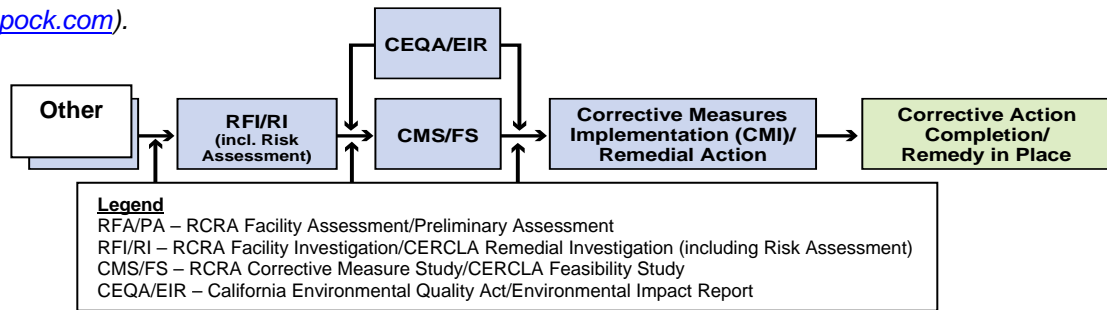


Topock Project Executive Abstract

<p>Document Title:</p> <p>Topock IM-3 First Quarter 2012 Monitoring Report</p> <p>Submitting Agency/ Authored by: U.S. Department of the Interior and Regional Water Quality Control Board</p> <p>Final Document? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Date of Document: April 13, 2012</p> <p>Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other)</p> <p>PG&E</p> <p>Document ID Number:</p> <p>PGE20120413A</p>
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<p>Type of Document:</p> <p><input type="checkbox"/> Draft <input checked="" type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Memo</p> <p><input type="checkbox"/> Other / Explain:</p>	<p>What does this information pertain to?</p> <p><input type="checkbox"/> Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA)</p> <p><input type="checkbox"/> RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment)</p> <p><input type="checkbox"/> Corrective Measures Study (CMS)/Feasibility Study (FS)</p> <p><input type="checkbox"/> Corrective Measures Implementation (CMI)/Remedial Action</p> <p><input type="checkbox"/> California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR)</p> <p><input checked="" type="checkbox"/> Interim Measures</p> <p><input type="checkbox"/> Other / Explain:</p>
<p>What is the consequence of NOT doing this item? What is the consequence of DOING this item?</p> <p>Submittal of this report is a compliance requirement of the ARARs for waste discharge as documented in Attachment A to the Letter Agreement issued July 26, 2011.</p>	<p>Is this a Regulatory Requirement?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, why is the document needed?</p> <p>Other Justification/s:</p> <p><input type="checkbox"/> Permit <input type="checkbox"/> Other / Explain:</p>
<p>Brief Summary of attached document:</p> <p>This report covers the Interim Measures No. 3 (IM-3) groundwater treatment system monitoring activities during the First Quarter 2012 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&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 First Quarter 2012 Monitoring Report is related to the Interim Measure. PG&E is currently operating the IM-3 groundwater treatment system as authorized by the U.S. Department of the Interior (DOI) Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) as documented in Attachment A to the Letter Agreement issued July 26, 2011 from the Colorado River Basin Regional Water Quality Control Board (Regional Water Board) to DOI, and the subsequent Letter of Concurrence issued August 18, 2011 from DOI to the Regional Water Board.</p>	
<p>Other requirements of this information?</p> <p>None.</p>	

Related Reports and Documents:

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





**Pacific Gas and
Electric Company**

Curt Russell
Topock Site Manager
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April 13, 2012

Pamela S. Innis
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Denver, CO 80225-0007

Robert Perdue
Executive Officer
California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
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**Subject: Topock IM-3 First Quarter 2012 Monitoring Report
PG&E Topock Compressor Station, Needles, California
Interim Measure No. 3 Groundwater Treatment System
(Document ID: PGE20120413A)**

Dear Ms. Innis and Mr. Perdue:

Enclosed is the First Quarter 2012 Monitoring Report for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station, Interim Measure No. 3 (IM-3) Groundwater Treatment System.

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

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

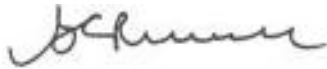
Pamela S. Innis
Robert Perdue
April 13, 2012
Page 2

Since initial operation in July 2005, the IM-3 groundwater treatment system has treated approximately 439,513,663 gallons of water and removed 5,292 pounds of total chromium through March 31, 2012.

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

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

Sincerely,

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

Curt Russell
Topock Site Manager

Enclosures:

Topock IM-3 First Quarter 2012 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

First Quarter 2012 Monitoring Report

Interim Measure No. 3 Groundwater Treatment System

Document ID: PGE20120413A

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

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

on behalf of
Pacific Gas and Electric Company

April 13, 2012

CH2MHILL
155 Grand Avenue, Suite 800
Oakland, CA 94612

**First Quarter 2012 Monitoring Report
for Interim Measure No. 3 Groundwater Treatment System**

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

Prepared for

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

on behalf of

Pacific Gas and Electric Company

April 13, 2012

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

John Porcella, P.E.
Project Engineer



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Appendix

A	First Quarter 2012 Laboratory Analytical Reports
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Acronyms and Abbreviations

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

1.0 Introduction

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

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

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

This report covers monitoring activities related to operation of the IM-3 groundwater treatment system during the First Quarter 2012. The groundwater monitoring results for wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D will be submitted under separate cover, as part of the Compliance Monitoring Program.

