	↓	↓	↓	↓	↓	—
996059	↓	↓	↓	↓	↓	—
996122	<1	<2	7/15/11	M.M.	Yes	—
996123 (1-4)	↓	↓	↓	↓	↓	—
996118	>1	<2	↓	↓	↓	—
996124	↓	↓	↓	↓	↓	—
996128	↓	↓	↓	↓	↓	—
996121 (1-6)	<1	<2	7/18/11	ES	No	—
996088 (1-4)	<1	<2	7/11/11	M.M.	Yes	—
996202 (1-3)	<1	72	7/20/11	ES	No	2:30 pm
996207	<1	72	7/21/11	ES	No	yes @ 10:00
996255 (1-5)	<1	<2	7/22/11	M.M.	Yes	—
996254 (1-3)	<1	<2	↓	↓	↓	—
996288	>1	<2	↓	↓	↓	—
996284	↓	↓	↓	↓	↓	—
996282	↓	↓	↓	↓	↓	—
996283	↓	↓	↓	↓	↓	—
996027 (1-2)	<1	<2	7/17/11	ES	Yes	—
996331 (1-7)	<1	<2	7/27/11	M.M.	Yes	—
996333	>1	<2	↓	↓	↓	—
996318	Solid	↓	↓	↓	↓	—
996332	<1	72	7/27/11	ES	No	yes @ 1:00 pm
996325 (1-3)	↓	↓	↓	↓	↓	↓
996348 (1-2)	<1	<2	7/28/11	M.M.	Yes	—
996349 (1-1)	<1	>2	↓	↓	↓	yes @ 1:30 pm
996361 (1-2)	<1	<2	7/29/11	M.M.	Yes	—
996362 (1-7)	<1	↓	↓	↓	↓	—
996363 (1-3)	↓	↓	↓	↓	↓	—
996364 (1-8,10)	↓	↓	↓	↓	↓	—
996365 (1-10)	↓	↓	↓	↓	↓	—
996366 (1-9)	↓	↓	↓	↓	↓	—
996367	↓	↓	↓	↓	↓	—





TRUESDAIL LABORATORIES, INC.

## Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 996207

Date Delivered: 04/19/11 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)? 4.6°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
16. Comments: \_\_\_\_\_
17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Stuebner

**ALERT!!**  
**Level III QC**

# 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

August 3, 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-319 PROJECT, GROUNDWATER  
MONITORING, TLI No.: 996332

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-319 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 July 26, 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.


The straight run for the matrix spike for sample SC-700B-WDR-319 for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery was within acceptable limits, the data from the straight run is reported.

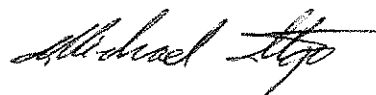
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

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.

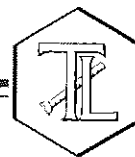
Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

*for*   
Mona Nassimi  
Manager, Analytical Services

  
Michael Ngo  
Quality Assurance/Quality Control Officer

# TRUESDAIL LABORATORIES, INC.

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**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.:** 408401.01.DM

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**Laboratory No.:** 996332

**Date:** August 3, 2011

**Collected:** July 26, 2011

**Received:** July 26, 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	Sonya Bersudsky



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

**Attention:** Shawn Duffy

**Laboratory No.:** 996332

**Date Received:** July 26, 2011

**Project Name:** PG&E Topock Project

**Project No.:** 408401.01.DM

**P.O. No.:** 408401.01.DM

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
996332-001	SC-700B-WDR-319	E120.1	NONE	7/26/2011	14:05	EC	7410	umhos/cm	2.00
996332-001	SC-700B-WDR-319	E200.8	NONE	7/26/2011	14:05	Chromium	ND	ug/L	1.0
996332-001	SC-700B-WDR-319	E200.8	NONE	7/26/2011	14:05	Manganese	ND	ug/L	1.0
996332-001	SC-700B-WDR-319	E218.6	LABFLT	7/26/2011	14:05	Chromium, hexavalent	ND	ug/L	0.20
996332-001	SC-700B-WDR-319	SM2130B	NONE	7/26/2011	14:05	Turbidity	ND	NTU	0.100
996332-001	SC-700B-WDR-319	SM2540C	NONE	7/26/2011	14:05	Total Dissolved Solids	4380	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.

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## 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: 408401.01.DM

Project Number: 408401.01.DM

Laboratory No. 996332

Page 1 of 7

Printed 8/3/2011

Samples Received on 7/26/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-319	996332-001	07/26/2011 14:05	Water

### Specific Conductivity - EPA 120.1

Batch 07EC11F

7/27/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996332-001 Specific Conductivity	umhos/cm	07/27/2011	1.00	0.0380	2.00	7410

#### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

#### Duplicate

Lab ID = 996332-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7400	7410	0.135	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	702	706	99.4	90 - 110

#### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	972	998	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.

008



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 7

Project Number: 408401.01.DM

Printed 8/3/2011

**Chrome VI by EPA 218.6**

Batch: 07CrH11M

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996332-001 Chromium, Hexavalent	ug/L	07/27/2011 09:17	1.05	0.0210	0.20	ND

Method Blank

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

Duplicate

Lab ID = 996331-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	2.50	2.53	1.23	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.20	5.00	104	90 - 110

Matrix Spike

Lab ID = 996331-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	8.07	7.83(5.30)	104.	90 - 110

Matrix Spike

Lab ID = 996331-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.47	6.36(5.30)	102.	90 - 110

Matrix Spike

Lab ID = 996331-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.83	1.79(1.06)	104.	90 - 110

Matrix Spike

Lab ID = 996331-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	9.59	9.39(5.30)	104.	90 - 110

Matrix Spike

Lab ID = 996331-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.14	6.88(5.30)	105.	90 - 110

Matrix Spike

Lab ID = 996331-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.46	1.50(1.06)	96.2	90 - 110

Matrix Spike

Lab ID = 996331-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.40	1.38(1.06)	102.	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 7

Project Number: 408401.01.DM

Printed 8/3/2011

## Matrix Spike

Lab ID = 996331-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.14	1.06(1.06)	108.	90 - 110

## Matrix Spike

Lab ID = 996332-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.56	5.25(5.25)	106.	90 - 110

## Matrix Spike

Lab ID = 996332-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.09	1.06(1.06)	103.	90 - 110

## MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.16	5.00	103.	90 - 110

## 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	10.4	10.0	104.	95 - 105

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.1	10.0	101.	95 - 105



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 7

Project Number: 408401.01.DM

Printed 8/3/2011

## Metals by EPA 200.8, Total

Batch 072811A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996332-001 Chromium	ug/L	07/28/2011 16:04	5.00	0.110	1.0	ND
Manganese	ug/L	07/28/2011 16:04	5.00	0.980	1.0	ND

### Method Blank

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

### Duplicate

Lab ID = 996332-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	ND	0.00	0	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.8	50.0	104.	85 - 115
Manganese	ug/L	1.00	52.2	50.0	104.	85 - 115

### Matrix Spike

Lab ID = 996332-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	217.	250.(250.)	86.9	75 - 125
Manganese	ug/L	5.00	228.	250.(250.)	91.2	75 - 125

### Matrix Spike Duplicate

Lab ID = 996332-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	227.	250.(250.)	90.8	75 - 125
Manganese	ug/L	5.00	228.	250.(250.)	91.1	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.5	50.0	103.	90 - 110
Manganese	ug/L	1.00	52.0	50.0	104	90 - 110

### MRCVS - Primary

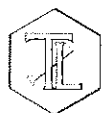
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.3	50.0	94.7	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.1	50.0	94.3	90 - 110

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 7

Project Number: 408401.01.DM

Printed 8/3/2011

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	50.1	50.0	100.	80 - 120

## Interference Check Standard AB

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

## Total Dissolved Solids by SM 2540 C

Batch 07TDS11G

7/28/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996332-001 Total Dissolved Solids	mg/L	07/28/2011	1.00	0.400	125	4380

## Method Blank

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

## Duplicate

Lab ID = 996332-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4460	4380	1.92	0 - 5

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	475	500.	95.0	90 - 110

## Turbidity by SM 2130 B

Batch 07TUC11O

7/27/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996332-001 Turbidity	NTU	07/27/2011	1.00	0.0140	0.100	ND

## Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

## Duplicate

Lab ID = 996332-001

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

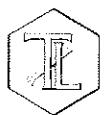
## Lab Control Sample

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

## Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.83	8.00	97.9	90 - 110

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**TRUESDAIL LABORATORIES, INC.**

*Report Continued*

**Client: E2 Consulting Engineers, Inc.**

**Project Name: PG&E Topock Project**

**Page 7 of 7**

**Project Number: 408401.01.DM**

**Printed 8/3/2011**

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**

*for - Sam Canale*

Mona Nassimi

Manager, Analytical Services



## Calculations


Date Calculated: 7/29/11

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

C = mL of sample filtered.

Analyst Printed Name

  
Analyst Signature

  
\_\_\_\_\_  
Reviewer Printed Name

\_\_\_\_\_  
Reviewer Signature

# Total Dissolved Solids by SM 2540 C

## TDS/EC CHECK

Batch: 07TDS11G

Date Calculated: 7/29/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
996303-2	147	0.61	95.55	0.93
996303-4	493	0.55	320.45	0.85
996331-1	501	0.59	325.65	0.92
996331-2	1640	0.64	1066	0.99
996331-3	479	0.58	311.35	0.90
996331-4	558	0.60	362.7	0.92
996331-5	591	0.62	384.15	0.95
996331-6	700	0.59	455	0.91
996331-7	990	0.61	643.5	0.93
996332	7400	0.59	4810	0.91
996332D	7400	0.60	4810	0.93
LCS				
996347	1092	0.62	709.8	0.95
996348-1	1709	0.60	1110.85	0.92
996348-2	2270	0.67	1475.5	1.03





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

# CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-319]

996332

COC Number

TURNAROUND TIME

10 Days

DATE 07/26/11

PAGE 1 OF 1

COMPANY E2				<div style="writing-mode: vertical-rl; transform: rotate(180deg);">           NUMBER OF CONTAINERS         </div>												COMMENTS			
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 408401.01.DM TEAM 1																			
SAMPLERS (SIGNATURE) <i>C. Knight</i>																			
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6 (218.6) Lab Filtered	Total Metals (200.7) Cr, Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)											
SC-700B-WDR-319	07/26/11	14:05	Water	X	X	X	X	X											
																	3	PH=6 (200.7)	
																	3		TOTAL NUMBER OF CONTAINERS

ALERT !!  
Level III QC

For Sample Conditions  
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished) <i>C. Knight</i>	Printed Name C. Knight	Company/Agency CH2M Hill	Date/Time 7-26-11 15:15	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/> 4.7°C
Signature (Received) <i>Rafael</i>	Printed Name Rafael	Company/Agency T.H.I.	Date/Time 7-26-11 15:15	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Signature (Relinquished) <i>Rafael</i>	Printed Name Rafael	Company/Agency T.H.I.	Date/Time 7-26-11 21:30	SPECIAL REQUIREMENTS:		
Signature (Received) <i>Linda</i>	Printed Name Linda	Company/Agency T.H.I.	Date/Time 7/26/11 21:30			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time			
Signature (Received)	Printed Name	Company/Agency	Date/Time			

038

## Hexavalent Chromium

## Method EPA 218.6 and SW 7199 Sample pH Log

[illegible]

# Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
700583 (1-8)	<1	<2	7/13/11	MG	No	—
700585 (1-6)	<1	<2	7/13/11	MG	No	—
700601 (1-4)	<1	<2	7/13/11	MG	No	—
700602 (1-4)	<1	<2	7/13/11	MG	No	—
996100 (1-2)	<1	<2	7/14/11	ES	No	—
996101 (1-2)	↓	↓	↓	↓	↓	—
996097 (1-6)	<1	<2	7/14/11	M.M	Yes	—
996058 (1-4)	↓	↓	↓	↓	↓	—
996099	↓	↓	↓	↓	↓	—
996122	<1	<2	7/15/11	M.M	Yes	—
996123 (1-4)	↓	↓	↓	↓	↓	—
996118	71	<2	↓	↓	↓	—
996124	↓	↓	↓	↓	↓	—
996128	↓	↓	↓	↓	↓	—
996121 (1-6)	<1	<2	7/18/11	ES	No	—
996088 (1-4)	<1	<2	7/11/11	M.M	Yes	—
996202 (1-3)	<1	72	7/20/11	ES	No	2:30 pm
996207	<1	72	7/21/11	ES	No	yes @ 10:00
996255 (1-5)	<1	<2	7/22/11	M.M	Yes	—
996254 (1-3)	<1	<2	↓	↓	↓	—
996288	71	<2	↓	↓	↓	—
996284	↓	↓	↓	↓	↓	—
996282	↓	↓	↓	↓	↓	—
996283	↓	↓	↓	↓	↓	—
996027 (1-2)	<1	<2	7/18/11	ES	Yes	—
996331 (1-7)	<1	<2	7/27/11	M.M	Yes	—
996333	71	<2	↓	↓	↓	—
996318	Solid	↓	↓	↓	↓	—
996332	<1	72	7/27/11	ES	No	yes @ 1:00 pm
996335 (1-3)	↓	↓	↓	↓	↓	↓
996348 (1-2)	<1	<2	7/28/11	M.M	Yes	—
996349 (1-1)	<1	72	↓	↓	↓	yes @ 11:30 am
996361 (1-7)	<1	<2	7/29/11	M.M	Yes	—
996362 (1-7)	<1	↓	↓	↓	↓	—
996363 (1-3)	↓	↓	↓	↓	↓	—
996364 (1-8,10)	↓	↓	↓	↓	↓	—
996365 (1-10)	↓	↓	↓	↓	↓	—
996366 (1-9)	↓	↓	↓	↓	↓	—
996367	↓	↓	↓	↓	↓	—
996397 (1-4)	<1	<2	08/01/11	M.M	Yes	—
996398 (1-6,8)	↓	↓	↓	↓	↓	—
996399 (1,3,5)	↓	↓	↓	↓	↓	—
996400	↓	↓	↓	↓	↓	—
996401 (1-4)	↓	↓	↓	↓	↓	—
996402 (1-5)	↓	↓	↓	↓	↓	—
996421 (1-4)	<1	<2	08/02/11	M.M	Yes	—
996422 (1-4)	↓	↓	↓	↓	↓	—
996423 (1-4)	↓	↓	↓	↓	↓	—
996424 (1-4)	↓	↓	↓	↓	↓	—



TRUESDAIL LABORATORIES, INC.

## Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 996332

Date Delivered: 07/26/11 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)? 4.7°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
16. Comments: \_\_\_\_\_
17. Sample Check-In completed by Truesdail Log-In/Receiving: hude



# 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	7-5-11	1500	7-5-11	1505	METER#1	7-5-11	1:00	-54.5	HOW PHELPS	7.1

Notes:

SC-100B	7-5-11	1500	7-5-11	1508	METER#1	7-5-11	1:00	-54.5	HOW PHELPS	7.2
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Notes:

SC-701	7-5-11	1500	7-5-11	1511	METER#1	7-5-11	1:00	-54.5	HOW PHELPS	7.0
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Notes:

SC-700B	7-12-11	1400	7-12-11	1405	METER#1	7-12-11	1:00	-53.2	HOW PHELPS	7.2
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Notes:

SC-700B	7-19-11	1430	7-19-11	1435	METER#1	7-19-11	1:00	-55.3	HOW PHELPS	7.0
---------	---------	------	---------	------	---------	---------	------	-------	------------	-----

Notes:

SC-700B	7-26-11	14:05	7-26-11	1411	METER #1	7-26-11	01:00	-53.9	C. Knight	7.1
---------	---------	-------	---------	------	----------	---------	-------	-------	-----------	-----

Notes:

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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

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

August 18, 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-320 PROJECT, GROUNDWATER  
MONITORING,  
TLI NO.: 996487

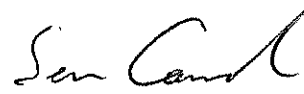
Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-320 project groundwater monitoring. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period 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 August 2, 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  
Manager, Analytical Services

  
Michael Ngo  
Quality Assurance/Quality Control Officer

# TRUESDAIL LABORATORIES, INC.

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**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.:** 408401.01.DM

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

**Laboratory No.:** 996487

**Date:** August 18, 2011

**Collected:** August 2, 2011

**Received:** August 2, 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	Sonya Bersudsky

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

**Laboratory No.:** 996487  
**Date Received:** August 2, 2011

**Attention:** Shawn Duffy

**Project Name:** PG&E Topock Project  
**Project No.:** 408401.01.DM  
**P.O. No.:** 408401.01.DM

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
996487-001	SC-700B-WDR-320	E120.1	NONE	8/2/2011	14:00	EC	7400	umhos/cm	2.00
996487-001	SC-700B-WDR-320	E200.7	NONE	8/2/2011	14:00	Aluminum	ND	ug/L	50.0
996487-001	SC-700B-WDR-320	E200.7	NONE	8/2/2011	14:00	BORON	988	ug/L	200
996487-001	SC-700B-WDR-320	E200.7	NONE	8/2/2011	14:00	Iron	ND	ug/L	20.0
996487-001	SC-700B-WDR-320	E200.8	NONE	8/2/2011	14:00	Antimony	ND	ug/L	10.0
996487-001	SC-700B-WDR-320	E200.8	NONE	8/2/2011	14:00	Arsenic	ND	ug/L	1.0
996487-001	SC-700B-WDR-320	E200.8	NONE	8/2/2011	14:00	Barium	10.2	ug/L	10.0
996487-001	SC-700B-WDR-320	E200.8	NONE	8/2/2011	14:00	Chromium	2.1	ug/L	1.0
996487-001	SC-700B-WDR-320	E200.8	NONE	8/2/2011	14:00	Copper	ND	ug/L	5.0
996487-001	SC-700B-WDR-320	E200.8	NONE	8/2/2011	14:00	Lead	ND	ug/L	10.0
996487-001	SC-700B-WDR-320	E200.8	NONE	8/2/2011	14:00	Manganese	3.6	ug/L	1.0
996487-001	SC-700B-WDR-320	E200.8	NONE	8/2/2011	14:00	Molybdenum	17.0	ug/L	10.0
996487-001	SC-700B-WDR-320	E200.8	NONE	8/2/2011	14:00	Nickel	ND	ug/L	10.0
996487-001	SC-700B-WDR-320	E200.8	NONE	8/2/2011	14:00	Zinc	ND	ug/L	10.0
996487-001	SC-700B-WDR-320	E218.6	LABFLT	8/2/2011	14:00	Chromium, hexavalent	1.5	ug/L	1.0
996487-001	SC-700B-WDR-320	E300	NONE	8/2/2011	14:00	Fluoride	2.42	mg/L	0.500
996487-001	SC-700B-WDR-320	E300	NONE	8/2/2011	14:00	Nitrate as N	3.94	mg/L	1.00
996487-001	SC-700B-WDR-320	E300	NONE	8/2/2011	14:00	Sulfate	469	mg/L	12.5
996487-001	SC-700B-WDR-320	SM2130B	NONE	8/2/2011	14:00	Turbidity	ND	NTU	0.100
996487-001	SC-700B-WDR-320	SM2540C	NONE	8/2/2011	14:00	Total Dissolved Solids	4360	mg/L	125
996487-001	SC-700B-WDR-320	SM4500NH3D	NONE	8/2/2011	14:00	Ammonia-N	1.58	mg/L	0.500
996487-001	SC-700B-WDR-320	SM4500NO2B	NONE	8/2/2011	14:00	Nitrite as N	ND	mg/L	0.0050

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Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
996487-002	SC-100B-WDR-320	E120.1	NONE	8/2/2011	14:00	EC	7800	umhos/cm	2.00
996487-002	SC-100B-WDR-320	E200.7	NONE	8/2/2011	14:00	Aluminum	ND	ug/L	50.0
996487-002	SC-100B-WDR-320	E200.7	NONE	8/2/2011	14:00	BORON	1000	ug/L	200
996487-002	SC-100B-WDR-320	E200.7	LABFLT	8/2/2011	14:00	Iron	ND	ug/L	10.0
996487-002	SC-100B-WDR-320	E200.7	NONE	8/2/2011	14:00	Iron	ND	ug/L	20.0
996487-002	SC-100B-WDR-320	E200.8	NONE	8/2/2011	14:00	Antimony	ND	ug/L	10.0
996487-002	SC-100B-WDR-320	E200.8	NONE	8/2/2011	14:00	Arsenic	3.5	ug/L	1.0
996487-002	SC-100B-WDR-320	E200.8	NONE	8/2/2011	14:00	Barium	26.5	ug/L	10.0
996487-002	SC-100B-WDR-320	E200.8	NONE	8/2/2011	14:00	Chromium	877	ug/L	1.0
996487-002	SC-100B-WDR-320	E200.8	NONE	8/2/2011	14:00	Copper	ND	ug/L	5.0
996487-002	SC-100B-WDR-320	E200.8	NONE	8/2/2011	14:00	Lead	ND	ug/L	10.0
996487-002	SC-100B-WDR-320	E200.8	LABFLT	8/2/2011	14:00	Manganese	9.2	ug/L	1.0
996487-002	SC-100B-WDR-320	E200.8	NONE	8/2/2011	14:00	Manganese	8.6	ug/L	1.0
996487-002	SC-100B-WDR-320	E200.8	NONE	8/2/2011	14:00	Molybdenum	24.7	ug/L	10.0
996487-002	SC-100B-WDR-320	E200.8	NONE	8/2/2011	14:00	Nickel	ND	ug/L	10.0
996487-002	SC-100B-WDR-320	E200.8	NONE	8/2/2011	14:00	Zinc	ND	ug/L	10.0
996487-002	SC-100B-WDR-320	E218.6	LABFLT	8/2/2011	14:00	Chromium, hexavalent	887	ug/L	21.0
996487-002	SC-100B-WDR-320	E300	NONE	8/2/2011	14:00	Fluoride	2.68	mg/L	0.500
996487-002	SC-100B-WDR-320	E300	NONE	8/2/2011	14:00	Nitrate as N	3.09	mg/L	1.00
996487-002	SC-100B-WDR-320	E300	NONE	8/2/2011	14:00	Sulfate	533	mg/L	12.5
996487-002	SC-100B-WDR-320	SM2130B	NONE	8/2/2011	14:00	Turbidity	ND	NTU	0.100
996487-002	SC-100B-WDR-320	SM2320B	NONE	8/2/2011	14:00	Alkalinity	136	mg/L	5.00
996487-002	SC-100B-WDR-320	SM2320B	NONE	8/2/2011	14:00	Bicarbonate	136	mg/L	5.00
996487-002	SC-100B-WDR-320	SM2320B	NONE	8/2/2011	14:00	Carbonate	ND	mg/L	5.00
996487-002	SC-100B-WDR-320	SM2540C	NONE	8/2/2011	14:00	Total Dissolved Solids	4590	mg/L	125
996487-002	SC-100B-WDR-320	SM4500NH3D	NONE	8/2/2011	14:00	Ammonia-N	ND	mg/L	0.500
996487-002	SC-100B-WDR-320	SM4500NO2B	NONE	8/2/2011	14:00	Nitrite as N	ND	mg/L	0.0050
996487-002	SC-100B-WDR-320	SM4500-PB_E	NONE	8/2/2011	14:00	Total Phosphorous-P	ND	mg/L	0.0200
996487-002	SC-100B-WDR-320	SM4500SI	NONE	8/2/2011	14:00	Soluble Silica	21.6	mg/L	1.00
996487-002	SC-100B-WDR-320	SM5310C	NONE	8/2/2011	14:00	Total Organic Carbon	0.529	mg/L	0.300

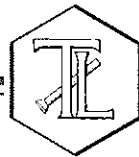
ND: Non Detected (below reporting limit)  
mg/L: Milligrams per liter.