2.0 Sampling Station Locations

Table 1 lists the locations of sampling stations. (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 439,513,663 gallons of water and removed 5,292 pounds of total chromium through March 31, 2012.

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 First Quarter 2012, extraction wells TW-3D and PE-1 operated at a target pumping 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 First Quarter 2012. The operational run time for the IM groundwater extraction system (combined or individual pumping), by month, was approximately:

- 99.6 percent during January 2012
- 99.5 percent during February 2012
- 96.9 percent during March 2012

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

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

Activities during the First Quarter 2012 are detailed in Section 4.

4.0 Groundwater Treatment System Flow Rates

The First Quarter 2012 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-PR-10-10-03). The treatment system effluent flow rate was measured by flow meters in the piping into injection wells IW-2 and IW-3 (Figure TP-PR-10-10-11). The RO concentrate flow rate was measured by a flow meter at the piping carrying water from RO concentrate tank T-701 to the truck load-out station (Figure PR-10-04).

The IM-3 facility treated approximately 17,165,892 gallons of extracted groundwater during the First Quarter 2012. The IM-3 facility also treated approximately 3,355 gallons of water generated from the groundwater monitoring program and 17,100 gallons of injection well backwashing/re-development water.

Four containers of solids (sludge) were transported offsite from the IM-3 facility during First Quarter 2012.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 1.4 percent of downtime during First Quarter 2012) are summarized below. The times shown are in Pacific Standard Time (PST) to be consistent with other data collected (e.g., water level data) at the site.

4.1 January 2012

During January 2012, extraction wells TW-3D and PE-1 operated at a target pumping rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2S and TW-2D were not operated during January 2012. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 99.6 percent during the January 2012 reporting period.

The IM-3 facility treated approximately 5,916,268 gallons of extracted groundwater during January 2012. The IM-3 facility did not treat any water generated from the groundwater monitoring program, but did treat approximately 7,200 gallons of injection well backwashing/re-development water. Two containers of solids from the IM-3 facility were transported offsite during January 2012.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 0.4 percent of downtime during January 2012) are summarized below.

- **January 4, 2012 (planned):** The extraction well system was offline from 12:28 p.m. to 12:30 p.m. and 12:34 p.m. to 12:36 p.m. due to critical alarm and leak detection system testing. Extraction system downtime was 4 minutes.

- **January 9, 2012 (planned):** The extraction well system was offline from 2:20 p.m. to 3:46 p.m. due to microfilter flow meter repair. Extraction system downtime was 1 hour and 26 minutes.
- **January 12, 2012 (planned):** The extraction well system was offline from 11:18 a.m. to 12:54 p.m. due to clarifier cleaning. Extraction system downtime was 1 hour and 36 minutes.

4.2 February 2012

During February 2012, extraction wells TW-3D and PE-1 operated at a target pumping rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2S and TW-2D were not operated during February 2012. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 99.5 percent during the February 2012 reporting period.

The IM-3 facility treated approximately 5,481,131 gallons of extracted groundwater during February 2012. The IM-3 facility treated approximately 3,355 gallons of water generated from the groundwater monitoring program and approximately 6,300 gallons of injection well backwashing/re-development water. Two containers of solids from the IM-3 facility were transported offsite during February 2012.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 0.5 percent of downtime during February 2012) are summarized below.

- **February 1, 2012 (planned):** The extraction well system was offline from 10:04 a.m. to 11:22 a.m. due to tank management to control tank levels and critical alarm and leak detection system testing. Extraction system downtime was 1 hour and 18 minutes.
- **February 3, 2012 (unplanned):** The extraction well system was offline from 11:42 p.m. to 11:46 p.m. due to air compressor failure. Extraction system downtime was 4 minutes.
- **February 7, 2012 (planned):** The extraction well system was offline from 1:04 p.m. to 1:30 p.m. due to replacement of a pressure relief valve on the air compressor tank. Extraction system downtime was 26 minutes.
- **February 18, 2012 (planned):** The extraction well system was offline from 8:18 a.m. to 9:56 a.m. due to microfilter performance testing. Extraction system downtime was 1 hour and 38 minutes.
- **February 24, 2012 (unplanned):** The extraction well system was offline from 1:28 p.m. to 1:30 p.m. due to City of Needles power imbalance that shut down the extraction wells. Extraction system downtime was 2 minutes.

4.3 March 2012

During March 2012, extraction wells TW-3D and PE-1 operated at a target pumping rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2S and TW-2D were not operated during March 2012. The operational run time for the IM-3

groundwater extraction system (combined or individual pumping) was 96.9 percent during the March 2012 reporting period.

The IM-3 facility treated approximately 5,768,493 gallons of extracted groundwater during March 2012. The IM-3 facility did not treat any water generated from the groundwater monitoring program, but did treat approximately 3,600 gallons of injection well backwashing/re-development water. No containers of solids from the IM-3 facility were transported offsite during March 2012.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 3.1 percent of downtime during March 2012) are summarized below.

- **March 6, 2012 (unplanned):** The extraction well system was offline from 6:48 p.m. to 7:08 p.m. due to a City of Needles power imbalance that shut down the extraction wells. Extraction system downtime was 20 minutes.
- **March 7, 2012 (planned):** The extraction well system was offline from 2:40 a.m. to 2:46 a.m. due to switching to City of Needles power from generator power. Extraction system downtime was 6 minutes.
- **March 7, 2012 (planned):** The extraction well system was offline from 12:52 p.m. to 12:54 p.m., 1:02 p.m. to 1:04 p.m., 1:14 p.m. to 1:16 p.m., and 1:30 p.m. to 1:32 p.m. due to checking the specific capacity of extraction wells. Extraction system downtime was 8 minutes.
- **March 20, 2012 (unplanned):** The extraction well system was offline from 4:54 p.m. to 6:24 p.m. due to low air flow to the iron oxidation tanks. Extraction system downtime was 1 hour and 30 minutes.
- **March 21, 2012 (planned):** The extraction well system was offline from 11:52 a.m. to 5:12 p.m. due to extraction well PE-1 rehabilitation. Extraction system downtime was 5 hours and 20 minutes.
- **March 21, 2012 (planned):** The extraction well system was offline from 8:14 p.m. to 8:18 p.m. due to testing well PE-01 after maintenance. Extraction system downtime was 4 minutes.
- **March 22, 2012 (planned):** The extraction well system was offline from 6:08 p.m. to 6:24 p.m. and 6:26 p.m. to 7:28 p.m. due to a pressure regulating valve failure in well PE-01 which triggered the high level alarm in the raw water storage tank. Extraction system downtime was 1 hour and 18 minutes.
- **March 24, 2012 (planned):** The extraction well system was offline from 2:46 a.m. to 4:24 a.m. due to a pressure regulating valve failure in well PE-01 which triggered the high level alarm in the raw water storage tank. Extraction system downtime was 1 hour and 38 minutes.
- **March 25, 2012 (planned):** The extraction well system was offline from 11:48 a.m. to 12:50 p.m. due to a pressure regulating valve failure in well PE-01 which triggered the high level alarm in the raw water storage tank. Extraction system downtime was 1 hour and 2 minutes.

- **March 26, 2012 (planned):** The extraction well system was offline from 9:34 a.m. to 10:52 a.m. due to a pressure regulating valve failure in well PE-01 which triggered the high level alarm in the raw water storage tank. Extraction system downtime was 1 hour and 18 minutes.
- **March 27, 2012 (planned):** The extraction well system was offline from 6:08 a.m. to 7:44 a.m. due to a pressure regulating valve failure in well PE-01 which triggered the high level alarm in the raw water storage tank. Extraction system downtime was 1 hour and 36 minutes.
- **March 28, 2012 (planned):** The extraction well system was offline from 6:58 a.m. to 10:12 a.m., 10:14 a.m. to 2:18 p.m., and 2:20 p.m. to 2:38 p.m. due to monthly scheduled plant maintenance. Extraction system downtime was 7 hours and 36 minutes.
- **March 31, 2012 (planned):** The extraction well system was offline from 11:54 a.m. to 1:00 p.m. due to raw water tank management to control levels. Extraction system downtime was 1 hour and 6 minutes.

5.0 Sampling and Analytical Procedures

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

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

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

During the First Quarter 2012, 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

Laboratory reports for samples collected in the First Quarter 2012 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

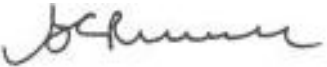
There were no exceedances of effluent limitations during the reporting period.

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: April 13, 2012

Tables

TABLE 1
Sampling Station Descriptions
First Quarter 2012 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

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

Note:

= Sequential sample identification number at each sample station.

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

TABLE 2
 Flow Monitoring Results
First Quarter 2012 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

Parameter	System Influent ^{a,b} (gpm)	System Effluent ^b (gpm)	Reverse Osmosis Concentrate ^b (gpm)
January 2012 Average Monthly Flowrate	132.5	130.8	2.3
February 2012 Average Monthly Flowrate	131.3	130.1	2.1
March 2012 Average Monthly Flowrate	129.2	128.8	1.3

Notes:

gpm: gallons per minute

^a Extraction wells TW-3D and PE-1 were operated during the First Quarter 2012. Extraction wells TW-2D and TW-2S were not operated during the First Quarter 2012.

^b The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during the First Quarter 2012 is approximately 0.58 percent.

TABLE 3
Sample Collection Dates
First Quarter 2012 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

Parameter	Sample Collection Dates	Results
Influent	January 3, 2012	See Table 4
	February 7, 2012	
	March 6, 2012	
Effluent	January 3, 2012	See Table 5
	January 10, 2012	
	January 17, 2012	
	January 24, 2012	
	January 31, 2012	
	February 7, 2012	
	February 14, 2012	
	February 21, 2012	
	February 28, 2012	
	March 6, 2012	
	March 13, 2012	
	March 20, 2012	
	March, 27, 2012	
Reverse Osmosis Concentrate	January 3, 2012	See Table 6
Sludge ^a	January 3, 2012	See Table 7

Notes:

^a Sludge samples analysis is required quarterly by composite.