**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.

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## 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: 408401.01.DM

Project Number: 408401.01.DM

Laboratory No. 996487

Page 1 of 29

Printed 8/18/2011

Samples Received on 8/2/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-320	996487-001	08/02/2011 14:00	Water
SC-100B-WDR-320	996487-002	08/02/2011 14:00	Water

### Anions By I.C. - EPA 300.0

Batch 08AN11D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-001 Nitrate as Nitrogen	mg/L	08/03/2011 14:55	5.00	0.0550	1.00	3.94
996487-002 Nitrate as Nitrogen	mg/L	08/03/2011 15:05	5.00	0.0550	1.00	3.09

#### Method Blank

Parameter	Unit	DF	Result
Nitrate as Nitrogen	mg/L	1.00	ND

#### Duplicate

Lab ID = 996474-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	ND	0.00	0	0 - 20

#### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00	100.0	90 - 110

#### Matrix Spike

Lab ID = 996474-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.00	2.00(2.00)	100.	85 - 115

#### Matrix Spike Duplicate

Lab ID = 996474-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	1.99	2.00(2.00)	99.4	85 - 115

#### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00	99.9	90 - 110

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008



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

## Anions By I.C. - EPA 300.0

Batch: 08AN11E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-001 Fluoride	mg/L	08/03/2011 16:26	5.00	0.0250	0.500	2.42
Sulfate	mg/L	08/03/2011 16:47	25.0	0.500	12.5	469.
996487-002 Fluoride	mg/L	08/03/2011 16:37	5.00	0.0250	0.500	2.68
Sulfate	mg/L	08/03/2011 16:58	25.0	0.500	12.5	533.

### Method Blank

Parameter	Unit	DF	Result
Fluoride	mg/L	1.00	ND
Sulfate	mg/L	1.00	ND
Nitrate as Nitrogen	mg/L	1.00	ND

### Duplicate

Lab ID = 996474-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Sulfate	mg/L	25.0	102.	100.	1.73	0 - 20

### Duplicate

Lab ID = 996483-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	5.00	14.9	15.8	5.99	0 - 20

### Duplicate

Lab ID = 996495-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	1.00	ND	0.00	0	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.14	4.00	104.	90 - 110
Sulfate	mg/L	1.00	20.0	20.0	100.0	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.03	4.00	101.	90 - 110

### Matrix Spike

Lab ID = 996474-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Sulfate	mg/L	25.0	200.	200.(100.)	100.	85 - 115

### Matrix Spike

Lab ID = 996483-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	5.00	34.3	35.8(20.0)	92.6	85 - 115

### Matrix Spike

Lab ID = 996495-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	1.00	2.00	2.00(2.00)	99.8	85 - 115

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010



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

## Nitrite SM 4500-NO2 B

Batch 08NO211B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-001 Nitrite as Nitrogen	mg/L	08/04/2011 11:13	1.00	0.000360	0.0050	ND
996487-002 Nitrite as Nitrogen	mg/L	08/04/2011 11:14	1.00	0.000360	0.0050	ND

### Method Blank

Parameter	Unit	DF	Result
Nitrite as Nitrogen	mg/L	1.00	ND

### Duplicate

Lab ID = 996487-001

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	0.0380	0.0400	95.0	90 - 110

### Matrix Spike

Lab ID = 996487-001

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	0.0191	0.0200	95.5	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0191	0.0200	95.5	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0191	0.0200	95.5	90 - 110





# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

## Alkalinity by SM 2320B

Batch: 08ALK11A

8/5/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-002 Alkalinity as CaCO <sub>3</sub>	mg/L	08/05/2011	1.00	1.68	5.00	136
Bicarbonate (Calculated)	mg/L	08/05/2011	1.00	0.153	5.00	136
Carbonate (Calculated)	mg/L	08/05/2011	1.00	0.153	5.00	ND

### Method Blank

Parameter	Unit	DF	Result
Alkalinity as CaCO <sub>3</sub>	mg/L	1.00	ND

### Duplicate

Lab ID = 996438-020

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO <sub>3</sub>	mg/L	1.00	83.0	84.0	1.20	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO <sub>3</sub>	mg/L	1.00	100.	100.	100.	90 - 110

### Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO <sub>3</sub>	mg/L	1.00	102	100.	102	90 - 110

### Matrix Spike

Lab ID = 996487-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO <sub>3</sub>	mg/L	1.00	244	236(100.)	108	75 - 125



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

**Specific Conductivity - EPA 120.1**

Batch 08EC11B

8/5/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-001 Specific Conductivity	umhos/cm	08/05/2011	1.00	0.0380	2.00	7400
996487-002 Specific Conductivity	umhos/cm	08/05/2011	1.00	0.0380	2.00	7800

**Method Blank**

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

**Duplicate**

Lab ID = 996487-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7800	7800	0.00	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	705	706	99.8	90 - 110

**MRCVS - Primary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	983	998	98.5	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

## Chrome VI by EPA 218.6

Batch: 08CrH11H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-001 Chromium, Hexavalent	ug/L	08/08/2011 10:09	5.25	0.136	1.0	1.5
996487-002 Chromium, Hexavalent	ug/L	08/08/2011 09:38	105	2.73	21.0	887.

### Method Blank

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

### Duplicate

Lab ID = 996487-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	105	885.	887	0.171	0 - 20

### Duplicate

Lab ID = 996573-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	24.9	24.9	0.190	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.02	5.00	100.	90 - 110

### Matrix Spike

Lab ID = 996486-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	19.6	19.6(10.6)	100.	90 - 110

### Matrix Spike

Lab ID = 996487-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.69	6.73(5.25)	99.3	90 - 110

### Matrix Spike

Lab ID = 996487-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	105	1930	1940(1050)	99.0	90 - 110

### Matrix Spike

Lab ID = 996517-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.14	1.14(1.06)	99.7	90 - 110

### Matrix Spike

Lab ID = 996517-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.16	1.14(1.06)	102.	90 - 110

### Matrix Spike

Lab ID = 996517-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.59	1.65(1.06)	94.4	90 - 110

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 11 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

## Metals by EPA 200.7, Total

Batch: 080511A-Th

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-001 Aluminum	ug/L	08/05/2011 12:09	1.00	2.83	50.0	ND
Boron	ug/L	08/05/2011 12:09	1.00	1.50	200.	988.
Iron	ug/L	08/05/2011 12:09	1.00	1.34	20.0	ND
996487-002 Aluminum	ug/L	08/05/2011 12:26	1.00	2.83	50.0	ND
Boron	ug/L	08/05/2011 12:26	1.00	1.50	200.	1000
Iron	ug/L	08/05/2011 12:26	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
Boron	ug/L	1.00	ND

### Duplicate

Lab ID = 996487-001

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
Boron	ug/L	1.00	978.	988	0.976	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	4850	5000	97.0	85 - 115
Iron	ug/L	1.00	5040	5000	101.	85 - 115
Boron	ug/L	1.00	5060	5000	101.	85 - 115

### Matrix Spike

Lab ID = 996487-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	1.00	2400	2000(2000)	120.	75 - 125
Iron	ug/L	1.00	1900	2000(2000)	94.8	75 - 125
Boron	ug/L	1.00	2940	2990(2000)	97.6	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	4880	5000	97.6	95 - 110
Iron	ug/L	1.00	5140	5000	103.	95 - 110
Boron	ug/L	1.00	5090	5000	102.	95 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	4880	5000	97.5	90 - 110

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 14 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

## Metals by EPA 200.8, Total

Batch 080511A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-001 Antimony	ug/L	08/05/2011 14:35	5.00	0.120	10.0	ND
Arsenic	ug/L	08/05/2011 14:35	5.00	0.285	1.0	ND
Barium	ug/L	08/05/2011 14:35	5.00	0.200	10.0	10.2
Chromium	ug/L	08/05/2011 14:35	5.00	0.110	1.0	2.1
Copper	ug/L	08/05/2011 14:35	5.00	0.125	5.0	ND
Lead	ug/L	08/05/2011 14:35	5.00	0.110	10.0	ND
Manganese	ug/L	08/05/2011 14:35	5.00	0.980	1.0	3.6
Molybdenum	ug/L	08/05/2011 14:35	5.00	0.270	10.0	17.0
Nickel	ug/L	08/05/2011 14:35	5.00	0.0750	10.0	ND
Zinc	ug/L	08/05/2011 14:35	5.00	1.26	10.0	ND
996487-002 Antimony	ug/L	08/05/2011 15:02	5.00	0.120	10.0	ND
Arsenic	ug/L	08/05/2011 15:02	5.00	0.285	1.0	3.5
Barium	ug/L	08/05/2011 15:02	5.00	0.200	10.0	26.5
Chromium	ug/L	08/05/2011 15:02	5.00	0.110	1.0	877.
Copper	ug/L	08/05/2011 15:02	5.00	0.125	5.0	ND
Lead	ug/L	08/05/2011 15:02	5.00	0.110	10.0	ND
Manganese	ug/L	08/05/2011 15:02	5.00	0.980	1.0	8.6
Molybdenum	ug/L	08/05/2011 15:02	5.00	0.270	10.0	24.7
Nickel	ug/L	08/05/2011 15:02	5.00	0.0750	10.0	ND
Zinc	ug/L	08/05/2011 15:02	5.00	1.26	10.0	ND

## Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Barium	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Nickel	ug/L	1.00	ND
Zinc	ug/L	1.00	ND
Antimony	ug/L	1.00	ND
Copper	ug/L	1.00	ND
Lead	ug/L	1.00	ND
Manganese	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 15 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

## Duplicate

Lab ID = 996487-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	5.00	ND	0.00	0	0 - 20
Barium	ug/L	5.00	10.3	10.2	1.36	0 - 20
Chromium	ug/L	5.00	1.94	2.07	6.43	0 - 20
Nickel	ug/L	5.00	ND	1.88	0	0 - 20
Zinc	ug/L	5.00	ND	0.00	0	0 - 20
Antimony	ug/L	5.00	ND	0.00	0	0 - 20
Copper	ug/L	5.00	ND	0.00	0	0 - 20
Lead	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	3.56	3.56	0.112	0 - 20
Molybdenum	ug/L	5.00	17.8	17.0	4.77	0 - 20

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	48.7	50.0	97.4	85 - 115
Barium	ug/L	1.00	50.6	50.0	101.	85 - 115
Chromium	ug/L	1.00	49.9	50.0	99.7	85 - 115
Nickel	ug/L	1.00	49.6	50.0	99.1	85 - 115
Zinc	ug/L	1.00	49.7	50.0	99.4	85 - 115
Antimony	ug/L	1.00	48.2	50.0	96.4	85 - 115
Copper	ug/L	1.00	49.3	50.0	98.5	85 - 115
Lead	ug/L	1.00	47.2	50.0	94.3	85 - 115
Manganese	ug/L	1.00	50.7	50.0	101.	85 - 115
Molybdenum	ug/L	1.00	49.6	50.0	99.2	85 - 115

## Matrix Spike

Lab ID = 996487-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	242.	250.(250.)	97.0	75 - 125
Barium	ug/L	5.00	251.	260.(250.)	96.4	75 - 125
Chromium	ug/L	5.00	252.	252.(250.)	99.8	75 - 125
Nickel	ug/L	5.00	230.	252.(250.)	91.4	75 - 125
Zinc	ug/L	5.00	210.	250.(250.)	84.1	75 - 125
Antimony	ug/L	5.00	221.	250.(250.)	88.5	75 - 125
Copper	ug/L	5.00	224.	250.(250.)	89.8	75 - 125
Lead	ug/L	5.00	208.	250.(250.)	83.3	75 - 125
Manganese	ug/L	5.00	252.	254.(250.)	99.5	75 - 125
Molybdenum	ug/L	5.00	262.	267(250.)	97.9	75 - 125

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 16 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

## Matrix Spike Duplicate

Lab ID = 996487-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	242.	250.(250.)	96.6	75 - 125
Barium	ug/L	5.00	251.	260.(250.)	96.4	75 - 125
Chromium	ug/L	5.00	252.	252.(250.)	100.	75 - 125
Nickel	ug/L	5.00	231.	252.(250.)	91.8	75 - 125
Zinc	ug/L	5.00	212.	250.(250.)	84.8	75 - 125
Antimony	ug/L	5.00	224.	250.(250.)	89.4	75 - 125
Copper	ug/L	5.00	224.	250.(250.)	89.8	75 - 125
Lead	ug/L	5.00	210.	250.(250.)	83.8	75 - 125
Manganese	ug/L	5.00	253	254.(250.)	99.8	75 - 125
Molybdenum	ug/L	5.00	264.	267(250.)	98.9	75 - 125

## MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	48.3	50.0	96.6	90 - 110
Barium	ug/L	1.00	50.8	50.0	102.	90 - 110
Chromium	ug/L	1.00	49.8	50.0	99.5	90 - 110
Nickel	ug/L	1.00	49.0	50.0	98.0	90 - 110
Zinc	ug/L	1.00	49.9	50.0	99.9	90 - 110
Antimony	ug/L	1.00	48.5	50.0	97.0	90 - 110
Copper	ug/L	1.00	48.8	50.0	97.6	90 - 110
Lead	ug/L	1.00	46.8	50.0	93.7	90 - 110
Manganese	ug/L	1.00	50.3	50.0	101.	90 - 110
Molybdenum	ug/L	1.00	50.3	50.0	100.	90 - 110

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	49.7	50.0	99.4	90 - 110

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	49.6	50.0	99.1	90 - 110

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	50.9	50.0	102.	90 - 110

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	50.2	50.0	100.	90 - 110

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 21 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	ND	0.00		
Serial Dilution						Lab ID = 996487-002
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	833.	877	5.16	0 - 10

## Reactive Silica by SM4500-Si D

Batch 08Si11A

8/8/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-002 Silica	mg/L	08/08/2011	25.0	0.532	1.00	21.6

## Method Blank

Parameter	Unit	DF	Result
Silica	mg/L	1.00	ND

## Duplicate

Lab ID = 996487-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Silica	mg/L	25.0	21.4	21.6	0.732	0 - 20

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.215	0.220	97.9	90 - 110

## Matrix Spike

Lab ID = 996487-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Silica	mg/L	25.0	32.3	31.6(10.0)	107.	75 - 125

## MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.103	0.110	93.7	90 - 110

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.400	0.400	100.	90 - 110



**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 22 of 29****Project Number: 408401.01.DM****Printed 8/18/2011****Total Dissolved Solids by SM 2540 C**

Batch 08TDS11F

8/9/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-001 Total Dissolved Solids	mg/L	08/09/2011	1.00	0.434	125	4360
996487-002 Total Dissolved Solids	mg/L	08/09/2011	1.00	0.434	125	4590

**Method Blank**

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

**Duplicate**

Lab ID = 996487-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4620	4590	0.543	0 - 5

**Lab Control Sample**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	495	500	99.0	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 23 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

**Total Organic Carbon (T/DOC) SM 5310 C**

Batch 08TOC11A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-002 Total Organic Carbon	mg/L	08/03/2011 17:50	1.00	0.0100	0.300	0.529

Method Blank

Parameter	Unit	DF	Result
Total Organic Carbon	mg/L	1.00	ND

Duplicate

Lab ID = 996402-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Organic Carbon	mg/L	1.00	2.01	2.04	1.38	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	14.2	14.8	96.1	90 - 110

Matrix Spike

Lab ID = 996402-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	12.2	12.0(10.0)	101.	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	7.05	7.40	95.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	10.3	10.0	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.94	10.0	99.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.97	10.0	99.7	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 24 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

## Total Phosphate, SM 4500-PB,E

Batch 08TP11A

8/8/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-002 Phosphate, Total As P	mg/L	08/08/2011	1.00	0.00530	0.0200	ND

### Method Blank

Parameter	Unit	DF	Result
Phosphate, Total As P	mg/L	1.00	ND

### Duplicate

Lab ID = 996487-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Phosphate, Total As P	mg/L	1.00	ND	0.00	0	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.106	0.100	106.	90 - 110

### Matrix Spike

Lab ID = 996487-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0763	0.0650(0.0650)	117.	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0612	0.0600	102	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0643	0.0650	98.9	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 25 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

**Ammonia Nitrogen by SM4500-NH3D**

Batch 08NH3-E11A

8/4/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-001 Ammonia as N	mg/L	08/04/2011	1.00	0.00200	0.500	1.58
996487-002 Ammonia as N	mg/L	08/04/2011	1.00	0.00200	0.500	ND

Method Blank

Parameter	Unit	DF	Result
Ammonia as N	mg/L	1.00	ND

Duplicate

Lab ID = 996487-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Ammonia as N	mg/L	1.00	1.41	1.58	11.6	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	10.2	10.0	102.	90 - 110

Matrix Spike

Lab ID = 996487-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.09	7.58(6.00)	75.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.54	6.00	109	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.19	6.00	103.	90 - 110


**Client: E2 Consulting Engineers, Inc.**
**Project Name: PG&E Topock Project**
**Page 26 of 29**
**Project Number: 408401.01.DM**
**Printed 8/31/2011**
**Revised**
**Metals by EPA 200.8, Dissolved**

Batch 080511A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-002 Manganese	ug/L	08/05/2011 15:15	5.00	0.980	1.0	9.2

**Method Blank**

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

**Duplicate**

Lab ID = 996486-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	9.04	8.79	2.82	0 - 20
Manganese	ug/L	5.00	36.2	36.2	0.0276	0 - 20

**Lab Control Sample**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.9	50.0	99.7	85 - 115
Manganese	ug/L	1.00	50.7	50.0	101.	85 - 115

**Matrix Spike**

Lab ID = 996486-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	255	259.(250.)	98.5	75 - 125
Manganese	ug/L	5.00	284.	286.(250.)	99.1	75 - 125

**Matrix Spike Duplicate**

Lab ID = 996486-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	256.	259.(250.)	98.7	75 - 125
Manganese	ug/L	5.00	284.	286.(250.)	99.2	75 - 125

**MRCCS - Secondary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.8	50.0	99.5	90 - 110
Manganese	ug/L	1.00	50.3	50.0	101.	90 - 110

**MRCVS - Primary**

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

**MRCVS - Primary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.0	50.0	100.	90 - 110

**MRCVS - Primary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	52.0	50.0	104.	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 28 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

## Metals by 200.7, Dissolved

Batch 080511A-Th

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-002 Iron	ug/L	08/05/2011 12:38	1.00	1.34	10.0	ND

### Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

### Duplicate

Lab ID = 996487-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	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	5040	5000	101.	85 - 115

### Matrix Spike

Lab ID = 996487-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	2170	2000(2000)	108.	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5140	5000	103.	95 - 105

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4650	5000	93.0	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4850	5000	96.9	90 - 110

### Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2010	2000	100.	80 - 120

### Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	1920	2000	95.8	80 - 120

### Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	1940	2000	97.2	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.

035



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 29 of 29

Project Number: 408401.01.DM

Printed 8/18/2011

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	1890	2000	94.4	80 - 120

## Turbidity by SM 2130 B

Batch 08TUC11D

8/3/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996487-001 Turbidity	NTU	08/03/2011	1.00	0.0140	0.100	ND
996487-002 Turbidity	NTU	08/03/2011	1.00	0.0140	0.100	ND

## Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

## Duplicate

Lab ID = 996487-002

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	8.10	8.00	101.	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi  
Manager, Analytical Services

E2 Condon



## Total Dissolved Solids by SM 2540 C

### Calculations

Batch: 08TDS11F

Date Calculated: 8/10/11

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	70.8987	70.8991	70.8990	0.0001	No	0.0003	3.0	25.0	ND	1
996474-1	100	105.6343	105.6899	105.6898	0.0001	No	0.0555	555.0	25.0	555.0	1
996474-2	100	104.2445	104.2903	104.2903	0.0000	No	0.0458	458.0	25.0	458.0	1
996484-1	100	110.7146	110.752	110.7518	0.0002	No	0.0372	372.0	25.0	372.0	1
996484-2	50	47.6200	47.7119	47.7116	0.0003	No	0.0916	1832.0	50.0	1832.0	1
996484-3	100	111.6500	111.6927	111.6923	0.0004	No	0.0423	423.0	25.0	423.0	1
996484-4	100	110.3722	110.4073	110.4073	0.0000	No	0.0351	351.0	25.0	351.0	1
996484-5	50	50.9483	51.0761	51.0761	0.0000	No	0.1278	2556.0	50.0	2556.0	1
996484-6	50	47.9671	48.0002	47.9999	0.0003	No	0.0328	656.0	50.0	656.0	1
996487-1	20	51.1311	51.2186	51.2184	0.0002	No	0.0873	4365.0	125.0	4365.0	1
996487-2	20	50.3841	50.4761	50.4759	0.0002	No	0.0918	4590.0	125.0	4590.0	1
996487-2D	20	51.1673	51.2596	51.2596	0.0000	No	0.0923	4615.0	125.0	4615.0	1
LCS	100	109.3941	109.4437	109.4436	0.0001	No	0.0495	495.0	25.0	495.0	1
996518-1	50	68.6333	68.6895	68.6895	0.0000	No	0.0562	1124.0	50.0	1124.0	1
996518-3	100	100.6856	100.7177	100.7175	0.0002	No	0.0319	319.0	25.0	319.0	1
996518-4	50	69.3472	69.3846	69.3842	0.0004	No	0.0370	740.0	50.0	740.0	1
996518-6	50	75.7679	75.8184	75.8184	0.0000	No	0.0505	1010.0	50.0	1010.0	1
996518-7	50	68.8805	68.9367	68.9363	0.0004	No	0.0558	1116.0	50.0	1116.0	1
996518-8	50	74.7032	74.7613	74.7613	0.0000	No	0.0581	1162.0	50.0	1162.0	1
996644-1	50	69.4888	69.5366	69.5362	0.0004	No	0.0474	948.0	50.0	948.0	1
996644-2	100	67.6311	67.6852	67.6851	0.0001	No	0.0540	540.0	25.0	540.0	1
996644-3	100	73.6071	73.6626	73.6622	0.0004	No	0.0551	551.0	25.0	551.0	1
996644-4	100	69.2322	69.2836	69.2835	0.0001	No	0.0513	513.0	25.0	513.0	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

\* COC signed.



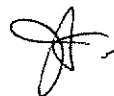
## Total Dissolved Solids by SM 2540 C

### TDS/EC CHECK

Batch: 08TDS11F

Date Calculated: 8/10/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
996474-1	970	0.57	630.5	0.88
996474-2	938	0.49	609.7	0.75
996484-1	628	0.59	408.2	0.91
996484-2	2630	0.70	1709.5	1.07
996484-3	694	0.61	451.1	0.94
996484-4	543	0.65	352.95	0.99
996484-5	3700	0.69	2405	1.06
996484-6	1080	0.61	702	0.93
996487-1	7410	0.59	4816.5	0.91
996487-2	7840	0.59	5096	0.90
996487-2D	7840	0.59	5096	0.91
LCS				
996518-1	1710	0.66	1111.5	1.01
996518-3	512	0.62	332.8	0.96
996518-4	1151	0.64	748.15	0.99
996518-6	1500	0.67	975	1.04
996518-7	1688	0.66	1097.2	1.02
996518-8	1804	0.64	1172.6	0.99
996644-1	1767	0.54	1148.55	0.83
996644-2	949	0.57	616.85	0.88
996644-3	935	0.59	607.75	0.91
996644-4	835	0.61	542.75	0.95





E2 Condon

<b>Analytical Batch:</b>	08ALK11A
<b>Matrix:</b>	Water
<b>Date Calculated:</b>	8/5/11

[illegible]

**Calculations as follows:**

$$T \text{ or } P = \left( \frac{A \times N \times 50000}{mL \text{ sample}} \right)$$

$$\text{Low Alkalinity: as mg/L CaCO}_3 = \frac{(2 \times B - C) \times N \times 50000}{\text{mL sample}}$$

**ND:** Not Detected (below the reporting limit)  
**LCS:** Laboratory Control Standard  
**LCSD:** Laboratory Control Standard Duplicate  
**MS:** Matrix Spike  
**MSD:** Matrix Spike Duplicate

**Where:** T = Total Alkalinity, mg CaCO<sub>3</sub>/L  
P = Phenolphthalein Alkalinity, mg CaCO<sub>3</sub>/L  
A = mL standard acid used  
N = normality of standard acid

Where: **B** = mL titrant to first recorded pH  
**C** = total mL titrant to reach pH 0.3 unit lower  
**N** = normality of standard acid

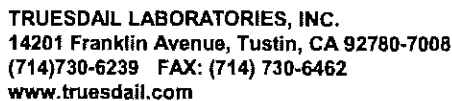
049

Analyst Printed Name

Analyst Signature

Reviewer Printed Name


Reviewer Signature \_\_\_\_\_



**[IM3Plant-WDR-320]**

TURNAROUND TIME 10 Days  
DATE 8/02/11 PAGE 4

PAGE 1 OF 1

<b>COMPANY</b>				CH2M HILL /E2														<b>COMMENTS</b>	
<b>PROJECT NAME</b>				PG&E Topock IM3															
<b>PHONE</b>				530-229-3303				<b>FAX</b>				530-339-3303							
<b>ADDRESS</b>				155 Grand Ave Ste 1000 Oakland, CA 94612															
<b>P.O. NUMBER</b>				408401.01.DM															
<b>SAMPLERS (SIGNATURE)</b>																			
<b>SAMPLE I.D.</b>	<b>DATE</b>	<b>TIME</b>	<b>DESCRIPTION</b>	<b>Cr(VI) (218.6) Lab Filtered</b>	<b>Alkalinity (2320-B)</b>	<b>EC (120.1)</b>	<b>TDS (2540 C)</b>	<b>Turb (2130)</b>	<b>Total Metals (200.7) See List Below</b>	<b>Ammonia (4500-NH3)</b>	<b>Total P (4500-P)</b>	<b>Anions (300.0) F, NO3, SO4</b>	<b>TOC (5310 C)</b>	<b>Dissolved Metals (200.7) Fe, Mn lab filtered</b>	<b>NO2 (4500-NO2B)</b>	<b>NO3 (4500-Si CorD)</b>	<b>NUMBER OF CONTAINERS</b>	} MI = 6 } MI = 7 } 200.7	
SC-700B-WDR-320	8/02/11	1400		X		X	X	X	X	X		X			X		4		
SC-100B-WDR-320	8/02/11	1400		X	X	X	X	X	X	X	X	X	X	X	X		9		
				<b>ALERT!!</b>															
				<b>Level III QC</b>															
																	13	TOTAL NUMBER OF CONTAINERS	

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"/> <u>3.8°C°F</u>
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	For Sample Conditions	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time		

For Sample Conditions  
See Form Attached

109

# 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
08/02/11	996424-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
08/03/11	996482-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
08/03/11	996483-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
08/03/11	996484-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
08/03/11	996485-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
08/03/11	996486-1	7.0	5.00	9.5	10:00	SB
08/03/11	996487-1	7.0	5.00	9.5	9:55	SB
↓	↓ -2	↓	↓	↓	10:05	↓

# Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
996418(1-24)	<1	7.2	8/2/11	ES	No	yes @ 11:30 AM
996419(1-8)	↓	↓	↓	↓	↓	↓
996457	<1	>2	08/03/11	M.M	Yes	-
996458	↓	↓	↓	↓	↓	-
996481	↓	↓	↓	↓	↓	-
996482(1-8)	<1	<2	↓	↓	↓	-
996483(1-5)	↓	↓	↓	↓	↓	-
996484(1-6)	↓	↓	↓	↓	↓	-
996485(1-3)	↓	↓	↓	↓	↓	-
996486(1-2)	<1	7.2	8/3/11	ES	No	yes @ 11:30 AM
996487(1-2)	↓	↓	↓	↓	↓	↓
996518(1-6,8,10)	<1	<2	08/04/11	M.M	Yes	-
996518(1-9)	↓	↓	↓	↓	↓	-
996539(1-9)	<1	<2	08/05/11	M.M	Yes	-
996540(1-9)	↓	↓	↓	↓	↓	-
996541(1-8,10)	↓	↓	↓	↓	↓	-
996543	↓	↓	↓	↓	↓	-
996587(1-3,5)	<1	<2	08/08/11	M.M	Yes	-
996575(1-5)	↓	↓	↓	↓	↓	-
996599(1-2)	<1	<2	08/09/11	M.M	Yes	-
996600(1-3-6)	↓	↓	↓	↓	↓	-
996601(1-3)	↓	↓	↓	↓	↓	-
996602(1-5)	↓	↓	↓	↓	↓	-
996603(1-8)	↓	↓	↓	↓	↓	-
996538-1	<1	<2	8/5/11	KK	Yes	-
996620(1-5)	<1	7.2	8/9/11	ES	No	yes @ 3:30
621(1-8)	↓	↓	↓	↓	↓	↓
622(1-7)	↓	↓	↓	↓	↓	↓
996594(1-24)	<1	7.2	8/10/11	ES	No	yes @ 11:00 AM
996647(1-3)	<1	7.2	↓	↓	↓	↓
996644(1-4)	↓	↓	↓	↓	↓	↓
996646(1-2)	↓	↓	↓	↓	↓	-
996649(1-9)	<1	<2	8/10/11	M.M	Yes	-
996650(1-9)	↓	↓	↓	↓	↓	-
996651(1-9,11)	↓	↓	↓	↓	↓	-
996652	<1	7.2	8/10/11	ES	No	yes @ 3:00 PM
996671(1-5)	<1	<2	8/11/11	M.M	Yes	-
996672(1-8,10)	↓	↓	↓	↓	↓	-
996674(1-8,11)	<1	<2	8/12/11	M.M	Yes	-
996695(1-7)	↓	↓	↓	↓	↓	-
996696(1-3)	↓	↓	↓	↓	↓	-
996720(1-6)	↓	↓	↓	↓	↓	-
996679(1-5)	So Clean	-	8/12/11	M.M	Yes	TTLC
996680	↓	-	↓	↓	↓	↓
996717(1-4)	↓	-	↓	↓	↓	↓
996741(1-4)	<1	<2	8/16/11	M.M	Yes	-
996773(1-8)	<1	↓	8/17/11	M.M	Yes	-
996778(1-11)	↓	↓	↓	↓	↓	-
996795	↓	↓	↓	↓	↓	-



TRUESDAIL LABORATORIES, INC.

## Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 996487

Date Delivered: 08/02/11 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)? 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 Water
16. Comments: \_\_\_\_\_
17. Sample Check-In completed by Truesdail Log-In/Receiving: Linda

# 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

August 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-321 PROJECT; GROUNDWATER  
MONITORING, TLI NO.: 996652

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-321 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 August 9, 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.

The straight run for the matrix spike for sample SC-700B-WDR-321 for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery was within acceptable limits, the data from the straight run is reported.

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 Sean Cant*  
Mona Nassimi  
Manager, Analytical Services

*Michael Ngo*  
Michael Ngo  
Quality Assurance/Quality Control Officer

# TRUESDAIL LABORATORIES, INC.

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www.truesdail.com

**Attention:** Shawn Duffy

**Laboratory No.:** 996652

**Sample:** One (1) Groundwater Sample

**Date:** August 24, 2011

**Project Name:** PG&E Topock Project

**Collected:** August 9, 2011

**Project No.:** 424973.01.DM

**Received:** August 9, 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	Sonya Bersudsky



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

**Attention:** Shawn Duffy

**Laboratory No.:** 996652

**Date Received:** August 9, 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
996652-001	SC-700B-WDR-321	E120.1	NONE	8/9/2011	13:30	EC	7190	umhos/cm	2.00
996652-001	SC-700B-WDR-321	E200.8	NONE	8/9/2011	13:30	Chromium	ND	ug/L	1.0
996652-001	SC-700B-WDR-321	E200.8	NONE	8/9/2011	13:30	Manganese	1.6	ug/L	1.0
996652-001	SC-700B-WDR-321	E218.6	LABFLT	8/9/2011	13:30	Chromium, hexavalent	ND	ug/L	0.20
996652-001	SC-700B-WDR-321	SM2130B	NONE	8/9/2011	13:30	Turbidity	0.184	NTU	0.10
996652-001	SC-700B-WDR-321	SM2540C	NONE	8/9/2011	13:30	Total Dissolved Solids	4120	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:

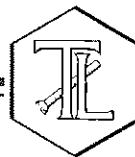
Results below 0.01ppm will have two (2) significant figures.

Result above or equal to 0.01ppm will have three (3) significant figures.

Quality Control data will always have three (3) significant figures.

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## 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. 996652

Page 1 of 8

Printed 8/24/2011

Samples Received on 8/9/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-321	996652-001	08/09/2011 13:30	Water

### Specific Conductivity - EPA 120.1

Batch 08EC11C

8/10/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996652-001 Specific Conductivity	umhos/cm	08/10/2011	1.00	0.0380	2.00	7190

#### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

#### Duplicate

Lab ID = 996652-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7180	7190	0.139	0 - 10

#### Lab Control Sample

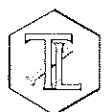
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	705	706	99.8	90 - 110

#### MRCCS - Secondary

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

#### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	982	998	98.4	90 - 110


**Client: E2 Consulting Engineers, Inc.**
**Project Name: PG&E Topock Project**
**Page 2 of 8**
**Project Number: 424973.01.DM**
**Printed 8/24/2011**
**Chrome VI by EPA 218.6**

Batch 08CrH11M

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996652-001 Chromium, Hexavalent	ug/L	08/10/2011 09:15	1.05	0.0260	0.20	ND

**Method Blank**

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

**Duplicate**

Lab ID = 996602-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	2.76	2.75	0.254	0 - 20

**Lab Control Sample**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.08	5.00	102.	90 - 110

**Matrix Spike**

Lab ID = 996601-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	8.88	8.75(5.30)	102.	90 - 110

**Matrix Spike**

Lab ID = 996602-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.12	1.11(1.06)	102.	90 - 110

**Matrix Spike**

Lab ID = 996602-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	8.10	8.05(5.30)	101	90 - 110

**Matrix Spike**

Lab ID = 996602-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.68	1.65(1.06)	104.	90 - 110

**Matrix Spike**

Lab ID = 996602-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.53	1.49(1.06)	104.	90 - 110

**Matrix Spike**

Lab ID = 996602-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.53	1.58(1.06)	94.5	90 - 110

**Matrix Spike**

Lab ID = 996602-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.14	1.12(1.06)	101.	90 - 110

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 3 of 8****Project Number: 424973.01.DM****Printed 8/24/2011**

Matrix Spike						Lab ID = 996649-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.59	6.48(5.30)	102.	90 - 110
Matrix Spike						Lab ID = 996649-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	2.05	2.02(1.06)	103.	90 - 110
Matrix Spike						Lab ID = 996649-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.96	1.96(1.06)	100.	90 - 110
Matrix Spike						Lab ID = 996649-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.58	6.49(5.30)	102.	90 - 110
Matrix Spike						Lab ID = 996649-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	8.74	8.62(5.30)	102.	90 - 110
Matrix Spike						Lab ID = 996649-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.68	6.47(5.30)	104.	90 - 110
Matrix Spike						Lab ID = 996649-007
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	2.00	1.96(1.06)	104.	90 - 110
Matrix Spike						Lab ID = 996649-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	2.00	1.99(1.06)	101.	90 - 110
Matrix Spike						Lab ID = 996649-009
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	8.92	8.79(5.30)	102.	90 - 110
Matrix Spike						Lab ID = 996649-010
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.15	1.13(1.06)	102.	90 - 110
Matrix Spike						Lab ID = 996652-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.45	5.46(5.25)	99.7	90 - 110
Matrix Spike						Lab ID = 996652-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.21	1.18(1.06)	103.	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 8

Project Number: 424973.01.DM

Printed 8/24/2011

**Metals by EPA 200.8, Total**

Batch 081711A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996652-001 Chromium	ug/L	08/17/2011 16:37	5.00	0.0550	1.0	ND
Manganese	ug/L	08/17/2011 16:37	5.00	0.980	1.0	1.6

Method Blank

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

Duplicate

Lab ID = 996652-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	1.58	1.56	0.957	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.5	50.0	101.	85 - 115
Manganese	ug/L	1.00	51.0	50.0	102.	85 - 115

Matrix Spike

Lab ID = 996652-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	257.	250.(250.)	103.	75 - 125
Manganese	ug/L	5.00	263	252.(250.)	104.	75 - 125

Matrix Spike Duplicate

Lab ID = 996652-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	1.00	255.	250.(250.)	102.	75 - 125
Manganese	ug/L	1.00	263.	252.(250.)	105.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.3	50.0	103.	90 - 110
Manganese	ug/L	1.00	53.2	50.0	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.4	50.0	98.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.8	50.0	99.6	90 - 110



# 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 8/24/2011

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	52.4	50.0	105.	80 - 120

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	53.1	50.0	106.	80 - 120

## Total Dissolved Solids by SM 2540 C

Batch 08TDS11H

8/12/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996652-001 Total Dissolved Solids	mg/L	08/12/2011	1.00	0.434	125	4120

## Method Blank

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

## Duplicate

Lab ID = 996694-011

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	376	368	2.15	0 - 5

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	498	500.	99.6	90 - 110

## Turbidity by SM 2130 B

Batch 08TUC11F

8/10/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996652-001 Turbidity	NTU	08/10/2011	1.00	0.0140	0.100	0.184

## Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

## Duplicate

Lab ID = 996652-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.185	0.184	0.542	0 - 20

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.65	8.00	95.6	90 - 110

## Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.72	8.00	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.

014



**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 8/24/2011**

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**



Mona Nassimi

Manager, Analytical Services



F2 Condon

**Total Dissolved Solids by SM 2540 C****Calculations**

Batch: 08TDS11H

Date Calculated: 8/15/11

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	73.0152	73.0155	73.0153	0.0002	No	0.0001	1.0	25.0	ND	1
996694-1	50	66.8117	66.8469	66.8469	0.0000	No	0.0352	704.0	50.0	704.0	1
996694-2	20	73.0050	73.064	73.0639	0.0001	No	0.0589	2945.0	125.0	2945.0	1
996694-3	20	49.2656	49.3427	49.3423	0.0004	No	0.0767	3835.0	125.0	3835.0	1
996694-4	20	47.9643	48.041	48.0406	0.0004	No	0.0763	3815.0	125.0	3815.0	1
996694-5	50	74.7548	74.8337	74.8337	0.0000	No	0.0789	1578.0	50.0	1578.0	1
996694-6	50	73.1401	73.2102	73.21	0.0002	No	0.0699	1398.0	50.0	1398.0	1
996694-7	50	68.6089	68.6532	68.6532	0.0000	No	0.0443	886.0	50.0	886.0	1
996694-9	50	67.7394	67.8025	67.8025	0.0000	No	0.0631	1262.0	50.0	1262.0	1
996694-10	100	110.9547	110.9921	110.9921	0.0000	No	0.0374	374.0	25.0	374.0	1
996694-11	100	105.3571	105.394	105.3939	0.0001	No	0.0368	368.0	25.0	368.0	1
996694-11D	100	104.8958	104.9334	104.9334	0.0000	No	0.0376	376.0	25.0	376.0	1
LCS	100	109.4438	109.4937	109.4936	0.0001	No	0.0498	498.0	25.0	498.0	1
996695-1	20	47.9679	48.0196	48.0196	0.0000	No	0.0517	2585.0	125.0	2585.0	1
996695-2	50	73.5051	73.6147	73.6145	0.0002	No	0.1094	2188.0	50.0	2188.0	1
996695-3	100	105.2909	105.3203	105.3202	0.0001	No	0.0293	293.0	25.0	293.0	1
996695-4	100	78.3856	78.4207	78.4205	0.0002	No	0.0349	349.0	25.0	349.0	1
996695-5	100	72.5137	72.5484	72.5484	0.0000	No	0.0347	347.0	25.0	347.0	1
996695-6	100	68.1678	68.2047	68.2047	0.0000	No	0.0369	369.0	25.0	369.0	1
996695-7	100	112.1752	112.2205	112.2203	0.0002	No	0.0451	451.0	25.0	451.0	1
996652	20	75.7702	75.8527	75.8527	0.0000	No	0.0825	4125.0	125.0	4125.0	1
996594-2	200	105.6356	105.6534	105.6534	0.0000	No	0.0178	89.0	12.5	89.0	1
996594-4	100	74.7036	74.7309	74.7307	0.0002	No	0.0271	271.0	25.0	271.0	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: 08TDS11H

Date Calculated: 8/15/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
996694-1	1204	0.58	782.6	0.90
996694-2	4360	0.68	2834	1.04
996694-3	5470	0.70	3555.5	1.08
996694-4	5480	0.70	3562	1.07
996694-5	2410	0.65	1566.5	1.01
996694-6	2250	0.62	1462.5	0.96
996694-7	1550	0.57	1007.5	0.88
996694-9	1880	0.67	1222	1.03
996694-10	632	0.59	410.8	0.91
996694-11	630	0.58	409.5	0.90
996694-11D	630	0.60	409.5	0.92
LCS				
996695-1	4060	0.64	2639	0.98
996695-2	3280	0.67	2132	1.03
996695-3	532	0.55	345.8	0.85
996695-4	596	0.59	387.4	0.90
996695-5	577	0.60	375.05	0.93
996695-6	617	0.60	401.05	0.92
996695-7	745	0.61	484.25	0.93
996652	7190	0.57	4673.5	0.88
996594-2	173	0.51	112.45	0.79
996594-4	498	0.54	323.7	0.84





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# CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-321]

996652

COC Number

TURNAROUND TIME

10 Days

DATE 08/09/11

PAGE 1 OF 1

COMPANY E2				<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Cr6 (218.6) Lab Filtered</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Total Metals (200.7) Cr, Mn</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Specific Conductance (120.1)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TDS (SM2540C)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Turbidity (SM2130)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</div> </div>												COMMENTS											
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)																											
SAMPLE I.D.				DATE				TIME				DESCRIPTION															
SC-700B-WDR-321				08/09/11				13:30				Water				x x x x x				3				pH = 6 (200.7)			
																				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 <input checked="" type="checkbox"/>	WARM <input type="checkbox"/> 40°C °F
	Rafael David	OMI	8/9/11 16:00	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Signature (Received)	Printed Name	Company/Agency	Date/Time	SPECIAL REQUIREMENTS:		
	Rafael David	T-L-F	8-9-11 16:00			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time			
	Rafael David	T-L-F	8-9-11 21:30			
Signature (Received)	Printed Name	Company/Agency	Date/Time			
	Linda	TLF	8/9/11 21:30			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time			
Signature (Received)	Printed Name	Company/Agency	Date/Time			

041

## Hexavalent Chromium

## Method EPA 218.6 and SW 7199 Sample pH Log

al

# Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
996418(1-4)	<1	7.2	8/2/11	ES	No	yes @ 11:30 a.m.
996419(1-8)	↓	↓	↓	↓	↓	↓
996457	<1	>2	08/03/11	M.M	Yes	-
996458	↓	↓	↓	↓	↓	-
996481	↓	↓	↓	↓	↓	-
996482(1-8)	<1	<2	↓	↓	↓	-
996483(1-5)	↓	↓	↓	↓	↓	-
996484(1-6)	↓	↓	↓	↓	↓	-
996485(1-3)	↓	↓	↓	↓	↓	-
996486(1-2)	<1	7.2	8/3/11	ES	No	yes @ 1:30 p.m.
996487(1-2)	↓	↓	↓	↓	↓	↓
996517(1-6,8,10)	<1	<2	08/04/11	M.M	Yes	-
996518(1-9)	↓	↓	↓	↓	↓	-
996539(9)	<1	<2	08/07/11	M.M	Yes	-
996540(1-9)	↓	↓	↓	↓	↓	-
996541(1-8,10)	↓	↓	↓	↓	↓	-
996543	↓	↓	↓	↓	↓	-
996574(1-3,5)	<1	<2	08/08/11	M.M	Yes	-
996575(1-5)	↓	↓	↓	↓	↓	-
996599(1-2)	<1	<2	08/09/11	M.M	Yes	-
996600(1-3-6)	↓	↓	↓	↓	↓	-
996601(1-3)	↓	↓	↓	↓	↓	-
996602(1-5)	↓	↓	↓	↓	↓	-
996603(1-7)	↓	↓	↓	↓	↓	-
996538-1	<1	<2	8/5/11	ES	Yes	-
996620(1-7)	<1	7.2	8/9/11	ES	No	yes @ 3:30
996621(1-8)	↓	↓	↓	↓	↓	↓
996622(1-7)	↓	↓	↓	↓	↓	↓
996644(1-7,4)	<1	7.2	↓	↓	↓	↓
996647(1-3)	<1	7.2	8/10/11	ES	No	yes @ 11:00 a.m.
996644(1-4)	↓	↓	↓	↓	↓	↓
996646(1-2)	↓	↓	↓	↓	↓	-
996649(1-9)	<1	<2	8/10/11	M.M	Yes	-
996650(1-9)	↓	↓	↓	↓	↓	-
996651(1-9,11)	↓	↓	↓	↓	↓	-
996652	<1	7.2	8/10/11	ES	No	yes @ 3:00 p.m.
996671(1-5)	<1	<2	8/11/11	M.M	Yes	-
996672(1-8,9,10)	↓	↓	↓	↓	↓	-
996674(1-8,9,11)	<1	<2	8/12/11	M.M	Yes	-
996695(1-7)	↓	↓	↓	↓	↓	-
996696(1-3)	↓	↓	↓	↓	↓	-
996720(1-6)	↓	↓	↓	↓	↓	-
996672(1-5)	So Clean	-	8/12/11	M.M	Yes	TTLC
996680	↓	-	↓	↓	↓	↓
996717(1-4)	↓	-	↓	↓	↓	↓
996741(1-4)	<1	<2	8/16/11	M.M	Yes	-
996773(1-8)	<1	↓	8/17/11	M.M	Yes	-
996778(1-11)	↓	↓	↓	↓	↓	-
996795	↓	↓	↓	↓	↓	-



TRUESDAIL LABORATORIES, INC.

## Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 996652

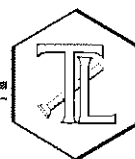
Date Delivered: 08/09/11 Time: 21:30 By: ☐ Mail ☒ Field Service ☐ Client

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 C.O.P. ☒ 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: Linda

ALERT !!  
Level III QC

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE  
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www.truesdail.com

September 12, 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-322 PROJECT, GROUNDWATER  
MONITORING, TLI NO.: 996740

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-322 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 August 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.

Mona Nassimi  
Manager, Analytical Services

Michael Ngo  
Quality Assurance/Quality Control Officer

# TRUESDAIL LABORATORIES, INC.

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**Client:** E2 Consulting Engineers, Inc.  
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Oakland, CA 94612

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

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample

**Project Name:** PG&E Topock Project

**Project No.:** 424973.01.DM

**Laboratory No.:** 996740

**Date:** September 1, 2011

**Collected:** August 15, 2011

**Received:** August 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	Hope Trinidad
EPA 218.6	Hexavalent Chromium	Sonya Bersudsky



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

**Attention:** Shawn Duffy

**Laboratory No.:** 996740

**Date Received:** August 15, 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
996740-001	SC-700B-WDR-322	E120.1	NONE	8/15/2011	6:00	EC	6930	umhos/cm	2.00
996740-001	SC-700B-WDR-322	E200.8	NONE	8/15/2011	6:00	Chromium	ND	ug/L	1.0
996740-001	SC-700B-WDR-322	E200.8	NONE	8/15/2011	6:00	Manganese	1.9	ug/L	1.0
996740-001	SC-700B-WDR-322	E218.6	LABFLT	8/15/2011	6:00	Chromium, hexavalent	ND	ug/L	0.20
996740-001	SC-700B-WDR-322	SM2130B	NONE	8/15/2011	6:00	Turbidity	ND	NTU	0.100
996740-001	SC-700B-WDR-322	SM2540C	NONE	8/15/2011	6:00	Total Dissolved Solids	4020	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.

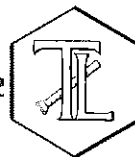
Result above or equal to 0.01ppm will have three (3) significant figures.

Quality Control data will always have three (3) significant figures.



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## 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. 996740

Page 1 of 6

Printed 9/12/2011

Samples Received on 8/15/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-322	996740-001	08/15/2011 06:00	Water

### Specific Conductivity - EPA 120.1

Batch 08EC11E

8/16/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996740-001 Specific Conductivity	umhos/cm	08/16/2011	1.00	0.0380	2.00	6930

#### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

#### Duplicate

Lab ID = 996740-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	6920	6930	0.144	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	696	706	98.6	90 - 110

#### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	980	998	98.2	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 6

Project Number: 424973.01.DM

Printed 9/12/2011

## Chrome VI by EPA 218.6

Batch 08CrH11U

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996740-001 Chromium, Hexavalent	ug/L	08/16/2011 09:18	1.05	0.0260	0.20	ND

### Method Blank

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

### Duplicate

Lab ID = 996741-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	1.49	1.47	1.28	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.00	5.00	100.	90 - 110

### Matrix Spike

Lab ID = 996671-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.40	1.42(1.06)	99.0	90 - 110

### Matrix Spike

Lab ID = 996671-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.23(1.06)	98.6	90 - 110

### Matrix Spike

Lab ID = 996671-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.20	1.22(1.06)	98.0	90 - 110

### Matrix Spike

Lab ID = 996671-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.10	1.14(1.06)	95.7	90 - 110

### Matrix Spike

Lab ID = 996672-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.17	1.15(1.06)	101.	90 - 110

### Matrix Spike

Lab ID = 996672-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	18.7	18.8(10.6)	99.2	90 - 110

### Matrix Spike

Lab ID = 996672-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.14	1.13(1.06)	101.	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 6

Project Number: 424973.01.DM

Printed 9/12/2011

Matrix Spike						Lab ID = 996740-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.22(1.06)	100.	90 - 110
Matrix Spike						Lab ID = 996741-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.63	6.62(5.30)	100.	90 - 110
Matrix Spike						Lab ID = 996741-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.82	6.77(5.30)	101.	90 - 110
Matrix Spike						Lab ID = 996741-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.98	7.04(5.30)	98.9	90 - 110
Matrix Spike						Lab ID = 996741-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.19	1.18(1.06)	101.	90 - 110
Matrix Spike						Lab ID = 996741-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.14	1.14(1.06)	100.	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.97	5.00	99.4	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.1	10.0	101.	95 - 105

**TRUESDAIL LABORATORIES, INC.**

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&amp;E Topock Project

Page 4 of 6

Project Number: 424973.01.DM

Printed 9/12/2011

**Metals by EPA 200.8, Total**

Batch 090911A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996740-001 Chromium	ug/L	09/09/2011 17:53	5.00	0.110	1.0	ND
Manganese	ug/L	09/09/2011 17:53	5.00	0.285	1.0	1.9

**Method Blank**

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

**Duplicate**

Lab ID = 996740-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	1.92	1.94	1.27	0 - 20

**Lab Control Sample**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	45.4	50.0	90.8	85 - 115
Manganese	ug/L	1.00	48.3	50.0	96.6	85 - 115

**Matrix Spike**

Lab ID = 996740-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	232.	250.(250.)	93.0	75 - 125
Manganese	ug/L	5.00	238.	252.(250.)	94.6	75 - 125

**Matrix Spike Duplicate**

Lab ID = 996740-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	222.	250.(250.)	88.8	75 - 125
Manganese	ug/L	5.00	231.	252.(250.)	91.5	75 - 125

**MRCCS - Secondary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	45.3	50.0	90.7	90 - 110
Manganese	ug/L	1.00	46.9	50.0	93.7	90 - 110

**MRCVS - Primary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.5	50.0	97.0	90 - 110
Manganese	ug/L	1.00	49.8	50.0	99.6	90 - 110

**Interference Check Standard A**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	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.

010



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 6

Project Number: 424973.01.DM

Printed 9/12/2011

## 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
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
Chromium	ug/L	1.00	47.4	50.0	94.8	80 - 120

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.1	50.0	96.2	80 - 120

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	48.9	50.0	97.8	80 - 120

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	50.6	50.0	101.	80 - 120

## Total Dissolved Solids by SM 2540 C

Batch 08TDS11K

8/17/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996740-001 Total Dissolved Solids	mg/L	08/17/2011	1.00	0.434	125	4020

## Method Blank

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

## Duplicate

Lab ID = 996740-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	3960	4020	1.50	0 - 5

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	520.	500.	104	90 - 110

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011



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 6

Project Number: 424973.01.DM

Printed 9/12/2011

## Turbidity by SM 2130 B

Batch 08TUC11G

8/16/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996740-001 Turbidity	NTU	08/16/2011	1.00	0.0140	0.100	ND

### Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

### Duplicate

Lab ID = 996740-001

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	7.83	8.00	97.9	90 - 110

### Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.90	8.00	98.8	90 - 110

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**

*for*   
Mona Nassimi  
Manager, Analytical Services



## Calculations

Batch: 08TDS11K

Date Calculated: 8/18/11

[illegible]

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

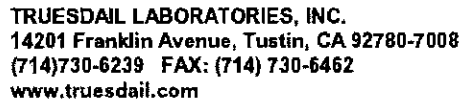
Batch: 08TDS11K

Date Calculated: 8/18/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
996732-1	0.639	ND	0.41535	ND
996732-2	90.1	0.70	58.565	1.08
996732-3	1.39	ND	0.9035	ND
996734-2	172	0.55	111.8	0.85
996734-4	513	0.64	333.45	0.98
996740	6930	0.58	4504.5	0.89
996741-1	1895	0.61	1231.75	0.94
996741-2	1630	0.61	1059.5	0.94
996741-3	736	0.64	478.4	0.99
996741-4	522	0.66	339.3	1.01
996740DUP	6930	0.57	4504.5	0.88
LCS				
996777-1	2190	0.63	1423.5	0.96
996777-2	1330	0.59	864.5	0.91
996777-3	1290	0.66	838.5	1.01
996777-4	862	0.58	560.3	0.90
996777-5	412	0.56	267.8	0.87
996777-6	2070	0.68	1345.5	1.05
996777-7	2290	0.66	1488.5	1.01
996777-8	895	0.60	581.75	0.93







**[IM3Plant-WDR-322]**

PAGE 1 OF 1

**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"/> <u>4°C</u> °F
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time		
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		

037

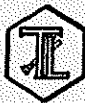
## Hexavalent Chromium

## Method EPA 218.6 and SW 7199 Sample pH Log

[illegible]

### Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
996810(1-2)	<1	<2	8/18/11	M.M	Yes	-
996811(1-4)	↓	↓	↓	↓	↓	-
996812(1-4)	↓	↓	↓	↓	↓	-
996813(1-13)	↓	↓	↓	↓	↓	-
996740	<1	72	8/18/11	ES	No	yes @ 2:00 p.m.
996835(1-2)	<1	<2	8/19/11	M.M	Yes	-
996836(1-4)	↓	↓	↓	↓	↓	-
996837	↓	↓	↓	↓	↓	-
996838(1-2)	↓	↓	↓	↓	↓	-
996839(1-5)	↓	↓	↓	↓	↓	-
996799(1-3)	Solid	-	8/19/11	M.M	Yes	TTLC/SPLS
996824(1-5)	Solid	-	↓	↓	↓	TTLC
996853(1-1)	<1	<2	8/22/11	M.M	Yes	-
996859	<1	>2	8/22/11	VR	No	VRS @ 1 p.m.
996893(1-9)	Solid	-	8/23/11	M.M	Yes	TTLC
996892(1-3)	Liquid	-	8/23/11	↓	↓	-
996952	Solid	8.1	8/25/11	↓	Yes	TTLC
996951-2	<2	22	8/25/11	M.M	Yes	-
996948-	↓	↓	↓	↓	↓	-
996913(1-16)	↓	<2	↓	↓	↓	-
996934(1-16)	<2	<2	8/26/11	M.M	Yes	-
996941	↓	↓	↓	↓	↓	-
996993(1-1)	Solid	-	08/29/11	M.M	Yes	TTLC
996912	21	72	8/29/11	ES	No	yes @ 3:00 p.m.



TRUESDAIL LABORATORIES, INC.

## Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 996740

Date Delivered: 08/15/11 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 °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: Linda

# 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

August 30, 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-322B PROJECT, GROUNDWATER  
MONITORING, TLI NO.: 996859

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-322B 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 August 19, 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.


The straight run for the matrix spike for sample SC-700B-WDR-322B for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery was within acceptable limits, the data from the straight run is reported.


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.

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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

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(714) 730-6239 · FAX (714) 730-6462  
[www.truesdail.com](http://www.truesdail.com)

**Laboratory No.:** 996859

**Date:** August 30, 2011

**Collected:** August 19, 2011

**Received:** August 19, 2011

## ANALYST LIST

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



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

**Attention:** Shawn Duffy

**Laboratory No.:** 996859

**Date Received:** August 19, 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
996859-001	SC-700B-WDR-322B	E120.1	NONE	8/19/2011	13:18	EC	6910	umhos/cm	2.00
996859-001	SC-700B-WDR-322B	E200.8	NONE	8/19/2011	13:18	Chromium	ND	ug/L	1.0
996859-001	SC-700B-WDR-322B	E200.8	NONE	8/19/2011	13:18	Manganese	6.7	ug/L	1.0
996859-001	SC-700B-WDR-322B	E218.6	LABFLT	8/19/2011	13:18	Chromium, hexavalent	ND	ug/L	0.20
996859-001	SC-700B-WDR-322B	SM2130B	NONE	8/19/2011	13:18	Turbidity	ND	NTU	0.100
996859-001	SC-700B-WDR-322B	SM2540C	NONE	8/19/2011	13:18	Total Dissolved Solids	3940	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.

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## 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. 996859

Page 1 of 7

Printed 8/30/2011

Samples Received on 8/19/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-322B	996859-001	08/19/2011 13:18	Water

Specific Conductivity - EPA 120.1		Batch 08EC11G	8/22/2011			
Parameter	Unit	Analyzed	DF	MDL	RL	Result
996859-001 Specific Conductivity	umhos/cm	08/22/2011	1.00	0.0380	2.00	6910

### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

### Duplicate

Lab ID = 996859-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	6920	6910	0.145	0 - 10

### Lab Control Sample

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

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	708	706	100.	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	980.	998	98.2	90 - 110





# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 7

Project Number: 424973.01.DM

Printed 8/30/2011

## Chrome VI by EPA 218.6

Batch 08CrH11Y

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996859-001 Chromium, Hexavalent	ug/L	08/22/2011 17:40	1.05	0.0260	0.20	ND

### Method Blank

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

### Duplicate

Lab ID = 996813-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	4.04	4.01	0.820	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.03	5.00	101.	90 - 110

### Matrix Spike

Lab ID = 996813-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	9.47	9.31(5.30)	103.	90 - 110

### Matrix Spike

Lab ID = 996813-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	9.64	9.56(5.30)	101.	90 - 110

### Matrix Spike

Lab ID = 996813-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	10.2	10.1(5.30)	101.	90 - 110

### Matrix Spike

Lab ID = 996813-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	10.1	10.1(5.30)	100.	90 - 110

### Matrix Spike

Lab ID = 996813-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	19.4	19.5(10.6)	99.1	90 - 110

### Matrix Spike

Lab ID = 996813-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	17.3	17.1(10.6)	102.	90 - 110

### Matrix Spike

Lab ID = 996813-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.74	7.72(5.30)	100.	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 7

Project Number: 424973.01.DM

Printed 8/30/2011

Matrix Spike						Lab ID = 996813-011
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	9.19	9.10(5.30)	102.	90 - 110
Matrix Spike						Lab ID = 996835-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	8.09	7.89(5.25)	104.	90 - 110
Matrix Spike						Lab ID = 996835-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	10.0	9.92(5.30)	102.	90 - 110
Matrix Spike						Lab ID = 996837-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	16.5	16.6(10.6)	99.6	90 - 110
Matrix Spike						Lab ID = 996859-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.26	1.25(1.06)	101.	90 - 110
Matrix Spike						Lab ID = 996859-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.63	5.55(5.25)	101.	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.99	5.00	99.7	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105
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	10.3	10.0	103.	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 7

Project Number: 424973.01.DM

Printed 9/6/2011

Revised

## Metals by EPA 200.8, Total

Batch 082411A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996859-001 Chromium	ug/L	08/24/2011 16:51	5.00	0.110	1.0	ND
Manganese	ug/L	08/24/2011 16:51	5.00	0.980	1.0	6.7

### Method Blank

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

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.8	50.0	99.5	85 - 115
Manganese	ug/L	1.00	46.6	50.0	93.3	85 - 115

### Matrix Spike

Lab ID = 996859-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	248.	250.(250.)	99.3	75 - 125
Manganese	ug/L	5.00	252.	257.(250.)	98.0	75 - 125

### Matrix Spike Duplicate

Lab ID = 996859-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	253.	250.(250.)	101.	75 - 125
Manganese	ug/L	5.00	260.	257.(250.)	101.	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.4	50.0	98.7	90 - 110
Manganese	ug/L	1.00	46.5	50.0	92.9	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.2	50.0	96.4	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.7	50.0	103.	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	51.2	50.0	102.	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	51.5	50.0	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 6 of 7****Project Number: 424973.01.DM****Printed 8/30/2011****Total Dissolved Solids by SM 2540 C**

Batch 08TDS11M

8/22/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996859-001 Total Dissolved Solids	mg/L	08/22/2011	1.00	0.434	125	3940

## Method Blank

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

## Duplicate

Lab ID = 996859-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	3920	3940	0.509	0 - 5

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	503	500	101	90 - 110

**Turbidity by SM 2130 B**

Batch 08TUC11L

8/20/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996859-001 Turbidity	NTU	08/20/2011	1.00	0.0140	0.100	ND

## Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

## Duplicate

Lab ID = 996859-001

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	7.57	8.00	94.6	90 - 110

## Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.60	8.00	95.0	90 - 110



**TRUESDAIL LABORATORIES, INC.**

*Report Continued*

**Client: E2 Consulting Engineers, Inc.**

**Project Name: PG&E Topock Project**

**Page 7 of 7**

**Project Number: 424973.01.DM**

**Printed 8/30/2011**

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**

*for* 

Mona Nassimi

Manager, Analytical Services

EL Condon



# Total Dissolved Solids by SM 2540 C

## Calculations

Batch: 08TDS11M

Date Calculated: 8/23/11

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	68.6151	68.6156	68.6152	0.0004	No	0.0001	1.0	25.0	ND	1
996835-1	20	51.1298	51.2134	51.2132	0.0002	No	0.0834	4170.0	125.0	4170.0	1
996835-2	20	75.3059	75.3708	75.3707	0.0001	No	0.0648	3240.0	125.0	3240.0	1
996836-1	50	76.2019	76.2585	76.2584	0.0001	No	0.0565	1130.0	50.0	1130.0	1
996836-2	50	65.6325	65.6857	65.6853	0.0004	No	0.0528	1056.0	50.0	1056.0	1
996836-3	100	73.8308	73.862	73.8616	0.0004	No	0.0308	308.0	25.0	308.0	1
996836-4	100	72.4299	72.4718	72.4712	0.0004	No	0.0413	413.0	25.0	413.0	1
996837	50	49.4185	49.5147	49.5147	0.0000	No	0.0962	1924.0	50.0	1924.0	1
996853-1	50	74.7133	74.7555	74.7554	0.0001	No	0.0421	842.0	50.0	842.0	1
996859	20	49.7002	49.7794	49.7791	0.0003	No	0.0789	3945.0	125.0	3945.0	1
996859D	20	51.1414	51.2198	51.2198	0.0000	No	0.0784	3920.0	125.0	3920.0	1
LCS	100	67.7925	67.8432	67.8428	0.0004	No	0.0503	503.0	25.0	503.0	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

\* COC - Signed

### TDS/EC CHECK

Date Calculated: 8/23/11

[illegible]



TRUESDAIL LABORATORIES, INC.  
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# CHAIN OF CUSTODY RECORD

996859

M3Plant-WDR-322B]

COC Number

TURNAROUND TIME 10 Days  
DATE 08/19/11 PAGE 1 OF 1

COMPANY E2				<div style="display: flex; justify-content: space-between;"> <div> <p>Rec'd 08/19/11 s22b 996859</p> </div> <div> <p>NUMBER OF CONTAINERS</p> </div> </div>										COMMENTS					
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) P. Knight																			
SAMPLE I.D.	DATE	TIME	DESCRIPTION	C6 (218.6) Lab Filtered	Total Metals (200.7) Cr, Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)											
SC-700B-WDR-322B	08/19/11	13:18	Water	x	x	x	x	x											
																		3	M=6 (200.7)
																		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"/> 40°C °F
P. Knight	C. Knight	CH2MHill	8-19-11 15:53			
Signature (Received)	Printed Name	Company/Agency	Date/Time	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Rafael Davis	Rafael	I-L-I	8-19-11 15:53			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	SPECIAL REQUIREMENTS:		
Rafael Davis	Rafael	I-L-I	8-19-11 21:30			
Signature (Received)	Printed Name	Company/Agency	Date/Time			
Linda	Shabunina	TLI	8/19/11 21:30			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time			
Signature (Received)	Printed Name	Company/Agency	Date/Time			

039



## Hexavalent Chromium

## Method EPA 218.6 and SW 7199 Sample pH Log

[illegible]

# Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
99681011-2	<1	<2	8/18/11	M-M	Yes	-
99681111-3	↓	↓	↓	↓	↓	-
99681211-4	↓	↓	↓	↓	↓	-
99681311-13	↓	↓	↓	↓	↓	-
996740	<1	72	8/18/11	ES	No	yes @ 2:00 p.m.
99683511-2	<1	<2	8/19/11	M-M	Yes	-
99683611-4	↓	↓	↓	↓	↓	-
996837	↓	↓	↓	↓	↓	-
99683811-2	↓	↓	↓	↓	↓	-
99683911-5	↓	↓	↓	↓	↓	-
99679911-3	Solid	-	8/19/11	M-M	Yes	TTLC/S&LS
99682411-5	Solid	-	↓	↓	↓	TTLC
99685311-1	<1	<2	8/22/11	M-M	Yes	-
996859	<1	>2	8/22/11	KK	No	VRS @ 1 p.m.
99689311-9	Solid	-	8/23/11	M-M	Yes	TTLC
99689211-3	Liquid	-	8/23/11	↓	↓	-
996950	Solid	81	8/25/11	↓	Yes	TTLC
996951-2	<2	<2	8/25/11	M-M	Yes	-
996948-	↓	↓	↓	↓	↓	-
996913-116	↓	<2	↓	↓	↓	-
99693411-10	<2	<2	8/26/11	M-M	Yes	-
996941	↓	↓	↓	↓	↓	-
99699311-6A	Solid	-	08/29/11	M-M	Yes	TTLC
996912	<1	72	8/29/11	ES	No	yes @ 3:00 p.m.