TABLE 4
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Influent Monitoring Results ^a
First Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Monthly																							
<div>Sample ID</div> <div>Date</div>	<div>Analytes Units ^b MDL</div>	TDS	Turbidity	Specific	Field ^c	Chromium	Hexavalent	Aluminium	Ammonia	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate	Nitrite	Sulfate	Iron	Zinc	
		mg/L	NTU	Conductance	pH	µg/L	Chromium	µg/L	µg/L	(as N)	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	(as N)	(as N)	mg/L	µg/L	µg/L
		0.400	0.0140	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	0.0950	---	0.110	1.20	2.80	0.0012	0.120	0.280	0.200	0.0015	0.120	0.0310	0.110	0.280	0.270	0.0750	0.0270	0.00036	5.70	1.30	3.90	
SC-100B-WDR-342	1/3/2012	4720	0.110	7840	7.1	901	922	ND (50.0)	ND (0.500)	ND (10.0)	3.40	29.0	1.08	ND (5.00)	2.61	ND (10.0)	7.60	19.8	ND (10.0)	3.47	ND (0.0050)	572	ND (20.0)	12.2	
RL		250	0.100	2.00	---	2.00	10.5	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	0.500	0.0050	25.0	20.0	10.0	
SC-100B-WDR-347	2/7/2012	4700	ND (0.100)	7870	7.2	842	831	ND (50.0)	ND (0.500)	ND (10.0)	3.40	26.8	1.08	ND (5.00)	0.964	ND (10.0)	6.60	20.0	ND (10.0)	3.20	ND (0.0050)	635	ND (20.0)	ND (10.0)	
RL		250	0.100	2.00	---	1.00	10.5	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	25.0	20.0	10.0	
SC-100B-WDR-351	3/6/2012	4710	ND (0.100)	7830	7.3	811	805	ND (50.0)	ND (0.500)	ND (10.0)	3.70	25.6	1.03	ND (5.00)	2.48	ND (10.0)	6.40	19.6	ND (10.0)	3.28	ND (0.0050)	560	ND (20.0)	ND (10.0)	
RL		250	0.100	2.00	---	1.00	10.5	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	25.0	20.0	10.0	

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

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

TABLE 5
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Effluent Monitoring Results^a
First Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Effluent Limits ^b	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><div></div></div>	Analytes Units ^c	TDS	Turbidity	Specific Conductance	Field pH ^e	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate (as N)	Nitrite (as N)	Sulfate	Iron	Zinc		
	MDL ^d	mg/L	NTU	µmhos/cm	pH units	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L		
		0.400	0.0140	0.0950	---	0.110	0.0270	2.80	0.0012	0.120	0.280	0.200	0.0015	0.120	0.0310	0.110	0.280	0.270	0.0750	0.0270	0.00036	11.4	1.30	3.90		
Sample ID	Date																									
SC-700B-WDR-342	1/3/2012	4280	ND (0.100)	7190	7.00	ND (1.00)	ND (2.10)	ND (50.0)	ND (0.500)	ND (10.0)	ND (1.00)	18.0	1.01	ND (5.00)	2.21	ND (10.0)	14.3	17.8	ND (10.0)	3.15	ND (0.0050)	502	ND (20.0)	ND (10.0)		
		250	0.100	2.00	---	1.00	2.10	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	0.500	0.0050	50.0	20.0	10.0		
SC-700B-WDR-343	1/10/2012	4150 J	ND (0.100)	7000	7.20	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	17.6	---	---	---	---	---	---	---		
		250	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-344	1/17/2012	4230	ND (0.100)	7110	7.00	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	9.60	---	---	---	---	---	---	---		
		250	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	5.00	---	---	---	---	---	---	---		
SC-700B-WDR-345	1/24/2012	4290	ND (0.100)	7220	7.20	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	19.3	---	---	---	---	---	---	---		
		250	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-346	1/31/2012	4240	ND (0.100)	7190	7.00	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	16.7	---	---	---	---	---	---	---		
		250	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	5.00	---	---	---	---	---	---	---		
SC-700B-WDR-347	2/7/2012	4100	ND (0.100)	6970	7.30	ND (2.00)	ND (1.00)	ND (50.0)	ND (0.500)	ND (10.0)	ND (1.00)	18.6	1.08	ND (5.00)	0.773	ND (10.0)	18.1	16.7	ND (10.0)	2.73	ND (0.0050)	597	ND (20.0)	ND (10.0)		
		250	0.100	2.00	---	2.00	1.00	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	25.0	20.0	10.0		
SC-700B-WDR-348	2/14/2012	4440	ND (0.100)	7460	7.00	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	12.0	---	---	---	---	---	---	---		
		250	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-349	2/21/2012	4360	ND (0.100)	7200	7.00	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	8.90	---	---	---	---	---	---	---		
		250	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	5.00	---	---	---	---	---	---	---		
SC-700B-WDR-350	2/28/2012	4460 J	ND (0.100)	7220	7.30	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	16.9	---	---	---	---	---	---	---		
		250	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-351	3/6/2012	4460	ND (0.100)	7500	7.00	ND (1.00)	ND (1.00)	ND (50.0)	ND (0.500)	ND (10.0)	ND (1.00)	14.6	0.990	ND (5.00)	2.12	ND (10.0)	5.60	17.8	ND (10.0)	3.14	ND (0.0050)	523	ND (20.0)	ND (10.0)		
		250	0.100	2.00	---	1.00	1.00	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	25.0	20.0	10.0		
SC-700B-WDR-352	3/13/2012	4380	ND (0.100)	7540	7.10	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	7.40	---	---	---	---	---	---	---		
		250	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-353	3/20/2012	4340	0.110	7380	7.00	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	1.40	---	---	---	---	---	---	---		
		250	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		
SC-700B-WDR-354	3/27/2012	4480	ND (0.100)	7620	7.00	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	4.30	---	---	---	---	---	---	---		
		250	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---		