TRUESDAIL LABORATORIES, INC.

## Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 996859

Date Delivered: 08/19/11 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°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: Luddy

# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE  
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October 13, 2011

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-WDR-323 PROJECT;  
GROUNDWATER MONITORING, TLI NO.: 996912

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-323 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 August 23, 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.


The straight run for the matrix spike for sample SC-700B-WDR-323 for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery was within acceptable limits, the data from the straight run is reported.


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.

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**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

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**Laboratory No.:** 996912

**Date:** September 7, 2011

**Collected:** August 23, 2011

**Received:** August 23, 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	Hope Trinidad
EPA 218.6	Hexavalent Chromium	Sonya Bersudsky



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

**Attention:** Shawn Duffy

**Laboratory No.:** 996912

**Date Received:** August 23, 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
996912-001	SC-700B-WDR-323	E120.1	NONE	8/23/2011	12:16	EC	7110	umhos/cm	2.00
996912-001	SC-700B-WDR-323	E200.8	NONE	8/23/2011	12:16	Chromium	ND	ug/L	1.0
996912-001	SC-700B-WDR-323	E200.8	NONE	8/23/2011	12:16	Manganese	3.1	ug/L	1.0
996912-001	SC-700B-WDR-323	E218.6	LABFLT	8/23/2011	12:16	Chromium, hexavalent	ND	ug/L	0.20
996912-001	SC-700B-WDR-323	SM2130B	NONE	8/23/2011	12:16	Turbidity	0.136	NTU	0.100
996912-001	SC-700B-WDR-323	SM2540C	NONE	8/23/2011	12:16	Total Dissolved Solids	4130	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.

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## REPORT

**Client:** E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Laboratory No. 996912

Page 1 of 8

Printed 9/7/2011

Attention: Shawn Duffy

Project Name: PG&E Topock Project

P.O. Number: 424973.01.DM

Project Number: 424973.01.DM

Samples Received on 8/23/2011 10:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-323	996912-001	08/23/2011 12:16	Water

Specific Conductivity - EPA 120.1		Batch 08EC11H	8/26/2011			
Parameter	Unit	Analyzed	DF	MDL	RL	Result
996912-001 Specific Conductivity	umhos/cm	08/26/2011	1.00	0.0380	2.00	7110

### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

### Duplicate

Lab ID = 996913-006

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	947	946	0.106	0 - 10

### Duplicate

Lab ID = 996913-016

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	957	956	0.104	0 - 10

### Lab Control Sample

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

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	978	998	98.0	90 - 110

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008



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 8

Project Number: 424973.01.DM

Printed 9/7/2011

## Chrome VI by EPA 218.6

Batch 08CrH11AA

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996912-001 Chromium, Hexavalent	ug/L	08/25/2011 14:38	1.05	0.0260	0.20	ND

### Method Blank

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

### Duplicate

Lab ID = 996934-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	ND	0.0670	0	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.09	5.00	102.	90 - 110

### Matrix Spike

Lab ID = 996912-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.28	1.22(1.06)	105.	90 - 110

### Matrix Spike

Lab ID = 996912-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.90	5.55(5.25)	106.	90 - 110

### Matrix Spike

Lab ID = 996934-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.15	1.13(1.06)	102.	90 - 110

### Matrix Spike

Lab ID = 996934-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.17	1.14(1.06)	103.	90 - 110

### Matrix Spike

Lab ID = 996934-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.16	1.14(1.06)	103.	90 - 110

### Matrix Spike

Lab ID = 996934-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.13(1.06)	108.	90 - 110

### Matrix Spike

Lab ID = 996934-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.18(1.06)	104.	90 - 110





# 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 9/7/2011

## Metals by EPA 200.8, Total

Batch 090111C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996912-001 Chromium	ug/L	09/02/2011 07:50	5.00	0.110	1.0	ND
Manganese	ug/L	09/02/2011 07:50	5.00	0.980	1.0	3.1

### Method Blank

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

### Duplicate

Lab ID = 996912-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	3.32	3.10	6.91	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.7	50.0	99.3	85 - 115
Manganese	ug/L	1.00	48.6	50.0	97.3	85 - 115

### Matrix Spike

Lab ID = 996912-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	254.	250.(250.)	101.	75 - 125
Manganese	ug/L	5.00	242.	253.(250.)	95.4	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.0	50.0	100.0	90 - 110
Manganese	ug/L	1.00	49.2	50.0	98.4	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.9	50.0	97.8	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.1	50.0	98.2	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	48.0	50.0	96.1	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	48.2	50.0	96.4	90 - 110

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# 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 9/7/2011

## Total Dissolved Solids by SM 2540 C

Batch 08TDS11N

8/29/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996912-001 Total Dissolved Solids	mg/L	08/29/2011	1.00	0.434	125	4130

### Method Blank

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

### Duplicate

Lab ID = 996912-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4260	4130	3.22	0 - 5

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	496	500	99.2	90 - 110

## Turbidity by SM 2130 B

Batch 08TUC11N

8/24/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
996912-001 Turbidity	NTU	08/24/2011	1.00	0.0140	0.100	0.136

### Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

### Duplicate

Lab ID = 996912-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.138	0.136	1.46	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.55	8.00	107	90 - 110

### Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.30	8.00	104	90 - 110



**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 9/7/2011**

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**

*for* 

Mona Nassimi

Manager, Analytical Services

## Calculations

Date Calculated: 8/29/11

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

## TDS/EC CHECK

Date Calculated: 8/29/11

[illegible]



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-323]

COC Number

TURNAROUND TIME

10 Days

DATE 08/23/11

PAGE 1 OF 1

996912

COMPANY	E2	<div>Cr6 (218.6) Lab Filtered</div> <div>Total Metals (200.7) Cr, Mn</div> <div>Specific Conductance (120.1)</div> <div>TDS (SM2540C)</div> <div>Turbidity (SM2130)</div> <div>NUMBER OF CONTAINERS</div>										COMMENTS			
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)	C. Knight														
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6	Total Metals	Specific Conductance	TDS	Turbidity						NUMBER OF CONTAINERS	
SC-700B-WDR-323	08/23/11	12:16	Water	x	x	x	x	x						3	PM = 6 (200.7)
													3	TOTAL NUMBER OF CONTAINERS	

Rec'd 08/23/11  
s 996912

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. Knight	C. Knight	CH2M HILL	8-23-11 15:30		3.9°C	
Signature (Received)	Printed Name	Company/Agency	Date/Time	CUSTODY SEALED	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
Rafael Davis	Rafael Davis	T.H.I.	8-23-11 15:30			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	SPECIAL REQUIREMENTS:		
Rafael	Rafael	T.H.I.	8-23-11 22:30			
Signature (Received)	Printed Name	Company/Agency	Date/Time			
Shabane	Shabane	T.H.I.	8/23/11 22:30			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time			
Signature (Received)	Printed Name	Company/Agency	Date/Time			

039

# Hexavalent Chromium

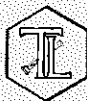
## Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
8/19/11	996839-3	9.5	N/A	N/A	N/A	AL
↓	↓ -4	↓	↓	↓	↓	↓
08/19/11	996853-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
08/22/11	996859	9.5	N/A	N/A	N/A	SB
08/24/11	996912	7.0	5.00	9.5	9:15	SB
08/24/11	996913-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
↓	↓ -11	↓	↓	↓	↓	↓
↓	↓ -12	↓	↓	↓	↓	↓
↓	↓ -13	↓	↓	↓	↓	↓
↓	↓ -14	↓	↓	↓	↓	↓
↓	↓ -15	↓	↓	↓	↓	↓
08/25/11	996934-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓

### Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
996810(1-2)	<1	<2	8/18/11	M.M	Yes	-
996811(1-3)	↓	↓	↓	↓	↓	-
996812(1-4)	↓	↓	↓	↓	↓	-
996813(1-13)	↓	↓	↓	↓	↓	-
996740	<1	72	8/18/11	ES	No	yes @ 2:00 p.m.
996835(1-2)	<1	<2	8/19/11	M.M	Yes	-
996836(1-4)	↓	↓	↓	↓	↓	-
996837	↓	↓	↓	↓	↓	-
996838(1-2)	↓	↓	↓	↓	↓	-
996839(1-5)	↓	↓	↓	↓	↓	-
996799(1-3)	Solid	-	8/19/11	M.M	Yes	TTLC/SRLS
996824(1-5)	Solid	-	↓	↓	↓	TTLC
996853(1-1)	<1	<2	8/22/11	M.M	Yes	-
996859	<1	>2	8/22/11	KK	No	VRS @ 1 p.m.
996893(1-9)	Solid	-	8/23/11	M.M	Yes	TTLC
996892(1-3)	liquid	-	8/23/11	↓	↓	-
996950	Solid	81	8/25/11	↓	Yes	TTLC
996951-2	<2	72	8/25/11	M.M	Yes	-
996948-	↓	↓	↓	↓	↓	-
996913(1-16)	↓	<2	↓	↓	↓	-
996934(1-10)	<2	<2	8/26/11	M.M	Yes	-
996941	↓	↓	↓	↓	↓	-
996993(1-1)	Solid	-	08/29/11	M.M	Yes	TTLC
996912	<1	72	8/29/11	ES	No	yes @ 3:00 p.m.
996539(1-8)	soil	-	8/25/11	ES	No	TTLC
997023	<1	<2	08/31/11	M.M	Yes	-
997024(1-5)	↓	↓	↓	↓	↓	-
997022	<1	72	9/2/11	ES	No	yes @ 11:30 a.m.
997095(1-2)	<1	72	9/7/11	ES	No	yes @ 11:00 a.m.
997096(1-2)	<1	72	↓	↓	↓	↓
997097(1-2)	<1	<2	9/7/11	M.M	Yes	-
997099(1-4)	↓	↓	↓	↓	↓	-





TRUESDAIL LABORATORIES, INC.

## Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 9969/2

Date Delivered: 08/23/11 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)? 3.9°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: Lucia

# 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

September 9, 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-324 PROJECT, GROUNDWATER  
MONITORING, TLI NO.: 997022

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-324 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 August 30, 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.


The straight run for the matrix spike for sample SC-700B-WDR-324 for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery was within acceptable limits, the data from the straight run is reported.

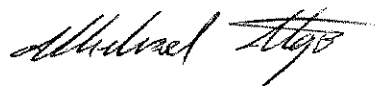
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

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.

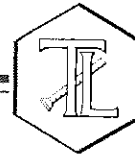
Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

  
for Mona Nassimi  
Manager, Analytical Services

  
Michael Ngo  
Quality Assurance/Quality Control Officer

# TRUESDAIL LABORATORIES, INC.

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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.:** 997022

**Date:** September 9, 2011

**Collected:** August 30, 2011

**Received:** August 30, 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	Sonya Bersudsky



**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.:** 997022

**Date Received:** August 30, 2011

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
997022-001	SC-700B-WDR-324	E120.1	NONE	8/30/2011	21:30	EC	7200	umhos/cm	2.00
997022-001	SC-700B-WDR-324	E200.8	NONE	8/30/2011	21:30	Chromium	ND	ug/L	1.0
997022-001	SC-700B-WDR-324	E200.8	NONE	8/30/2011	21:30	Manganese	1.0	ug/L	1.0
997022-001	SC-700B-WDR-324	E218.6	LABFLT	8/30/2011	21:30	Chromium, hexavalent	ND	ug/L	0.20
997022-001	SC-700B-WDR-324	SM2130B	NONE	8/30/2011	21:30	Turbidity	0.109	NTU	0.100
997022-001	SC-700B-WDR-324	SM2540C	NONE	8/30/2011	21:30	Total Dissolved Solids	4100	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:

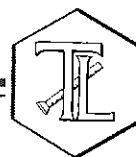
Results below 0.01ppm will have two (2) significant figures.

Result above or equal to 0.01ppm will have three (3) significant figures.

Quality Control data will always have three (3) significant figures.

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## 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. 997022

Page 1 of 6

Printed 9/9/2011

Samples Received on 8/30/2011 10:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-324	997022-001	08/30/2011 21:30	Water

### Specific Conductivity - EPA 120.1

Batch 08EC11J

8/31/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997022-001 Specific Conductivity	umhos/cm	08/31/2011	1.00	0.0380	2.00	7200

#### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

#### Duplicate

Lab ID = 997024-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	510.	511	0.196	0 - 10

#### Lab Control Sample

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	712	706	101.	90 - 110

#### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	978	998	98.0	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 6

Project Number: 424973.01.DM

Printed 9/9/2011

## Chrome VI by EPA 218.6

Batch 08CrH11AC

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997022-001 Chromium, Hexavalent	ug/L	08/31/2011 09:48	1.05	0.0260	0.20	ND

### Method Blank

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

### Duplicate

Lab ID = 997023-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	3.54	3.55	0.254	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.94	5.00	98.8	90 - 110

### Matrix Spike

Lab ID = 997022-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.23	1.22(1.06)	101.	90 - 110

### Matrix Spike

Lab ID = 997022-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.53	5.45(5.25)	102.	90 - 110

### Matrix Spike

Lab ID = 997023-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	8.77	8.85(5.30)	98.5	90 - 110

### Matrix Spike

Lab ID = 997024-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.69	6.38(5.30)	106.	90 - 110

### Matrix Spike

Lab ID = 997024-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.76	1.69(1.06)	106.	90 - 110

### Matrix Spike

Lab ID = 997024-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.56	1.49(1.06)	107.	90 - 110

### Matrix Spike

Lab ID = 997024-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.57	1.49(1.06)	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.

009



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 6

Project Number: 424973.01.DM

Printed 9/9/2011

**Metals by EPA 200.8, Total**

Batch 090611A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997022-001 Chromium	ug/L	09/06/2011 10:17	5.00	0.110	1.0	ND
Manganese	ug/L	09/06/2011 10:17	5.00	0.285	1.0	1.0

Method Blank

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

Duplicate

Lab ID = 997022-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	ND	1.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.7	50.0	99.4	85 - 115
Manganese	ug/L	1.00	49.2	50.0	98.4	85 - 115

Matrix Spike

Lab ID = 997022-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	244	250.(250.)	97.6	75 - 125
Manganese	ug/L	5.00	235.	251(250.)	93.5	75 - 125

Matrix Spike Duplicate

Lab ID = 997022-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	246.	250.(250.)	98.3	75 - 125
Manganese	ug/L	5.00	233.	251(250.)	93.0	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.2	50.0	100.	90 - 110
Manganese	ug/L	1.00	49.1	50.0	98.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.4	50.0	101.	90 - 110
Manganese	ug/L	1.00	49.4	50.0	98.8	90 - 110

Interference Check Standard A

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



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 6

Project Number: 424973.01.DM

Printed 9/9/2011

## 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
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
Chromium	ug/L	1.00	51.6	50.0	103.	80 - 120

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	50.5	50.0	101	80 - 120

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	50.3	50.0	101.	80 - 120

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	49.8	50.0	99.6	80 - 120

## Total Dissolved Solids by SM 2540 C

Batch 08TDS110

8/31/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997022-001 Total Dissolved Solids	mg/L	08/31/2011	1.00	0.434	125	4100

## Method Blank

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

## Duplicate

Lab ID = 997000-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	229	225	1.76	0 - 5

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	477	500.	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.





# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 6


Project Number: 424973.01.DM

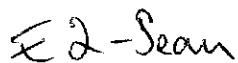
Printed 9/9/2011

Turbidity by SM 2130 B			Batch 08TUC11Q		8/31/2011	
Parameter	Unit	Analyzed	DF	MDL	RL	Result
997022-001 Turbidity	NTU	08/31/2011	1.00	0.0140	0.100	0.109
Method Blank						
Parameter	Unit	DF	Result			
Turbidity	NTU	1.00	ND			
Duplicate						
Lab ID = 997024-002						
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	7.53	8.00	94.1	90 - 110
Lab Control Sample Duplicate						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.50	8.00	93.8	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

*for*   
Mona Nassimi  
Manager, Analytical Services



6

## Calculations

Batch: Q8TDS110

Date Calculated: 9/1/91

[illegible]

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 

### TDS/EC CHECK

Date Calculated: 9/1/11

[illegible]

A handwritten signature in black ink, appearing to be "A." or similar, located at the bottom right of the page.





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-324]

COC Number

TURNAROUND TIME

10 Days

DATE 08/30/11

PAGE 1 OF 1

997022

COMPANY	E2															COMMENTS
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)																
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6 (218.6) Lab Filtered	Total Metals (200.7) Cr, Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)					NUMBER OF CONTAINERS	3	PA = 6 (200.7)	
SC-700B-WDR-324	08/30/11	930	Water	X	X	X	X	X					3			
														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 <input checked="" type="checkbox"/>	WARM <input type="checkbox"/> 51.1 °C °F
	Rafael Davila	OMI	8-30-11 1530			
Signature (Received)	Printed Name	Company/Agency	Date/Time	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
	Rafael Davila	T-L-I	8-30-11 1530			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	SPECIAL REQUIREMENTS:		
	Rafael Davila	T-L-I	8-30-11 2230			
Signature (Received)	Printed Name	Company/Agency	Date/Time			
	Rafael Davila	T-L-I	8/30/11 2230			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time			
	Rafael Davila	T-L-I	8/30/11 2230			
Signature (Received)	Printed Name	Company/Agency	Date/Time			
	Rafael Davila	T-L-I	8/30/11 2230			

037

## Method EPA 218.6 and SW 7199 Sample pH Log

[illegible]

# Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
996810(1-2)	<1	<2	8/18/11	M-M	Yes	-
996811(1-4)	↓	↓	↓	↓	↓	-
996812(1-4)	↓	↓	↓	↓	↓	-
996813(1-13)	↓	↓	↓	↓	↓	-
996740	<1	7.2	8/18/11	ES	No	yes @ 2:00 pm
996835(1-2)	<1	<2	8/19/11	M-M	Yes	-
996836(1-4)	↓	↓	↓	↓	↓	-
996837	↓	↓	↓	↓	↓	-
996838(1-2)	↓	↓	↓	↓	↓	-
996839(1-5)	↓	↓	↓	↓	↓	-
996799(1-3)	Solid	-	8/19/11	M-M	Yes	TTLC/SLS
996824(1-5)	Solid	-	↓	↓	↓	TTLC
996853(1-1)	<1	<2	8/22/11	M-M	Yes	-
996859	<1	>2	8/22/11	KK	No	Yes @ 1 pm
996893(1-9)	Solid	-	8/23/11	M-M	Yes	TTLC
996892(1-3)	Liquid	-	8/23/11	↓	↓	-
996950	Solid	8.1	8/25/11	↓	Yes	TTLC
996951-2	<2	2.2	8/25/11	M-M	Yes	-
996948	↓	↓	↓	↓	↓	-
996913(1-16)	↓	<2	↓	↓	↓	-
996934(1-16)	<2	<2	8/26/11	M-M	Yes	-
996941	↓	↓	↓	↓	↓	-
996993(1-2)	Solid	-	08/29/11	M-M	Yes	TTLC
996912	<1	7.2	8/29/11	ES	No	yes @ 3:00 pm
996539(1-8)	soil	-	8/25/11	ES	No	TTLC
997023	<1	<2	08/31/11	M-M	Yes	-
997024(1-5)	↓	↓	↓	↓	↓	-
997022	<1	7.2	9/2/11	ES	No	yes @ 11:30 am
997095(1-2)	<1	7.2	9/7/11	ES	No	yes @ 11:00 am
997096(1-2)	<1	2.2	↓	↓	↓	↓
997097(1-2)	<1	<2	9/7/11	M-M	Yes	-
997099(1-4)	↓	↓	↓	↓	↓	-
997008(1-2)	<1	<2	9/8/11	M-M	Yes	-
997132(1-8)	↓	↓	↓	↓	↓	-
996083(16,22)	<1	7.2	9/7/11	ES	No	yes @ 10:00 am



TRUESDAIL LABORATORIES, INC.

**ALERT !!**  
**Level III QC**

## Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 997022

Date Delivered: 8/30/11 Time: 22:30 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 °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: Rafael Davila

# 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	8-2-11	1400	8-2-11	1404	METER#1	8-2-11	1:00	-54.1	RON PHELPS	7.0

Notes:

SC-100B	8-2-11	1400	8-2-11	1406	METER#1	8-2-11	1:00	-54.1	RON PHELPS	7.3
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Notes:

SC-700B	8-9-11	1330	8-9-11	1335	METER#1	8-9-11	1:00	-54.6	RON PHELPS	7.1
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Notes:

SC-700B	8-15-11	6:00	8-15-11	6:05	METER#2	8-15-11	1:00	-57.3	Ryan Phelps	7.3
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Notes:

SC-700B	8-19-11	13:18	8-19-11	13:22	METER#2	8-19-11	04:30	57.2	P. Knight	7.2
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Notes:

SC-700B	8-23-11	12:16	8-23-11	12:24	METER#2	8-23-11	01:00	-57.2	C. Knight	7.0
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Notes:

SC-700B	8-30-11	930	8-30-11	935	METER#2	8-30-11	0100	-56.0	RON PHELPS	6.9
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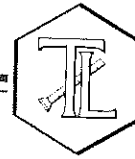
Notes:

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



# TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

September 30, 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: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-325 PROJECT, GROUNDWATER  
MONITORING,  
TLI NO.: 997096

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-325 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 September 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.