TABLE 5
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Effluent Monitoring Results^a
First Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

NOTES:

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

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

TABLE 6
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Reverse Osmosis Concentrate Monitoring Results ^a
First Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Quarterly																						
Sample ID	Date	Analytes	TDS	Specific Conductance	Field ^c	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		Units ^b	mg/L	µmhos/cm	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		MDL	0.400	0.0950	---	0.00022	0.00014	0.00024	0.00028	0.00040	0.00036	0.00094	0.00097	0.00025	0.620	0.00022	0.0040	0.00015	0.0026	0.00068	0.00018	0.00097	0.00037	0.0039
SC-701-WDR-342	1/3/2012		33000	44200	7.5	0.00560	ND (0.0010)	ND (0.0100)	ND (0.0010)	0.133	ND (0.0020)	ND (0.0030)	ND (0.0100)	ND (0.0100)	16.7	ND (0.0100)	0.122	ND (0.0020)	0.0157	0.0256	ND (0.0050)	ND (0.0020)	ND (0.0050)	0.0187
RL			1250	2.00	---	0.0020	0.0010	0.0100	0.0010	0.0100	0.0020	0.0030	0.0100	0.0100	2.00	0.0100	0.0100	0.0020	0.0100	0.0100	0.0050	0.0020	0.0050	0.0100

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

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

TABLE 7
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Sludge Monitoring Results^a
First Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency		Quarterly																		
<div><div></div><div>Analytes</div><div>Units^b</div><div>MDL</div></div>	Date	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		0.0058	0.310	0.0059	0.0078	0.0045	0.00036	0.0055	0.0053	0.00025	0.0310	0.0094	0.0080	0.00015	0.0051	0.0064	0.0111	0.0027	0.0035	0.0078
Sample ID																				
SC-Sludge-WDR-342	1/3/2012	4860	67.1 J	86.4	28.3	61.8	ND (1.09)	12.4	4.96	34.0	16.7	3.02	9.18	0.359	23.1	ND (2.18)	ND (5.46)	ND (2.18)	59.7	70.4
RL		5.46	9.42	10.9	2.18	2.18	1.09	2.18	2.18	1.09	4.67	2.18	2.18	0.218	2.18	2.18	5.46	2.18	2.18	2.18

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

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

TABLE 8

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

Monitoring Information

First Quarter 2012 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-342	Ron Phelps	1/3/2012	1:30:00 PM	TLI	EPA 120.1	SC	1/5/2012	Kim Luck
					TLI	EPA 200.7	AL	1/12/2012	Ethel Suico
					TLI	EPA 200.7	B	1/12/2012	Ethel Suico
					TLI	EPA 200.7	FE	1/12/2012	Ethel Suico
					TLI	EPA 200.7	MO	1/12/2012	Ethel Suico
					TLI	EPA 200.7	NI	1/12/2012	Ethel Suico
					TLI	EPA 200.7	ZN	1/16/2012	Ethel Suico
					TLI	EPA 200.8	AS	1/16/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	1/8/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	1/6/2012	Maksim Gorbunov/George Wahba
					TLI	EPA 300.0	FL	1/4/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	1/4/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	1/4/2012	Giawad Ghenniwa
					FIELD	HACH	PH	1/3/2012	Ron Phelps
					TLI	SM2130B	TRB	1/5/2012	Kim Luck
					TLI	SM2540C	TDS	1/3/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	1/5/2012	Maria Mangarova
					TLI	SM4500NO2B	NO2N	1/4/2012	Jenny Tankunakorn
SC-100B	SC-100B-WDR-347	Ron Phelps	2/7/2012	12:30:00 PM	TLI	EPA 120.1	SC	2/9/2012	Gautam Savani
					TLI	EPA 200.7	AL	2/27/2012	Ethel Suico
					TLI	EPA 200.7	B	2/27/2012	Ethel Suico
					TLI	EPA 200.7	FE	2/27/2012	Ethel Suico
					TLI	EPA 200.7	FETD	2/27/2012	Ethel Suico
					TLI	EPA 200.7	NI	2/27/2012	Ethel Suico
					TLI	EPA 200.7	ZN	2/27/2012	Ethel Suico
					TLI	EPA 200.8	AS	2/17/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	BA	2/16/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	CR	3/2/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	CU	2/16/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	MN	2/16/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	MND	2/17/2012	Katia Kiarashpoor/Bita Emami