The straight run for the matrix spike for sample SC-700B-WDR-325 for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery was within acceptable limits, the data from the straight run is reported.

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

002

# 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.:** 408401.01.DM

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

**Laboratory No.:** 997096

**Date:** September 30, 2011

**Collected:** September 6, 2011

**Received:** September 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.

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Established 1931

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(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.:** 997096  
**Date Received:** September 6, 2011

**Attention:** Shawn Duffy

**Project Name:** PG&E Topock Project  
**Project No.:** 408401.01.DM  
**P.O. No.:** 408401.01.DM

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
997096-001	SC-700B-WDR-325	E120.1	NONE	9/6/2011	14:00	EC	7270	umhos/cm	2.00
997096-001	SC-700B-WDR-325	E200.7	NONE	9/6/2011	14:00	Aluminum	ND	ug/L	50.0
997096-001	SC-700B-WDR-325	E200.7	NONE	9/6/2011	14:00	BORON	1020	ug/L	200
997096-001	SC-700B-WDR-325	E200.7	NONE	9/6/2011	14:00	Iron	ND	ug/L	20.0
997096-001	SC-700B-WDR-325	E200.7	NONE	9/6/2011	14:00	Zinc	ND	ug/L	10.0
997096-001	SC-700B-WDR-325	E200.8	NONE	9/6/2011	14:00	Antimony	ND	ug/L	10.0
997096-001	SC-700B-WDR-325	E200.8	NONE	9/6/2011	14:00	Arsenic	ND	ug/L	1.0
997096-001	SC-700B-WDR-325	E200.8	NONE	9/6/2011	14:00	Barium	13.2	ug/L	10.0
997096-001	SC-700B-WDR-325	E200.8	NONE	9/6/2011	14:00	Chromium	1.5	ug/L	1.0
997096-001	SC-700B-WDR-325	E200.8	NONE	9/6/2011	14:00	Copper	ND	ug/L	5.0
997096-001	SC-700B-WDR-325	E200.8	NONE	9/6/2011	14:00	Lead	ND	ug/L	10.0
997096-001	SC-700B-WDR-325	E200.8	NONE	9/6/2011	14:00	Manganese	5.7	ug/L	1.0
997096-001	SC-700B-WDR-325	E200.8	NONE	9/6/2011	14:00	Molybdenum	16.9	ug/L	10.0
997096-001	SC-700B-WDR-325	E200.8	NONE	9/6/2011	14:00	Nickel	ND	ug/L	10.0
997096-001	SC-700B-WDR-325	E218.6	LABFLT	9/6/2011	14:00	Chromium, hexavalent	ND	ug/L	0.20
997096-001	SC-700B-WDR-325	E300	NONE	9/6/2011	14:00	Fluoride	1.94	mg/L	0.500
997096-001	SC-700B-WDR-325	E300	NONE	9/6/2011	14:00	Nitrate as N	2.97	mg/L	1.00
997096-001	SC-700B-WDR-325	E300	NONE	9/6/2011	14:00	Sulfate	492	mg/L	12.5
997096-001	SC-700B-WDR-325	SM2130B	NONE	9/6/2011	14:00	Turbidity	0.100	NTU	0.100
997096-001	SC-700B-WDR-325	SM2540C	NONE	9/6/2011	14:00	Total Dissolved Solids	4660	mg/L	125
997096-001	SC-700B-WDR-325	SM4500NH3D	NONE	9/6/2011	14:00	Ammonia-N	1.01	mg/L	0.500
997096-001	SC-700B-WDR-325	SM4500NO2B	NONE	9/6/2011	14:00	Nitrite as N	ND	mg/L	0.0050

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.



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
997096-002	SC-100B-WDR-325	E120.1	NONE	9/6/2011	14:00	EC	7810	umhos/cm	2.00
997096-002	SC-100B-WDR-325	E200.7	NONE	9/6/2011	14:00	Aluminum	ND	ug/L	50.0
997096-002	SC-100B-WDR-325	E200.7	NONE	9/6/2011	14:00	BORON	1040	ug/L	200
997096-002	SC-100B-WDR-325	E200.7	NONE	9/6/2011	14:00	Iron	ND	ug/L	20.0
997096-002	SC-100B-WDR-325	E200.7	LABFLT	9/6/2011	14:00	Iron	ND	ug/L	20.0
997096-002	SC-100B-WDR-325	E200.7	NONE	9/6/2011	14:00	Zinc	ND	ug/L	10.0
997096-002	SC-100B-WDR-325	E200.8	NONE	9/6/2011	14:00	Antimony	ND	ug/L	10.0
997096-002	SC-100B-WDR-325	E200.8	NONE	9/6/2011	14:00	Arsenic	3.4	ug/L	1.0
997096-002	SC-100B-WDR-325	E200.8	NONE	9/6/2011	14:00	Barium	25.6	ug/L	10.0
997096-002	SC-100B-WDR-325	E200.8	NONE	9/6/2011	14:00	Chromium	828	ug/L	1.0
997096-002	SC-100B-WDR-325	E200.8	NONE	9/6/2011	14:00	Copper	ND	ug/L	5.0
997096-002	SC-100B-WDR-325	E200.8	NONE	9/6/2011	14:00	Lead	ND	ug/L	10.0
997096-002	SC-100B-WDR-325	E200.8	LABFLT	9/6/2011	14:00	Manganese	8.7	ug/L	1.0
997096-002	SC-100B-WDR-325	E200.8	NONE	9/6/2011	14:00	Manganese	8.8	ug/L	1.0
997096-002	SC-100B-WDR-325	E200.8	NONE	9/6/2011	14:00	Molybdenum	20.4	ug/L	10.0
997096-002	SC-100B-WDR-325	E200.8	NONE	9/6/2011	14:00	Nickel	ND	ug/L	10.0
997096-002	SC-100B-WDR-325	E218.6	LABFLT	9/6/2011	14:00	Chromium, hexavalent	860	ug/L	21.0
997096-002	SC-100B-WDR-325	E300	NONE	9/6/2011	14:00	Fluoride	2.65	mg/L	0.500
997096-002	SC-100B-WDR-325	E300	NONE	9/6/2011	14:00	Nitrate as N	3.22	mg/L	1.00
997096-002	SC-100B-WDR-325	E300	NONE	9/6/2011	14:00	Sulfate	527	mg/L	12.5
997096-002	SC-100B-WDR-325	SM2130B	NONE	9/6/2011	14:00	Turbidity	0.18	NTU	0.100
997096-002	SC-100B-WDR-325	SM2320B	NONE	9/6/2011	14:00	Alkalinity	155	mg/L	5.00
997096-002	SC-100B-WDR-325	SM2320B	NONE	9/6/2011	14:00	Bicarbonate	155	mg/L	5.00
997096-002	SC-100B-WDR-325	SM2320B	NONE	9/6/2011	14:00	Carbonate	ND	mg/L	5.00
997096-002	SC-100B-WDR-325	SM2540C	NONE	9/6/2011	14:00	Total Dissolved Solids	4590	mg/L	125
997096-002	SC-100B-WDR-325	SM4500NH3D	NONE	9/6/2011	14:00	Ammonia-N	1.51	mg/L	0.500
997096-002	SC-100B-WDR-325	SM4500NO2B	NONE	9/6/2011	14:00	Nitrite as N	ND	mg/L	0.0050
997096-002	SC-100B-WDR-325	SM4500-PB_E	NONE	9/6/2011	14:00	Total Phosphorous-P	ND	mg/L	0.0200
997096-002	SC-100B-WDR-325	SM4500SI	NONE	9/6/2011	14:00	Soluble Silica	20.8	mg/L	1.00
997096-002	SC-100B-WDR-325	SM5310C	NONE	9/6/2011	14:00	Total Organic Carbon	ND	mg/L	0.300

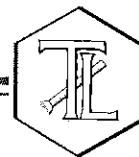
ND: Non Detected (below reporting limit)  
mg/L: Milligrams per liter.

**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.

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# TRUESDAIL LABORATORIES, INC.

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## 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. 997096

Page 1 of 32

Printed 9/30/2011

Samples Received on 9/6/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-325	997096-001	09/06/2011 14:00	Water
SC-100B-WDR-325	997096-002	09/06/2011 14:00	Water

### Anions By I.C. - EPA 300.0

Batch 09AN11D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-001 Fluoride	mg/L	09/07/2011 11:09	5.00	0.0250	0.500	1.94
Nitrate as Nitrogen	mg/L	09/07/2011 11:09	5.00	0.0550	1.00	2.97
Sulfate	mg/L	09/07/2011 13:25	25.0	0.500	12.5	492.
997096-002 Fluoride	mg/L	09/07/2011 11:20	5.00	0.0250	0.500	2.65
Nitrate as Nitrogen	mg/L	09/07/2011 11:20	5.00	0.0550	1.00	3.22
Sulfate	mg/L	09/07/2011 13:35	25.0	0.500	12.5	527.

### Method Blank

Parameter	Unit	DF	Result
Fluoride	mg/L	1.00	ND
Sulfate	mg/L	1.00	ND
Nitrate as Nitrogen	mg/L	1.00	ND

### Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Sulfate	mg/L	25.0	79.6	78.7	1.08	0 - 20

### Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	5.00	2.66	2.65	0.564	0 - 20
Nitrate as Nitrogen	mg/L	5.00	3.25	3.22	0.927	0 - 20

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 32

Project Number: 424973.01.DM

Printed 9/30/2011

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.11	4.00	103.	90 - 110
Sulfate	mg/L	1.00	19.9	20.0	99.6	90 - 110
Nitrate as Nitrogen	mg/L	1.00	3.97	4.00	99.2	90 - 110

## Matrix Spike

Lab ID = 997071-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Sulfate	mg/L	25.0	178.	179.(100.)	99.4	85 - 115

## Matrix Spike

Lab ID = 997096-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	5.00	23.0	22.6(20.0)	102.	85 - 115
Nitrate as Nitrogen	mg/L	5.00	24.2	23.2(20.0)	105.	85 - 115

## MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.14	4.00	104.	90 - 110
Sulfate	mg/L	1.00	20.0	20.0	100.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	3.98	4.00	99.6	90 - 110

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.15	3.00	105.	90 - 110

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.14	3.00	104.	90 - 110
Sulfate	mg/L	1.00	15.0	15.0	100.	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

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.97	3.00	99.0	90 - 110

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 32

Project Number: 424973.01.DM

Printed 9/30/2011

## Nitrite SM 4500-NO2 B

Batch 09NO211A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-001 Nitrite as Nitrogen	mg/L	09/07/2011 12:16	1.00	0.000360	0.0050	ND
997096-002 Nitrite as Nitrogen	mg/L	09/07/2011 12:17	1.00	0.000360	0.0050	ND

### Method Blank

Parameter	Unit	DF	Result
Nitrite as Nitrogen	mg/L	1.00	ND

### Duplicate

Lab ID = 997096-001

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	0.0398	0.0400	99.5	90 - 110

### Matrix Spike

Lab ID = 997096-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0197	0.0200(0.0200)	98.5	85 - 115

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0194	0.0200	97.0	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0197	0.0200	98.5	90 - 110

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 32

Project Number: 424973.01.DM

Printed 9/30/2011

## Alkalinity by SM 2320B

Batch: 09ALK11B

9/12/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-002 Alkalinity as CaCO <sub>3</sub>	mg/L	09/12/2011	1.00	1.68	5.00	155
Bicarbonate (Calculated)	mg/L	09/12/2011	1.00	1.68	5.00	155
Carbonate (Calculated)	mg/L	09/12/2011	1.00	1.68	5.00	ND

### Method Blank

Parameter	Unit	DF	Result
Alkalinity as CaCO <sub>3</sub>	mg/L	1.00	ND

### Duplicate

Lab ID = 997083-020

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO <sub>3</sub>	mg/L	1.00	80.0	80.0	0.00	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO <sub>3</sub>	mg/L	1.00	100.	100.	100.	90 - 110

### Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO <sub>3</sub>	mg/L	1.00	100.	100.	100.	90 - 110

### Matrix Spike

Lab ID = 997096-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO <sub>3</sub>	mg/L	1.00	250.	255(100.)	95.0	75 - 125

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 32

Project Number: 424973.01.DM

Printed 9/30/2011

## Specific Conductivity - EPA 120.1

Batch 09EC11B

9/9/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-001 Specific Conductivity	umhos/cm	09/09/2011	1.00	0.0380	2.00	7270
997096-002 Specific Conductivity	umhos/cm	09/09/2011	1.00	0.0380	2.00	7810

### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

### Duplicate

Lab ID = 997096-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7820	7810	0.128	0 - 10

### Lab Control Sample

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

### MRCCS - Secondary

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

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	990.	998	99.2	90 - 110

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017


**Client: E2 Consulting Engineers, Inc.**
**Project Name: PG&E Topock Project**
**Page 6 of 32**
**Project Number: 424973.01.DM**
**Printed 9/30/2011**
**Chrome VI by EPA 218.6**

Batch 09CrH11A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-001 Chromium, Hexavalent	ug/L	09/08/2011 16:35	1.05	0.0260	0.20	ND
997096-002 Chromium, Hexavalent	ug/L	09/08/2011 16:45	105	2.73	21.0	860.

**Method Blank**

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

**Duplicate**

Lab ID = 997132-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	2.17	2.16	0.314	0 - 20

**Lab Control Sample**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.94	5.00	98.9	90 - 110

**Matrix Spike**

Lab ID = 997095-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	20.1	20.1(10.6)	100.	90 - 110

**Matrix Spike**

Lab ID = 997096-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.18	1.18(1.06)	100.	90 - 110

**Matrix Spike**

Lab ID = 997096-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.51	5.42(5.25)	102.	90 - 110

**Matrix Spike**

Lab ID = 997096-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	105	1890	1910(1050)	98.0	90 - 110

**Matrix Spike**

Lab ID = 997097-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.58	1.55(1.06)	103.	90 - 110

**Matrix Spike**

Lab ID = 997097-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.20	7.10(5.30)	102.	90 - 110

**Matrix Spike**

Lab ID = 997098-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	8.84	8.79(5.30)	101.	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 32

Project Number: 424973.01.DM

Printed 9/30/2011

## Metals by EPA 200.7, Total

Batch 090811A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-001 Aluminum	ug/L	09/08/2011 10:50	1.00	2.83	50.0	ND
Boron	ug/L	09/08/2011 10:50	1.00	1.50	200.	1020
Iron	ug/L	09/08/2011 10:50	1.00	1.34	20.0	ND
997096-002 Aluminum	ug/L	09/08/2011 11:07	1.00	2.83	50.0	ND
Boron	ug/L	09/08/2011 11:07	1.00	1.50	200.	1040
Iron	ug/L	09/08/2011 11:07	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
Boron	ug/L	1.00	ND

### Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Aluminum	ug/L	1.00	59.7	61.5	2.97	0 - 20
Iron	ug/L	1.00	ND	0.00	0	0 - 20
Boron	ug/L	1.00	131.	134	2.11	0 - 20

Lab ID = 997083-023

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5250	5000	105.	85 - 115
Iron	ug/L	1.00	5160	5000	103.	85 - 115
Boron	ug/L	1.00	5000	5000	100.	85 - 115

### Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	1.00	1770	2060(2000)	85.5	75 - 125
Iron	ug/L	1.00	1830	2000(2000)	91.4	75 - 125
Boron	ug/L	1.00	1930	2130(2000)	89.8	75 - 125

Lab ID = 997083-023

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5200	5000	104.	90 - 110
Iron	ug/L	1.00	5100	5000	102.	90 - 110
Boron	ug/L	1.00	4780	5000	95.6	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5360	5000	107.	90 - 110

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 12 of 32

Project Number: 424973.01.DM

Printed 9/30/2011

## Metals by EPA 200.7, Total

Batch 092811A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-001 Zinc	ug/L	09/28/2011 17:08	1.00	3.89	10.0	ND
997096-002 Zinc	ug/L	09/28/2011 17:26	1.00	3.89	10.0	ND

### Method Blank

Parameter	Unit	DF	Result
Zinc	ug/L	1.00	ND

### Duplicate

Lab ID = 997096-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Zinc	ug/L	1.00	ND	0.00	0	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5360	5000	107.	85 - 115

### Matrix Spike

Lab ID = 997096-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Zinc	ug/L	1.00	1960	2000(2000)	98.2	75 - 125

### MRCCS - Secondary

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

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5260	5000	105.	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5070	5000	101.	90 - 110

### Interference Check Standard A

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

### Interference Check Standard A

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

### Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	2130	2000	106.	80 - 120

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Client: **E2 Consulting Engineers, Inc.**

Project Name: PG&amp;E Topock Project

Project Number: 424973.01.DM

Page 14 of 32

Printed 9/30/2011

**Metals by EPA 200.8, Total**

Batch 091511A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-001 Arsenic	ug/L	09/15/2011 15:38	5.00	0.285	1.0	ND
Barium	ug/L	09/15/2011 15:38	5.00	0.200	10.0	13.2
Chromium	ug/L	09/15/2011 15:38	5.00	0.110	1.0	1.5
Copper	ug/L	09/15/2011 15:38	5.00	0.125	5.0	ND
Lead	ug/L	09/15/2011 15:38	5.00	0.110	10.0	ND
Manganese	ug/L	09/15/2011 15:38	5.00	0.285	1.0	5.7
Molybdenum	ug/L	09/15/2011 15:38	5.00	2.70	10.0	16.9
Nickel	ug/L	09/15/2011 15:38	5.00	0.0750	10.0	ND
997096-002 Arsenic	ug/L	09/15/2011 16:39	5.00	0.285	1.0	3.4
Barium	ug/L	09/15/2011 16:39	5.00	0.200	10.0	25.6
Chromium	ug/L	09/15/2011 16:39	5.00	0.110	1.0	828
Copper	ug/L	09/15/2011 16:39	5.00	0.125	5.0	ND
Lead	ug/L	09/15/2011 16:39	5.00	0.110	10.0	ND
Manganese	ug/L	09/15/2011 16:39	5.00	0.285	1.0	8.8
Molybdenum	ug/L	09/15/2011 16:39	5.00	2.70	10.0	20.4
Nickel	ug/L	09/15/2011 16:39	5.00	0.0750	10.0	ND

**Method Blank**

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Barium	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Nickel	ug/L	1.00	ND
Copper	ug/L	1.00	ND
Lead	ug/L	1.00	ND
Manganese	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 15 of 32

Project Number: 424973.01.DM

Printed 9/30/2011

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	48.5	50.0	97.0	85 - 115
Barium	ug/L	1.00	48.3	50.0	96.7	85 - 115
Chromium	ug/L	1.00	48.8	50.0	97.5	85 - 115
Nickel	ug/L	1.00	48.0	50.0	95.9	85 - 115
Copper	ug/L	1.00	48.9	50.0	97.8	85 - 115
Lead	ug/L	1.00	49.7	50.0	99.5	85 - 115
Manganese	ug/L	1.00	50.4	50.0	101.	85 - 115
Molybdenum	ug/L	1.00	49.4	50.0	98.7	85 - 115

## Matrix Spike

Lab ID = 997096-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	245.	250.(250.)	98.0	75 - 125
Barium	ug/L	5.00	231	263.(250.)	87.1	75 - 125
Chromium	ug/L	5.00	226.	251.(250.)	89.9	75 - 125
Nickel	ug/L	5.00	210.	250.(250.)	83.8	75 - 125
Copper	ug/L	5.00	206.	250.(250.)	82.4	75 - 125
Lead	ug/L	5.00	204.	250.(250.)	81.4	75 - 125
Manganese	ug/L	5.00	231.	256.(250.)	90.3	75 - 125
Molybdenum	ug/L	5.00	234.	267.(250.)	86.8	75 - 125

## Matrix Spike Duplicate

Lab ID = 997096-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	240.	250.(250.)	95.9	75 - 125
Barium	ug/L	5.00	227.	263.(250.)	85.6	75 - 125
Chromium	ug/L	5.00	220.	251.(250.)	87.6	75 - 125
Nickel	ug/L	5.00	204.	250.(250.)	81.4	75 - 125
Copper	ug/L	5.00	200.	250.(250.)	80.2	75 - 125
Lead	ug/L	5.00	201	250.(250.)	80.4	75 - 125
Manganese	ug/L	5.00	230.	256.(250.)	89.8	75 - 125
Molybdenum	ug/L	5.00	231	267.(250.)	85.6	75 - 125

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# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 21 of 32

Project Number: 424973.01.DM

Printed 9/30/2011

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	47.6	50.0	95.2	80 - 120
Lead	ug/L	1.00	ND	0.00		

## Interference Check Standard AB

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

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	47.3	50.0	94.6	80 - 120

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	48.4	50.0	96.7	80 - 120
Molybdenum	ug/L	1.00	ND	0.00		

## Interference Check Standard AB

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

## Serial Dilution

Lab ID = 997095-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	50.0	26.6	26.4	0.680	0 - 10
Chromium	ug/L	50.0	908.	992	8.88	0 - 10

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 32

Project Number: 424973.01.DM

Printed 9/30/2011

**Metals by EPA 200.8, Total**

Batch 092911A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-001 Antimony	ug/L	09/29/2011 12:03	5.00	0.120	10.0	ND
997096-002 Antimony	ug/L	09/29/2011 12:33	5.00	0.120	10.0	ND

**Method Blank**

Parameter	Unit	DF	Result
Antimony	ug/L	1.00	ND

**Duplicate**

Lab ID = 997096-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Antimony	ug/L	5.00	ND	0.00	0	0 - 20

**Lab Control Sample**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	1.00	45.8	50.0	91.6	85 - 115

**Matrix Spike**

Lab ID = 997096-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Antimony	ug/L	5.00	200.	250.(250.)	80.2	75 - 125

**Matrix Spike Duplicate**

Lab ID = 997096-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Antimony	ug/L	5.00	205.	250.(250.)	82.0	75 - 125

**MRCCS - Secondary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	1.00	49.4	50.0	98.7	90 - 110

**MRCVS - Primary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	1.00	50.5	50.0	101.	90 - 110

**Interference Check Standard A**

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

**Interference Check Standard A**

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

**Interference Check Standard AB**

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





# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 23 of 32

Project Number: 424973.01.DM

Printed 10/5/2011

Revised

## Interference Check Standard AB

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

## Reactive Silica by SM4500-Si D

Batch 09Si11B

9/9/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-002 Silica	mg/L	09/09/2011	25.0	0.532	1.00	20.8

### Method Blank

Parameter	Unit	DF	Result
Silica	mg/L	1.00	ND

### Duplicate

Lab ID = 997096-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Silica	mg/L	25.0	20.8	20.8	0.194	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.232	0.220	105.	90 - 110

### Matrix Spike

Lab ID = 997096-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Silica	mg/L	25.0	30.1	30.8(10.0)	92.7	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.111	0.110	101	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.384	0.400	96.0	90 - 110



Report Continued

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 24 of 32****Project Number: 424973.01.DM****Printed 9/30/2011****Total Dissolved Solids by SM 2540 C**

Batch 09TDS11A

9/7/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-001 Total Dissolved Solids	mg/L	09/07/2011	1.00	0.400	125	4660
997096-002 Total Dissolved Solids	mg/L	09/07/2011	1.00	0.400	125	4590

## Method Blank

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

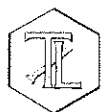
## Duplicate

Lab ID = 997099-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	1200	1230	2.80	0 - 5

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	492	500	98.4	90 - 110


*Report Continued*
**Client: E2 Consulting Engineers, Inc.**
**Project Name: PG&E Topock Project**
**Page 25 of 32**
**Project Number: 424973.01.DM**
**Printed 9/30/2011**
**Total Organic Carbon (T/DOC) SM 5310 C**

Batch 09TOC11C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-002 Total Organic Carbon	mg/L	09/12/2011 15:59	1.00	0.0103	0.300	ND

**Method Blank**

Parameter	Unit	DF	Result
Total Organic Carbon	mg/L	1.00	ND

**Duplicate**

Lab ID = 997083-020

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Organic Carbon	mg/L	1.00	3.17	3.21	1.22	0 - 20

**Lab Control Sample**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	24.7	25.0	98.7	90 - 110

**Matrix Spike**

Lab ID = 997083-021

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	13.4	12.5(10.0)	109.	75 - 125

**MRCCS - Secondary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	25.2	25.0	101.	90 - 110

**MRCVS - Primary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	10.7	10.0	107.	90 - 110

**MRCVS - Primary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	10.6	10.0	106.	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 26 of 32

Project Number: 424973.01.DM

Printed 9/30/2011

## Total Phosphate, SM 4500-PB,E

Batch 09TP11B

9/9/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-002 Phosphate, Total As P	mg/L	09/09/2011	1.00	0.00530	0.0200	ND

### Method Blank

Parameter	Unit	DF	Result
Phosphate, Total As P	mg/L	1.00	ND

### Duplicate

Lab ID = 997096-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Phosphate, Total As P	mg/L	1.00	ND	0.00	0	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.108	0.100	108.	90 - 110

### Matrix Spike

Lab ID = 997096-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0627	0.0650(0.0650)	96.5	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0634	0.0600	106.	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0690	0.0650	106.	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 27 of 32

Project Number: 424973.01.DM

Printed 9/30/2011

## Ammonia Nitrogen by SM4500-NH3D

Batch 09NH3-E11A

9/7/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-001 Ammonia as N	mg/L	09/07/2011	1.00	0.00200	0.500	1.01
997096-002 Ammonia as N	mg/L	09/07/2011	1.00	0.00200	0.500	1.51

### Method Blank

Parameter	Unit	DF	Result
Ammonia as N	mg/L	1.00	ND

### Duplicate

Lab ID = 997096-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Ammonia as N	mg/L	1.00	1.42	1.51	6.35	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	9.98	10.0	99.8	90 - 110

### Matrix Spike

Lab ID = 997096-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.90	7.51(6.00)	89.8	75 - 125

### Matrix Spike Duplicate

Lab ID = 997096-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	7.04	7.51(6.00)	92.1	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.01	6.00	100.	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.44	6.00	107.	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 28 of 32

Project Number: 424973.01.DM

Printed 9/30/2011

## Metals by EPA 200.8, Dissolved

Batch 091511A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-002 Manganese	ug/L	09/15/2011 16:46	5.00	0.285	1.0	8.7

### Method Blank

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

### Duplicate

Lab ID = 997095-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	9.02	8.97	0.534	0 - 20
Manganese	ug/L	5.00	34.6	35.5	2.68	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.8	50.0	97.5	85 - 110
Manganese	ug/L	1.00	50.4	50.0	101.	85 - 110

### Matrix Spike

Lab ID = 997095-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	245.	259.(250.)	94.3	75 - 125
Manganese	ug/L	5.00	273.	286.(250.)	94.9	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	46.9	50.0	93.8	90 - 110
Manganese	ug/L	1.00	48.7	50.0	97.3	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.8	50.0	99.7	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.2	50.0	96.3	90 - 110

### MRCVS - Primary

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

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.3	50.0	96.6	90 - 110

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040



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 30 of 32

Project Number: 424973.01.DM

Printed 9/30/2011

Serial Dilution

Lab ID = 997095-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	908.	992	8.88	0 - 10



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 31 of 32

Project Number: 424973.01.DM

Printed 9/30/2011

**Metals by 200.7, Dissolved**

Batch 090811A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-002 Iron	ug/L	09/08/2011 12:01	1.00	1.34	20.0	ND

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate

Lab ID = 997096-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	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	5160	5000	103.	85 - 115

Matrix Spike

Lab ID = 997096-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	1700	2000(2000)	85.0	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5100	5000	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5250	5000	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5000	5000	99.9	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2190	2000	109.	80 - 120

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2210	2000	111.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2170	2000	108.	80 - 120





# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 32 of 32

Project Number: 424973.01.DM

Printed 9/30/2011

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2230	2000	111.	80 - 120

## Turbidity by SM 2130 B

Batch: 09TUC11A

9/7/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997096-001 Turbidity	NTU	09/07/2011	1.00	0.0140	0.100	0.100
997096-002 Turbidity	NTU	09/07/2011	1.00	0.0140	0.100	0.180

## Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

## Duplicate

Lab ID = 997096-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.182	0.180	1.10	0 - 20

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.32	8.00	104	90 - 110

## Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.10	8.00	101.	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

*Sean Connolly*  
for Mona Nassimi  
Manager, Analytical Services



E2-Secur

# **Total Dissolved Solids by SM 2540 C**

## **Calculations**

Batch: C9TDS11A

Date Calculated: 9/12/11

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	112.3586	112.3589	112.3588	0.0001	No	0.0002	2.0	25.0	ND	1
997071-2	200	109.3949	109.4104	109.4104	0.0000	No	0.0155	77.5	12.5	77.5	1
997071-4	100	108.6939	108.7217	108.7216	0.0001	No	0.0277	277.0	25.0	277.0	1
997083-16	50	68.1527	68.1900	68.1900	0.0000	No	0.0373	746.0	50.0	746.0	1
997095-1	20	68.2092	68.2657	68.2663	0.0004	No	0.0571	2855.0	125.0	2855.0	1
997095-2	20	50.1288	50.2318	50.2317	0.0001	No	0.1029	5145.0	125.0	5145.0	1
997096-1	20	68.1070	68.2006	68.2002	0.0004	No	0.0932	4660.0	125.0	4660.0	1
997096-2	20	74.7543	74.8461	74.8461	0.0000	No	0.0918	4590.0	125.0	4590.0	1
997098-1	100	103.4180	103.4621	103.4617	0.0004	No	0.0437	437.0	25.0	437.0	1
997098-2	100	100.6890	100.7412	100.7412	0.0000	No	0.0522	522.0	25.0	522.0	1
997099-1	50	111.1909	111.2526	111.2522	0.0004	No	0.0613	1226.0	50.0	1226.0	1
997099-1D	50	111.6555	111.7157	111.7153	0.0004	No	0.0598	1196.0	50.0	1196.0	1
LCS	100	104.8947	104.944	104.9439	0.0001	No	0.0492	492.0	25.0	492.0	1
997099-2	50	112.3125	112.3541	112.3537	0.0004	No	0.0412	824.0	50.0	824.0	1
997099-3	50	69.3493	69.4204	69.4204	0.0000	No	0.0711	1422.0	50.0	1422.0	1
997099-4	50	74.6989	74.7759	74.7759	0.0000	No	0.0770	1540.0	50.0	1540.0	1
997130-1	50	68.2216	68.2719	68.2719	0.0000	No	0.0503	1006.0	50.0	1006.0	1
997130-2	100	73.1389	73.1964	73.1961	0.0003	No	0.0572	572.0	25.0	572.0	1
997130-3	100	65.7133	65.7695	65.7692	0.0003	No	0.0559	559.0	25.0	559.0	1
997130-4	50	73.5047	73.5349	73.5349	0.0000	No	0.0302	604.0	50.0	604.0	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

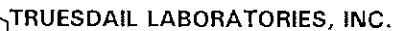
## TDS/EC CHECK

Batch: 09TDS11A

Date Calculated: 9/12/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
997071-2	142	0.55	92.3	0.84
997071-4	503	0.55	326.95	0.85
997083-16	1346	0.55	874.9	0.85
997095-1	5040	0.57	3276	0.87
997095-2	8490	0.61	5518.5	0.93
997096-1	7270	0.64	4725.5	0.99
997096-2	7810	0.59	5076.5	0.90
997098-1	726	0.60	471.9	0.93
997098-2	835	0.63	542.75	0.96
997099-1	1903	0.64	1236.95	0.99
997099-1D	1903	0.63	1236.95	0.97
LCS				
997099-2	1294	0.64	841.1	0.98
997099-3	2060	0.69	1339	1.06
997099-4	2240	0.69	1456	1.06
997130-1	1817	0.55	1181.05	0.85
997130-2	994	0.58	646.1	0.89
997130-3	933	0.60	606.45	0.92
997130-4	1017	0.59	661.05	0.91





2

Analytical Batch:	09ALK11B
Matrix:	Water
Date Calculated:	9/12/11

Ex-Scan

$$T \text{ or } P = \left( \frac{A \times N \times 50000}{mL \text{ sample}} \right)$$

Where: B = mL titrant to first recorded pH  
C = total mL titrant to reach pH 0.3 unit lower  
N = normality of standard acid

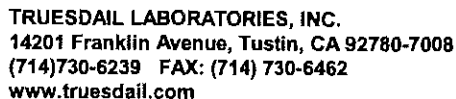
Where: T = Total Alkalinity, mg CaCO<sub>3</sub>/L  
P = Phenolphthalein Alkalinity, mg CaCO<sub>3</sub>/L  
A = mL standard acid used  
N = normality of standard acid

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 Signature

Reviewer Printed Name

Reviewer Signature \_\_\_\_\_



**[IM3Plant-WDR-325]**

997 096

Rec'd 09/06/11  
997096

COC Number

### TURNAROUND TIME

10 Days

DATE 9/06/11

PAGE 1 OF 1

[illegible]

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL <input type="checkbox"/> WARM <input type="checkbox"/> _____ °F
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES <input type="checkbox"/> NO <input type="checkbox"/>
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time		

118

## Hexavalent Chromium

## Method EPA 218.6 and SW 7199 Sample pH Log

[illegible]

# Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
996810(1-2)	<1	<2	8/18/11	M.M	Yes	-
996811(1-3)	↓	↓	↓	↓	↓	-
996812(1-4)	↓	↓	↓	↓	↓	-
996813(1-13)	↓	↓	↓	↓	↓	-
996740	<1	72	8/18/11	ES	No	yes @ 2:00 p.m
996835(1-2)	<1	<2	8/19/11	M.M	Yes	-
996836(1-4)	↓	↓	↓	↓	↓	-
996837	↓	↓	↓	↓	↓	-
996838(1-2)	↓	↓	↓	↓	↓	-
996839(1-5)	↓	↓	↓	↓	↓	-
996799(1-3)	Solid	-	8/19/11	M.M	Yes	TTL C/SLS
996824(1-5)	Solid	-	↓	↓	↓	TTL C
996853(1-1)	<1	<2	8/22/11	M.M	Yes	-
996859	<1	>2	8/22/11	ES	No	Yes @ 1 p.m
996843(1-9)	Solid	-	8/23/11	M.M	Yes	TTL C
996842(1-3)	Liquid	-	8/23/11	↓	↓	-
996950	Solid	81	8/25/11	↓	Yes	TTL C
996951-2	<2	72	8/25/11	M.M	Yes	-
996948-	↓	↓	↓	↓	↓	-
996913(1-16)	↓	<2	↓	↓	↓	-
996934(1-10)	<2	<2	8/26/11	M.M	Yes	-
996941	↓	↓	↓	↓	↓	-
996993(1-4)	Solid	-	08/29/11	M.M	Yes	TTL C
996912	<1	72	8/29/11	ES	No	yes @ 3:00 p.m
996539(1-8)	Solid	-	8/25/11	ES	No	TTL C
997023	<1	<2	08/31/11	M.M	Yes	-
997024(1-5)	↓	↓	↓	↓	↓	-
997022	<1	72	9/2/11	ES	No	yes @ 11:30 am
997095(1-2)	<1	72	9/7/11	ES	No	yes @ 11:00 am
997096(1-2)	<1	72	↓	↓	↓	↓
997097(1-2)	<1	<2	9/7/11	M.M	Yes	-
997099(1-4)	↓	↓	↓	↓	↓	-
997098(1-2)	<1	<2	9/8/11	M.M	Yes	-
997132(1-7)	↓	↓	↓	↓	↓	-
996083(16,23)	<1	72	9/7/11	ES	No	yes @ 10:00 am
997199(1-11)	<1	72	9/13/11	ES	Yes	310A
997223(1-1)	<1	<2	9/15/11	M.M	Yes	310A
997224(1-1)	↓	↓	↓	↓	↓	↓
997225(1-8)	↓	↓	↓	↓	↓	↓
997226(1-3)	↓	↓	↓	↓	↓	↓
997242(1-10)	↓	↓	↓	↓	↓	↓
997243(1-10)	↓	↓	↓	↓	↓	↓
997227	<1	72	9/15/11	ES	No	yes @ 2:00 p.m
997260	<1	<2	↓	M.M	Yes	-
997267(1-5)	↓	↓	9/16/11	M.M	Yes	-
997268(1-9)	↓	↓	↓	↓	↓	-
997269(1-4)	↓	↓	↓	↓	↓	-
997270(1-4)	↓	↓	↓	↓	↓	-
997271	↓	↓	↓	↓	↓	-



TRUESDAIL LABORATORIES, INC.

**ALERT !!**  
**Level III QC**

## Sample Integrity & Analysis Discrepancy Form

Client: CH2M HILL

Lab # 997090

Date Delivered: 9/6/11 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)? 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 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

September 28, 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-326 PROJECT, GROUNDWATER  
MONITORING, TLI NO.: 997227

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-326 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 September 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.


The straight run for the matrix spike for sample SC-700B-WDR-326 for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery was within acceptable limits, the data from the straight run is reported.

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

**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.:** 997227

**Date:** September 28, 2011

**Collected:** September 13, 2011

**Received:** September 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	Sonya Bersudsky

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

**Attention:** Shawn Duffy

**Laboratory No.:** 997227

**Date Received:** September 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
997227-001	SC-700B-WDR-326	E120.1	NONE	9/13/2011	10:00	EC	7130	umhos/cm	2.00
997227-001	SC-700B-WDR-326	E200.8	NONE	9/13/2011	10:00	Chromium	ND	ug/L	1.0
997227-001	SC-700B-WDR-326	E200.8	NONE	9/13/2011	10:00	Manganese	5.0	ug/L	1.0
997227-001	SC-700B-WDR-326	E218.6	LABFLT	9/13/2011	10:00	Chromium, hexavalent	ND	ug/L	0.20
997227-001	SC-700B-WDR-326	SM2130B	NONE	9/13/2011	10:00	Turbidity	0.124	NTU	0.100
997227-001	SC-700B-WDR-326	SM2540C	NONE	9/13/2011	10:00	Total Dissolved Solids	4040	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.

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## 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. 997227

Page 1 of 8

Printed 9/28/2011

Samples Received on 9/13/2011 10:00:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-326	997227-001	09/13/2011 10:00	Water

### Specific Conductivity - EPA 120.1

Batch 09EC11C

9/14/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997227-001 Specific Conductivity	umhos/cm	09/14/2011	1.00	0.0380	2.00	7130

#### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

#### Duplicate

Lab ID = 997227-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7140	7130	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

#### MRCCS - Secondary

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

#### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	981	998	98.3	90 - 110



Client: E2 Consulting Engineers, inc.

Project Name: PG&E Topock Project

Page 2 of 8

Project Number: 424973.01.DM

Printed 9/28/2011

**Chrome VI by EPA 218.6**

Batch 09CrH11C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997227-001 Chromium, Hexavalent	ug/L	09/14/2011 09:14	1.05	0.0260	0.20	ND

Method Blank

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

Duplicate

Lab ID = 997224-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	1.45	1.42	2.02	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.84	5.00	96.8	90 - 110

Matrix Spike

Lab ID = 997223-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.75	1.73(1.06)	102.	90 - 110

Matrix Spike

Lab ID = 997223-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.17	1.14(1.06)	102.	90 - 110

Matrix Spike

Lab ID = 997224-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.87	6.72(5.30)	103.	90 - 110

Matrix Spike

Lab ID = 997224-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.15	1.14(1.06)	101.	90 - 110

Matrix Spike

Lab ID = 997225-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.07	6.96(5.30)	102.	90 - 110

Matrix Spike

Lab ID = 997225-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.12	6.89(5.30)	104.	90 - 110

Matrix Spike

Lab ID = 997225-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.06	6.82(5.30)	104.	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, inc.

Project Name: PG&E Topock Project

Page 3 of 8

Project Number: 424973.01.DM

Printed 9/28/2011

Matrix Spike						Lab ID = 997225-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.04	6.83(5.30)	104.	90 - 110
Matrix Spike						Lab ID = 997225-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	7.67	7.36(5.30)	106.	90 - 110
Matrix Spike						Lab ID = 997225-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.20	1.14(1.06)	105.	90 - 110
Matrix Spike						Lab ID = 997225-007
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.17	1.12(1.06)	105.	90 - 110
Matrix Spike						Lab ID = 997225-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.20	1.12(1.06)	107.	90 - 110
Matrix Spike						Lab ID = 997226-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	20.7	20.6(10.6)	101.	90 - 110
Matrix Spike						Lab ID = 997226-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	9.63	9.45(5.30)	103.	90 - 110
Matrix Spike						Lab ID = 997227-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.21	1.22(1.06)	98.3	90 - 110
Matrix Spike						Lab ID = 997227-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.40	5.52(5.25)	97.9	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.88	5.00	97.5	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.99	10.0	99.9	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 9/28/2011****Metals by EPA 200.8, Total**

Batch 092011B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997227-001 Chromium	ug/L	09/21/2011 02:43	5.00	0.110	1.0	ND
Manganese	ug/L	09/21/2011 02:43	5.00	0.285	1.0	5.0

## Method Blank

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

## Duplicate

Lab ID = 997227-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	4.87	4.99	2.39	0 - 20

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.0	50.0	97.9	85 - 115
Manganese	ug/L	1.00	50.2	50.0	100.	85 - 115

## Matrix Spike

Lab ID = 997227-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	224.	250.(250.)	89.5	75 - 125
Manganese	ug/L	5.00	226.	255.(250.)	88.5	75 - 125

## Matrix Spike Duplicate

Lab ID = 997227-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	224.	250.(250.)	89.8	75 - 125
Manganese	ug/L	5.00	229.	255.(250.)	89.6	75 - 125

## MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.5	50.0	99.0	90 - 110
Manganese	ug/L	1.00	50.5	50.0	101	90 - 110

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	48.8	50.0	97.7	90 - 110

## MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.1	50.0	98.2	90 - 110

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# 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 9/28/2011

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.2	50.0	94.5	80 - 120

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	47.6	50.0	95.1	80 - 120

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	48.9	50.0	97.7	80 - 120

## Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	48.8	50.0	97.6	80 - 120

## Total Dissolved Solids by SM 2540 C

Batch 09TDS11B

9/14/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997227-001 Total Dissolved Solids	mg/L	09/14/2011	1.00	0.400	125	4040

## Method Blank

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

## Duplicate

Lab ID = 997199-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	642	636	0.939	0 - 5

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	494	500.	98.8	90 - 110





# 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 9/28/2011

## Turbidity by SM 2130 B

Batch 09TUC11E

9/14/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997227-001 Turbidity	NTU	09/14/2011	1.00	0.0140	0.100	0.124

### Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

### Duplicate

Lab ID = 997227-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.126	0.124	1.60	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.50	8.00	106.	90 - 110

### Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.17	8.00	102.	90 - 110

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**

*f. Sean Connolly*

Mona Nassimi

Manager, Analytical Services

F2-Scan



### Total Dissolved Solids by SM 2540 C

## Calculations

Batch: 09TDS11B

Date Calculated: 2/15/11

[illegible]

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

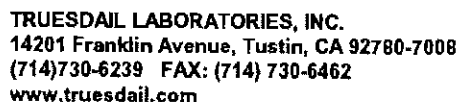
## TDS/EC CHECK

Batch: 09TDS11B

Date Calculated: 9/16/11

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
997194-2	144	0.49	93.6	0.76
997194-4	496	0.56	322.4	0.87
997199-1	1653	0.65	1074.45	0.99
997199-2	1650	0.65	1072.5	1.00
997199-4	3040	0.69	1976	1.06
997199-5	3080	0.70	2002	1.08
997199-6	3010	0.73	1956.5	1.13
997199-7	3390	0.68	2203.5	1.05
997199-8	1740	0.66	1131	1.02
997199-9	1070	0.59	695.5	0.91
997199-9D	1070	0.60	695.5	0.92
LCS				
997199-10	4760	0.75	3094	1.15
997199-11	2250	0.68	1462.5	1.04
997226-1	1710	0.66	1111.5	1.02
997226-2	1640	0.66	1066	1.01
997226-3	1670	0.66	1085.5	1.02
997227	7130	0.57	4634.5	0.87