TABLE 8

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

Monitoring Information

First Quarter 2012 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-347	Ron Phelps	2/7/2012	12:30:00 PM	TLI	EPA 200.8	MO	2/16/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	PB	2/16/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 200.8	SB	2/16/2012	Katia Kiarashpoor/Bita Emami
					TLI	EPA 218.6	CR6	2/22/2012	George Wahba/Maksim Gorbunov
					TLI	EPA 300.0	FL	2/9/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	2/8/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	2/9/2012	Giawad Ghenniwa
					FIELD	HACH	PH	2/7/2012	Ron Phelps
					TLI	SM 2320B	ALKB	2/10/2012	Kim Luck
					TLI	SM 2320B	ALKC	2/10/2012	Kim Luck
					TLI	SM2130B	TRB	2/8/2012	Gautam Savani
					TLI	SM2540C	TDS	2/8/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	2/10/2012	Maria Mangarova
					TLI	SM4500NO2B	NO2N	2/9/2012	Jenny Tankunakorn
SC-100B	SC-100B-WDR-351	C.Knight	3/6/2012	1:02:00 PM	TLI	EPA 120.1	SC	3/9/2012	Gautam Savani
					TLI	EPA 200.7	AL	3/19/2012	Ethel Suico
					TLI	EPA 200.7	B	3/19/2012	Ethel Suico
					TLI	EPA 200.7	FE	3/19/2012	Ethel Suico
					TLI	EPA 200.7	FETD	3/19/2012	Ethel Suico
					TLI	EPA 200.7	MO	3/19/2012	Ethel Suico
					TLI	EPA 200.7	ZN	3/19/2012	Ethel Suico
					TLI	EPA 200.8	AS	3/15/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	3/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	3/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	3/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	3/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MND	3/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	3/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	3/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	3/13/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	3/7/2012	George Wahba
					TLI	EPA 300.0	FL	3/7/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	3/7/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	3/7/2012	Giawad Ghenniwa
					FIELD	HACH	PH	3/6/2012	C.Knight
					TLI	SM 2320B	ALKB	3/13/2012	Bita Emami

TABLE 8

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

Monitoring Information

First Quarter 2012 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-351	C.Knight	3/6/2012	1:02:00 PM	TLI	SM 2320B	ALKC	3/13/2012	Bitu Emami
					TLI	SM2130B	TRB	3/7/2012	Gautam Savani
					TLI	SM2540C	TDS	3/7/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	3/7/2012	Bitu Emami
					TLI	SM4500NO2B	NO2N	3/7/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-342	Ron Phelps	1/3/2012	1:30:00 PM	TLI	EPA 120.1	SC	1/5/2012	Kim Luck
					TLI	EPA 200.7	AL	1/12/2012	Ethel Suico
					TLI	EPA 200.7	B	1/12/2012	Ethel Suico
					TLI	EPA 200.7	FE	1/12/2012	Ethel Suico
					TLI	EPA 200.7	MO	1/12/2012	Ethel Suico
					TLI	EPA 200.7	NI	1/12/2012	Ethel Suico
					TLI	EPA 200.7	ZN	1/16/2012	Ethel Suico
					TLI	EPA 200.8	AS	1/16/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	1/8/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	1/27/2012	Maksim Gorbunov/George Wahba
					TLI	EPA 300.0	FL	1/4/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	1/4/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	1/4/2012	Giawad Ghenniwa
					FIELD	HACH	PH	1/3/2012	Ron Phelps
					TLI	SM2130B	TRB	1/5/2012	Kim Luck
					TLI	SM2540C	TDS	1/3/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	1/5/2012	Maria Mangarova
					TLI	SM4500NO2B	NO2N	1/4/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-343	C.Knight	1/10/2012	2:37:00 PM	TLI	EPA 120.1	SC	1/16/2012	Kim Luck
					TLI	EPA 200.8	CR	1/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	1/18/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	1/12/2012	Maksim Gorbunov/George Wahba
					FIELD	HACH	PH	1/10/2012	C.Knight
					TLI	SM2130B	TRB	1/12/2012	Kim Luck
					TLI	SM2540C	TDS	1/27/2012	Jenny Tankunakorn