**[IM3Plant-WDR-326]**

COC Number

### TURNAROUND TIME

**10 Days**

DATE 09/13/11

PAGE 1 OF 1

**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"/> 4.4°C °F
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time		
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		

## Hexavalent Chromium

## Method EPA 218.6 and SW 7199 Sample pH Log

al

# Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
996810(1-2)	<1	<2	8/18/11	M.M	Yes	-
996811(1-3)	↓	↓	↓	↓	↓	-
996812(1-4)	↓	↓	↓	↓	↓	-
996813(1-13)	↓	↓	↓	↓	↓	-
996740	<1	72	8/18/11	ES	No	yes @ 2:00 p.m.
996835(1-2)	<1	<2	8/19/11	M.M	Yes	-
996836(1-4)	↓	↓	↓	↓	↓	-
996837	↓	↓	↓	↓	↓	-
996838(1-2)	↓	↓	↓	↓	↓	-
996839(1-5)	↓	↓	↓	↓	↓	-
996799(1-3)	Solid	-	8/19/11	M.M	Yes	TTLC/SPLS
996824(1-5)	Solid	-	↓	↓	↓	TTLC
996853(1-1)	<1	<2	8/22/11	M.M	Yes	-
996859	<1	>2	8/22/11	KK	No	Yes @ 1 p.m.
996893(1-9)	Solid	-	8/23/11	M.M	Yes	TTLC
996892(1-3)	liquid	-	8/23/11	↓	↓	-
996950	Solid	81	8/25/11	↓	Yes	TTLC
996951-2	<2	22	8/25/11	M.M	Yes	-
996948-	↓	↓	↓	↓	↓	-
996913(1-16)	↓	<2	↓	↓	↓	-
996934(1-10)	<2	<2	8/26/11	M.M	Yes	-
996941	↓	↓	↓	↓	↓	-
996993(1-2)	Solid	-	08/29/11	M.M	Yes	TTLC
996912	<1	72	8/29/11	ES	No	yes @ 3:00 p.m.
996539(1-8)	Solid	-	8/25/11	ES	No	TTLC
997023	<1	<2	08/31/11	M.M	Yes	-
997024(1-5)	↓	↓	↓	↓	↓	-
997022	<1	72	9/2/11	ES	No	yes @ 11:30 am
997095(1-2)	<1	72	9/7/11	ES	No	yes @ 11:00 am
997096(1-2)	<1	22	↓	↓	↓	↓
997097(1-2)	<1	<2	9/7/11	M.M	Yes	-
997099(1-4)	↓	↓	↓	↓	↓	-
997008(1-2)	<1	<2	9/8/11	M.M	Yes	-
997132(1-7)	↓	↓	↓	↓	↓	-
996083(16,23)	<1	72	9/7/11	ES	No	yes @ 10:00 am
997199(1-11)	<1	72	9/17/11	ES	Yes	310A
997223(1)	<1	<2	9/15/11	M.M	Yes	310A
997224(1-1)	↓	↓	↓	↓	↓	↓
997225(1-8)	↓	↓	↓	↓	↓	↓
997226(1-3)	↓	↓	↓	↓	↓	↓
997242(1-10)	↓	↓	↓	↓	↓	↓
997243(1-10)	↓	↓	↓	↓	↓	↓
997227	<1	72	9/15/11	ES	No	yes @ 2:00 p.m.
997260	<1	<2	↓	M.M	Yes	-
997267(1-5)	↓	↓	9/16/11	M.M	Yes	-
997268(1-9)	↓	↓	↓	↓	↓	-
997269(1-4)	↓	↓	↓	↓	↓	-
997270(1-4)	↓	↓	↓	↓	↓	-
997271	↓	↓	↓	↓	↓	-



## Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 997 227

Date Delivered: 09/13/11 Time: 11:00 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) 4.4°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 L.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: Luda

ALERT!!  
Level III QC

# 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 6, 2011

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-WDR-327 PROJECT,  
GROUNDWATER MONITORING, TLI NO.: 997370

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-327 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.

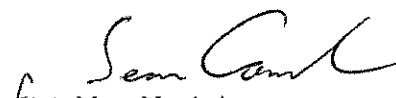
The samples were received and delivered with the chain of custody on September 20, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.


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.

  
for Mona Nassimi  
Manager, Analytical Services

  
Michael Ngo  
Quality Assurance/Quality Control Officer



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**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

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(714) 730-6239 · FAX (714) 730-6462  
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**Laboratory No.:** 997370

**Date:** October 4, 2011

**Collected:** September 20, 2011

**Received:** September 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	Maksim Gorbunov
EPA 218.6	Hexavalent Chromium	Sonya Bersudsky

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

**Laboratory No.:** 997370  
**Date Received:** September 20, 2011  
Revision 1; October 6, 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
997370-001	SC-700B-WDR-327	E120.1	NONE	9/20/2011	13:00	EC	7440	umhos/cm	2.00
997370-001	SC-700B-WDR-327	E200.8	NONE	9/20/2011	13:00	Chromium	ND	ug/L	1.0
997370-001	SC-700B-WDR-327	E200.8	NONE	9/20/2011	13:00	Manganese	2.4	ug/L	1.0
997370-001	SC-700B-WDR-327	E218.6	LABFLT	9/20/2011	13:00	Chromium, hexavalent	ND	ug/L	1.0
997370-001	SC-700B-WDR-327	SM2130B	NONE	9/20/2011	13:00	Turbidity	0.104	NTU	0.100
997370-001	SC-700B-WDR-327	SM2540C	NONE	9/20/2011	13:00	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:

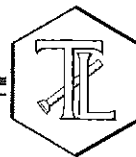
Results below 0.01ppm will have two (2) significant figures.

Result above or equal to 0.01ppm will have three (3) significant figures.

Quality Control data will always have three (3) significant figures.

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## 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. 997370

Page 1 of 6

Printed 10/5/2011

Samples Received on 9/20/2011 9:30:00 PM

Field ID		Lab ID	Collected		Matrix	
SC-700B-WDR-327		997370-001	09/20/2011 13:00		Water	
<b>Specific Conductivity - EPA 120.1</b>		Batch 09EC11E	9/22/2011			
Parameter	Unit	Analyzed	DF	MDL	RL	Result
997370-001 Specific Conductivity	umhos/cm	09/22/2011	1.00	0.0380	2.00	7440
Method Blank						
Parameter	Unit	DF	Result			
Specific Conductivity	umhos	1.00	ND			
Duplicate					Lab ID = 997370-001	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7430	7440	0.134	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	706	706	100.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	992	998	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.

008



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 6

Project Number: 424973.01.DM

Printed 10/6/2011

Revised

## Chrome VI by EPA 218.6

Batch 09CrH11G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997370-001 Chromium, Hexavalent	ug/L	09/21/2011 09:07	5.25	0.110	1.0	ND

### Method Blank

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

### Duplicate

Lab ID = 997370-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	ND	0.0940	0	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.94	5.00	98.9	90 - 110

### Matrix Spike

Lab ID = 997370-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.32	5.25(5.25)	101.	90 - 110

### Matrix Spike

Lab ID = 997370-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.15	1.15(1.06)	99.9	90 - 110

### MRCCS - 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	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

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**TRUESDAIL LABORATORIES, INC.***Report Continued***Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 3 of 6****Project Number: 424973.01.DM****Printed 10/5/2011****Metals by EPA 200.8, Total**

Batch 100411A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997370-001 Chromium	ug/L	10/04/2011 15:44	5.00	0.110	1.0	ND
Manganese	ug/L	10/04/2011 15:44	5.00	0.285	1.0	2.4

**Method Blank**

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

**Duplicate**

Lab ID = 997370-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	2.57	2.44	5.15	0 - 20

**Lab Control Sample**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	53.7	50.0	107.	85 - 115
Manganese	ug/L	1.00	52.2	50.0	104.	85 - 115

**Matrix Spike**

Lab ID = 997370-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	248.	250.(250.)	99.3	75 - 125
Manganese	ug/L	5.00	263.	252.(250.)	104.	75 - 125

**Matrix Spike Duplicate**

Lab ID = 997370-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	254.	250.(250.)	101.	75 - 125
Manganese	ug/L	5.00	246.	252.(250.)	97.6	75 - 125

**MRCCS - Secondary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.2	50.0	102.	90 - 110
Manganese	ug/L	1.00	50.0	50.0	100.0	90 - 110

**MRCVS - Primary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.2	50.0	102.	90 - 110

**MRCVS - Primary**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.9	50.0	99.8	90 - 110

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**TRUESDAIL LABORATORIES, INC.**

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&amp;E Topock Project

Page 5 of 6

Project Number: 424973.01.DM

Printed 10/5/2011

**Total Dissolved Solids by SM 2540 C**

Batch 09TDS11D

9/26/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997370-001 Total Dissolved Solids	mg/L	09/26/2011	1.00	0.400	125	4240

## Method Blank

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

## Duplicate

Lab ID = 997445-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	1250	1270	1.59	0 - 5

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	496	500.	99.2	90 - 110

**Turbidity by SM 2130 B**

Batch 09TUC11G

9/21/2011

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997370-001 Turbidity	NTU	09/21/2011	1.00	0.0140	0.100	0.104

## Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

## Duplicate

Lab ID = 997370-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.105	0.104	0.957	0 - 20

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.22	8.00	103.	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



**TRUESDAIL LABORATORIES, INC.**

*Report Continued*

**Client: E2 Consulting Engineers, Inc.**

**Project Name: PG&E Topock Project**

**Page 6 of 6**

**Project Number: 424973.01.DM**

**Printed 10/5/2011**

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**

*for* 

Mona Nassimi

Manager, Analytical Services



## Calculations

Batch: 09TDS110

Date Calculated: 9/27/11

[illegible]

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

huy  
Reviewer Printed Name

Reviewer Signature

\* COC - Signed *[Signature]*  
WetChem TOS\_0810.xls



TDS/EC CHECK

Date Calculated: 9/27/11

[illegible]



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# CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-327]

COC Number

TURNAROUND TIME

10 Days

DATE 09/20/11

PAGE 1 OF 1

997370

COMPANY	E2											COMMENTS	
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)													
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6 (21&6) Lab Filtered	Total Metals (200.7) Cr, Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)				NUMBER OF CONTAINERS	
SC-700B-WDR-327	09/20/11	1300	Water	x	x	x	x	x				3	Rec'd 09/20/11 997370
												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 <input checked="" type="checkbox"/>	WARM <input type="checkbox"/> 4°C °F
	Rafael	OMI	9-20-11 1530	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:		
	Rafael	T.L.I	9-20-11 1530			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time			
	Rafael	T.L.I	9-20-11 2130			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			
	Shabunina	TLI	9/20/11 2130			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			

035

**Subject:** Topock WDR SDGs 997370 and 997490, hexavalent chromium

**From:** "Trudy.Scott@CH2M.com" <Trudy.Scott@CH2M.com>

**Date:** Thu, 6 Oct 2011 16:12:58 -0400

**To:** Sean Condon <seanc@truesdail.com>

**CC:** "Erlene.Contreras@CH2M.com" <Erlene.Contreras@CH2M.com>, "Shawn.Duffy@CH2M.com" <Shawn.Duffy@CH2M.com>

Sean,

Please report the hexavalent chromium results for the sample and MS in SDGs 997370 and 997490 from the 5x dilution. The original undiluted sample results and MS were both outside the RT window and the hexavalent chromium peaks are non-Gaussian.

Thanks

Trudy Scott  
Chemist 5  
CH2M HILL  
9191 South Jamaica Street  
Englewood, CO 80112  
(720)-286-5728  
trudy.scott@ch2m.com

## Hexavalent Chromium

## Method EPA 218.6 and SW 7199 Sample pH Log

*Ch*

### Turbidity/pH Check

[illegible]



TRUESDAIL LABORATORIES, INC.

## Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 997320

Date Delivered: 09/20/11 Time: 4:30 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 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 Water
16. Comments: \_\_\_\_\_
17. Sample Check-In completed by Truesdail Log-In/Receiving: Luda

ALERT!!  
LEVEL III QC

# 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 6, 2011

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-WDR-328 PROJECT,  
GROUNDWATER MONITORING, TLI NO.: 997490

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-328 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 September 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.

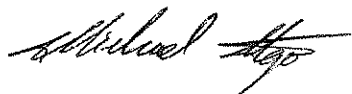
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

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.

  
- Mona Nassimi  
Manager, Analytical Services



Michael Ngo  
Quality Assurance/Quality Control Officer

# TRUESDAIL LABORATORIES, INC.

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**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

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[www.truesdail.com](http://www.truesdail.com)

**Laboratory No.:** 997490

**Date:** October 4, 2011

**Collected:** September 27, 2011

**Received:** September 27, 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



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(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.:** 997490

**Date Received:** September 27, 2011

Revision 1; October 6, 2011

## Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
997490-001	SC-700B-WDR-328	E120.1	NONE	9/27/2011	10:00	EC	7490	umhos/cm	2.00
997490-001	SC-700B-WDR-328	E200.8	NONE	9/27/2011	10:00	Chromium	ND	ug/L	1.0
997490-001	SC-700B-WDR-328	E200.8	NONE	9/27/2011	10:00	Manganese	8.0	ug/L	1.0
997490-001	SC-700B-WDR-328	E218.6	LABFLT	9/27/2011	10:00	Chromium, hexavalent	ND	ug/L	1.0
997490-001	SC-700B-WDR-328	SM2130B	NONE	9/27/2011	10:00	Turbidity	0.109	NTU	0.100
997490-001	SC-700B-WDR-328	SM2540C	NONE	9/27/2011	10:00	Total Dissolved Solids	4380	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.

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## 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. 997490

Page 1 of 6

Printed 10/5/2011

Samples Received on 9/27/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-328	997490-001	09/27/2011 10:00	Water

Specific Conductivity - EPA 120.1		Batch 09EC11G	9/28/2011			
Parameter	Unit	Analyzed	DF	MDL	RL	Result
997490-001 Specific Conductivity	umhos/cm	09/28/2011	1.00	0.0380	2.00	7490

### Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

### Duplicate

Lab ID = 997490-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7500	7490	0.133	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	704	706	99.7	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	975	998	97.7	90 - 110



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 6

Project Number: 424973.01.DM

Printed 10/6/2011

Revised

## Chrome VI by EPA 218.6

Batch 09CrH11I

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997490-001 Chromium, Hexavalent	ug/L	09/28/2011 10:59	5.25	0.136	1.0	ND

### Method Blank

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

### Duplicate

Lab ID = 997461-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	6.17	6.36	2.98	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.69	5.00	93.8	90 - 110

### Matrix Spike

Lab ID = 997461-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	16.1	17.0(10.6)	91.9	90 - 110

### Matrix Spike

Lab ID = 997490-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	4.90	5.42(5.25)	90.1	90 - 110

### Matrix Spike

Lab ID = 997490-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.04	1.06(1.06)	98.1	90 - 110

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.65	5.00	93.0	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



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 6

Project Number: 424973.01.DM

Printed 10/5/2011

## Metals by EPA 200.8, Total

Batch: 100411A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
997490-001 Chromium	ug/L	10/04/2011 16:22	5.00	0.110	1.0	ND
Manganese	ug/L	10/04/2011 16:22	5.00	0.285	1.0	8.0

### Method Blank

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

### Duplicate

Lab ID = 997370-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	2.57	2.44	5.15	0 - 20

### Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	53.7	50.0	107.	85 - 115
Manganese	ug/L	1.00	52.2	50.0	104.	85 - 115

### Matrix Spike

Lab ID = 997370-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	248.	250.(250.)	99.3	75 - 125
Manganese	ug/L	5.00	263.	252.(250.)	104.	75 - 125

### Matrix Spike Duplicate

Lab ID = 997370-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	254.	250.(250.)	101.	75 - 125
Manganese	ug/L	5.00	246.	252.(250.)	97.6	75 - 125

### MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.2	50.0	102.	90 - 110
Manganese	ug/L	1.00	50.0	50.0	100.0	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	51.2	50.0	102.	90 - 110

### MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.9	50.0	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.



# TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 6

Project Number: 424973.01.DM

Printed 10/5/2011

Total Dissolved Solids by SM 2540 C		Batch 09TDS11E	9/29/2011			
Parameter	Unit	Analyzed	DF	MDL	RL	Result
997490-001 Total Dissolved Solids	mg/L	09/29/2011	1.00	0.400	125	4380

## Method Blank

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

## Duplicate

Lab ID = 997490-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4400	4380	0.342	0 - 5

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	496	500.	99.2	90 - 110

Turbidity by SM 2130 B		Batch 09TUC11M	9/28/2011			
Parameter	Unit	Analyzed	DF	MDL	RL	Result
997490-001 Turbidity	NTU	09/28/2011	1.00	0.0140	0.100	0.109

## Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

## Duplicate

Lab ID = 997490-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.110	0.109	0.913	0 - 20

## Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.30	8.00	104.	90 - 110

## Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.15	8.00	102.	90 - 110



**TRUESDAIL LABORATORIES, INC.**

*Report Continued*

**Client: E2 Consulting Engineers, Inc.**

**Project Name: PG&E Topock Project**

**Page 6 of 6**

**Project Number: 424973.01.DM**

**Printed 10/5/2011**

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.**

*for Sean Camacho*

Mona Nassimi

Manager, Analytical Services

## Calculations

Date Calculated: 10/3/11

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

C = mL of sample filtered.

ND = not detected (below the reporting limit)

  
\_\_\_\_\_  
Analyst Signature

Mark  
Reviewer Printed Name

  
\_\_\_\_\_  
Reviewer Signature

~~✓~~ COC - signed ~~✓~~

### TDS/EC CHECK

Date Calculated: 10/3/11

[illegible]





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# CHAIN OF CUSTODY RECORD

(IM3Plant-WDR-328)

COC Number

TURNAROUND TIME

5 Days

DATE 09/27/11

PAGE 1 OF 1

997490

COMPANY	E2											COMMENTS	
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)													
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6 (218.6) Lab Filtered	Total Metals (200.7) Cr, Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)	NUMBER OF CONTAINERS				
SC-700B-WDR-328	09/27/11	10:00	Water	x	x	x	x	x				3	
											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 <input checked="" type="checkbox"/>	WARM <input type="checkbox"/> 3.6°C °F
Signature (Received)	Printed Name	Company/Agency	Date/Time	CUSTODY SEALED YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	SPECIAL REQUIREMENTS:		
Signature (Received)	Printed Name	Company/Agency	Date/Time			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time			
Signature (Received)	Printed Name	Company/Agency	Date/Time			

**Subject:** Topock WDR SDGs 997370 and 997490, hexavalent chromium

**From:** "Trudy.Scott@CH2M.com" <Trudy.Scott@CH2M.com>

**Date:** Thu, 6 Oct 2011 16:12:58 -0400

**To:** Sean Condon <seanc@truesdail.com>

**CC:** "Erlene.Contreras@CH2M.com" <Erlene.Contreras@CH2M.com>, "Shawn.Duffy@CH2M.com" <Shawn.Duffy@CH2M.com>

Sean,

Please report the hexavalent chromium results for the sample and MS in SDGs 997370 and 997490 from the 5x dilution. The original undiluted sample results and MS were both outside the RT window and the hexavalent chromium peaks are non-Gaussian.

Thanks

Trudy Scott  
Chemist 5  
CH2M HILL  
9191 South Jamaica Street  
Englewood, CO 80112  
(720)-286-5728  
trudy.scott@ch2m.com

# 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
09/16/11	997272	9.5	N/A	N/A	N/A	SB
09/16/11	997313-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
09/16/11	997314-1	9.5	N/A	N/A	N/A	SB
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
9/21/11	997370	7.0	5 mL	9.5	8:40 a.m.	al
9/27/11	997460-1	7.0	N/A			
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
9-28-11	997489-1	9.5	N/A	9.5	<del>8:45 AM</del>	AG
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
9/28/11	997490	7.0	5 mL	9.5	8:45 AM	AG
9/27/11	997461	9.5	N/A	9.5	N/A	MG

### Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
997282	<1	<2	9/16/11	M.M	Yes	-
997313(1-2)	↓	↓	↓	↓	↓	-
997314(1-4)	↓	↓	↓	↓	↓	-
997460(1-5)	<1	<2	9/27/11	M.M	Yes	-
997461(1)	↓	↓	↓	↓	↓	-
997496	30 Cipt	-	09/28/11	M.M	yes	STLC/TTLG
997506(1-2)	<1	<1	09/25/11	M.M	YES	-
997507(1-5)	↓	↓	↓	↓	↓	-
997770	<1	72	9/29/11	ES	No	gu w 10:00 a.m.
997490	<1	72	↓	↓	↓	↓
997504	Solid	-	9/29/11	M.M	yes	-
997505(1-2)	↓	-	↓	↓	↓	-
997459	<1	<2	9/29/11	M.G	No	-
997513(124 D.B) 14, 15	<1	<2	10/3/11	K.K	NO	NO -
997518	<1	<2	↓	↓	↓	↓



TRUESDAIL LABORATORIES, INC.

## Sample Integrity & Analysis Discrepancy Form

Client: EL

Lab # 997490

Date Delivered: 09/27/11 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)? 3.6° 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
16. Comments: \_\_\_\_\_
17. Sample Check-In completed by Truesdail Log-In/Receiving: Ludg

## 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-100B	9-6-11	1400	9-6-11	1404	METER#1	9-6-11	1:00	-55.6	RON PHILIPS	7.2

Notes:

SC-700B	9-6-11	1400	9-6-11	1406	METER#1	9-6-11	1:00	-55.6	RON PHILIPS	7.3
---------	--------	------	--------	------	---------	--------	------	-------	-------------	-----

Notes:

SC-700B	9-13-11	1000	9-13-11	1005	METER#1	9-13-11	1:00	-55.9	RON PHILIPS	6.9
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Notes:

SC-700B	9-20-11	1300	9-20-11	1305	METER#1	9-20-11	1:00	-55.7	RON PHILIPS	7.0
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Notes:

SC-700B	9-22-11	1000	9-22-11	1006	METER#1	9-22-11	1:00	-55.2	RON PHILIPS	7.1
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Notes:

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Notes:

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Notes:

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