TABLE 8

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

Monitoring Information

First Quarter 2012 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-344	Ron Phelps	1/17/2012	11:00:00 AM	TLI	EPA 120.1	SC	1/25/2012	Gautam Savani
					TLI	EPA 200.8	CR	2/2/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	2/2/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	1/19/2012	Maksim Gorbunov/George Wahbe
					FIELD	HACH	PH	1/17/2012	Ron Phelps
					TLI	SM2130B	TRB	1/18/2012	Kim Luck
					TLI	SM2540C	TDS	1/23/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-345	Ron Phelps	1/24/2012	11:15:00 AM	TLI	EPA 120.1	SC	1/25/2012	Gautam Savani
					TLI	EPA 200.8	CR	1/28/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	1/30/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	1/27/2012	Maksim Gorbunov/George Wahbe
					FIELD	HACH	PH	1/24/2012	Ron Phelps
					TLI	SM2130B	TRB	1/25/2012	Gautam Savani
					TLI	SM2540C	TDS	1/27/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-346	Ron Phelps	1/31/2012	2:00:00 PM	TLI	EPA 120.1	SC	2/1/2012	Gautam Savani
					TLI	EPA 200.8	CR	2/7/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	2/7/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	2/1/2012	Maksim Gorbunov/George Wahbe
					FIELD	HACH	PH	1/31/2012	Ron Phelps
					TLI	SM2130B	TRB	2/1/2012	Gautam Savani
					TLI	SM2540C	TDS	2/1/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-347	Ron Phelps	2/7/2012	12:45:00 PM	TLI	EPA 120.1	SC	2/9/2012	Gautam Savani
					TLI	EPA 200.7	AL	2/27/2012	Ethel Suico
					TLI	EPA 200.7	B	2/27/2012	Ethel Suico
					TLI	EPA 200.7	FE	2/27/2012	Ethel Suico
					TLI	EPA 200.7	NI	2/27/2012	Ethel Suico
					TLI	EPA 200.7	ZN	2/27/2012	Ethel Suico
					TLI	EPA 200.8	AS	2/17/2012	Katia Kiarashpoor/Bitia Emami
					TLI	EPA 200.8	BA	2/16/2012	Katia Kiarashpoor/Bitia Emami
					TLI	EPA 200.8	CR	3/2/2012	Katia Kiarashpoor/Bitia Emami
					TLI	EPA 200.8	CU	2/16/2012	Katia Kiarashpoor/Bitia Emami
					TLI	EPA 200.8	MN	2/16/2012	Katia Kiarashpoor/Bitia Emami
					TLI	EPA 200.8	MO	2/16/2012	Katia Kiarashpoor/Bitia Emami
					TLI	EPA 200.8	PB	2/16/2012	Katia Kiarashpoor/Bitia Emami
					TLI	EPA 200.8	SB	2/16/2012	Katia Kiarashpoor/Bitia Emami

TABLE 8

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

Monitoring Information

First Quarter 2012 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-347	Ron Phelps	2/7/2012	12:45:00 PM	TLI	EPA 218.6	CR6	2/22/2012	George Wahba/Maksim Gorbunov
					TLI	EPA 300.0	FL	2/9/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	2/8/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	2/9/2012	Giawad Ghenniwa
					FIELD	HACH	PH	2/7/2012	Ron Phelps
					TLI	SM2130B	TRB	2/8/2012	Gautam Savani
					TLI	SM2540C	TDS	2/8/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	2/10/2012	Maria Mangarova
					TLI	SM4500NO2B	NO2N	2/9/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-348	Ron Phelps	2/14/2012	1:00:00 PM	TLI	EPA 120.1	SC	2/17/2012	Gautam Savani
					TLI	EPA 200.8	CR	2/24/2012	Bitia Emami
					TLI	EPA 200.8	MN	2/24/2012	Bitia Emami
					TLI	EPA 218.6	CR6	2/15/2012	Maksim Gorbunov/George Wahba
					FIELD	HACH	PH	2/14/2012	Ron Phelps
					TLI	SM2130B	TRB	2/15/2012	Gautam Savani
					TLI	SM2540C	TDS	2/17/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-349	C.Knight	2/21/2012	1:40:00 PM	TLI	EPA 120.1	SC	2/23/2012	Gautam Savani
					TLI	EPA 200.8	CR	2/28/2012	Bitia Emami
					TLI	EPA 200.8	MN	2/28/2012	Bitia Emami
					TLI	EPA 218.6	CR6	2/22/2012	Maksim Gorbunov/George Wahba
					FIELD	HACH	PH	2/21/2012	C.Knight
					TLI	SM2130B	TRB	2/22/2012	Gautam Savani
					TLI	SM2540C	TDS	2/22/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-350	C.Knight	2/28/2012	2:39:00 PM	TLI	EPA 120.1	SC	3/2/2012	Gautam Savani
					TLI	EPA 200.8	CR	3/1/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	3/1/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	3/2/2012	Maksim Gorbunov/George Wahba
					FIELD	HACH	PH	2/28/2012	C.Knight
					TLI	SM2130B	TRB	2/29/2012	Gautam Savani
					TLI	SM2540C	TDS	3/16/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-351	C.Knight	3/6/2012	1:31:00 PM	TLI	EPA 120.1	SC	3/9/2012	Gautam Savani
					TLI	EPA 200.7	AL	3/19/2012	Ethel Suico
					TLI	EPA 200.7	B	3/19/2012	Ethel Suico
					TLI	EPA 200.7	FE	3/19/2012	Ethel Suico
					TLI	EPA 200.7	MO	3/19/2012	Ethel Suico

TABLE 8

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

Monitoring Information

First Quarter 2012 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-351	C.Knight	3/6/2012	1:31:00 PM	TLI	EPA 200.7	ZN	3/19/2012	Ethel Suico
					TLI	EPA 200.8	AS	3/15/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	3/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	3/15/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	3/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	3/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	3/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	3/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	3/13/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	3/7/2012	George Wahba
					TLI	EPA 300.0	FL	3/7/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	3/7/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	3/7/2012	Giawad Ghenniwa
					FIELD	HACH	PH	3/6/2012	C.Knight
					TLI	SM2130B	TRB	3/7/2012	Gautam Savani
					TLI	SM2540C	TDS	3/7/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	3/7/2012	Bitu Emami
					TLI	SM4500NO2B	NO2N	3/7/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-352	Ron Phelps	3/13/2012	1:00:00 PM	TLI	EPA 120.1	SC	3/15/2012	Gautam Savani
					TLI	EPA 200.8	CR	3/15/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	3/15/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	3/16/2012	Maksim Gorbunov/George Wahba/Melissa Scharf
					FIELD	HACH	PH	3/13/2012	Ron Phelps
					TLI	SM2130B	TRB	3/14/2012	Gautam Savani
					TLI	SM2540C	TDS	3/14/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-353	George Gloria	3/20/2012	11:30:00 AM	TLI	EPA 120.1	SC	3/21/2012	Gautam Savani
					TLI	EPA 200.8	CR	3/27/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	3/27/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	3/21/2012	George Wahba/Melissa Scharfe
					FIELD	HACH	PH	3/20/2012	George Gloria
					TLI	SM2130B	TRB	3/21/2012	Gautam Savani
					TLI	SM2540C	TDS	3/21/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-354	Ron Phelps	3/27/2012	10:00:00 AM	TLI	EPA 120.1	SC	3/28/2012	Gautam Savani
					TLI	EPA 200.8	CR	4/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	4/5/2012	Katia Kiarashpoor

TABLE 8

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

Monitoring Information

First Quarter 2012 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-354	Ron Phelps	3/27/2012	10:00:00 AM	TLI	EPA 218.6	CR6	3/28/2012	Melissa Scharfe/Maksim Gorbunov
					FIELD	HACH	PH	3/22/2012	Ron Phelps
					TLI	SM2130B	TRB	3/28/2012	Gautam Savani
					TLI	SM2540C	TDS	3/29/2012	Jenny Tankunakorn
SC-701	SC-701-WDR-342	Ron Phelps	1/3/2012	1:30:00 PM	TLI	EPA 120.1	SC	1/5/2012	Kim Luck
					TLI	EPA 200.7	MO	1/12/2012	Ethel Suico
					TLI	EPA 200.7	NI	1/12/2012	Ethel Suico
					TLI	EPA 200.7	ZN	1/16/2012	Ethel Suico
					TLI	EPA 200.8	AG	1/16/2012	Katia Kiarashpoor
					TLI	EPA 200.8	AS	1/16/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BE	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CD	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CO	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	HG	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SE	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	TL	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	V	1/16/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	1/27/2012	Maksim Gorbunov/George Wahba
					TLI	EPA 300.0	FL	1/4/2012	Giawad Ghenniwa
Phase Separator	SC-Sludge-WDR-342	Ron Phelps	1/3/2012	1:00:00 PM	FIELD	HACH	PH	1/3/2012	Ron Phelps
					TLI	SM2540C	TDS	1/3/2012	Jenny Tankunakorn
					TLI	EPA 300.0	FL	1/6/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	1/6/2012	Giawad Ghenniwa
					TLI	EPA 6010B	AG	1/20/2012	Ethel Suico
					TLI	EPA 6010B	AS	1/12/2012	Ethel Suico
					TLI	EPA 6010B	BA	1/12/2012	Ethel Suico
					TLI	EPA 6010B	CD	1/12/2012	Ethel Suico
					TLI	EPA 6010B	CO	1/12/2012	Ethel Suico
					TLI	EPA 6010B	CR	1/20/2012	Ethel Suico
					TLI	EPA 6010B	MN	1/12/2012	Ethel Suico

TABLE 8

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

Monitoring Information

First Quarter 2012 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-342	Ron Phelps	1/3/2012	1:00:00 PM	TLI	EPA 6010B	MO	1/12/2012	Ethel Suico
					TLI	EPA 6010B	NI	1/12/2012	Ethel Suico
					TLI	EPA 6010B	PB	1/12/2012	Ethel Suico
					TLI	EPA 6010B	SB	1/12/2012	Ethel Suico
					TLI	EPA 6010B	SE	1/12/2012	Ethel Suico
					TLI	EPA 6010B	TL	1/12/2012	Ethel Suico
					TLI	EPA 6010B	V	1/12/2012	Ethel Suico
					TLI	EPA 6010B	ZN	1/12/2012	Ethel Suico
					TLI	SM2540B	MOIST	1/3/2012	Maria Mangarova
					TLI	SW 6020A	BE	1/13/2012	Katia Kiarashpoor
					TLI	SW 6020A	CU	1/20/2012	Katia Kiarashpoor
					TLI	SW 6020A	HG	1/13/2012	Katia Kiarashpoor
					TLI	SW 7199	CR6	2/6/2012	George Wahba

TABLE 8

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

Monitoring Information

*First Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System***NOTES:**

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

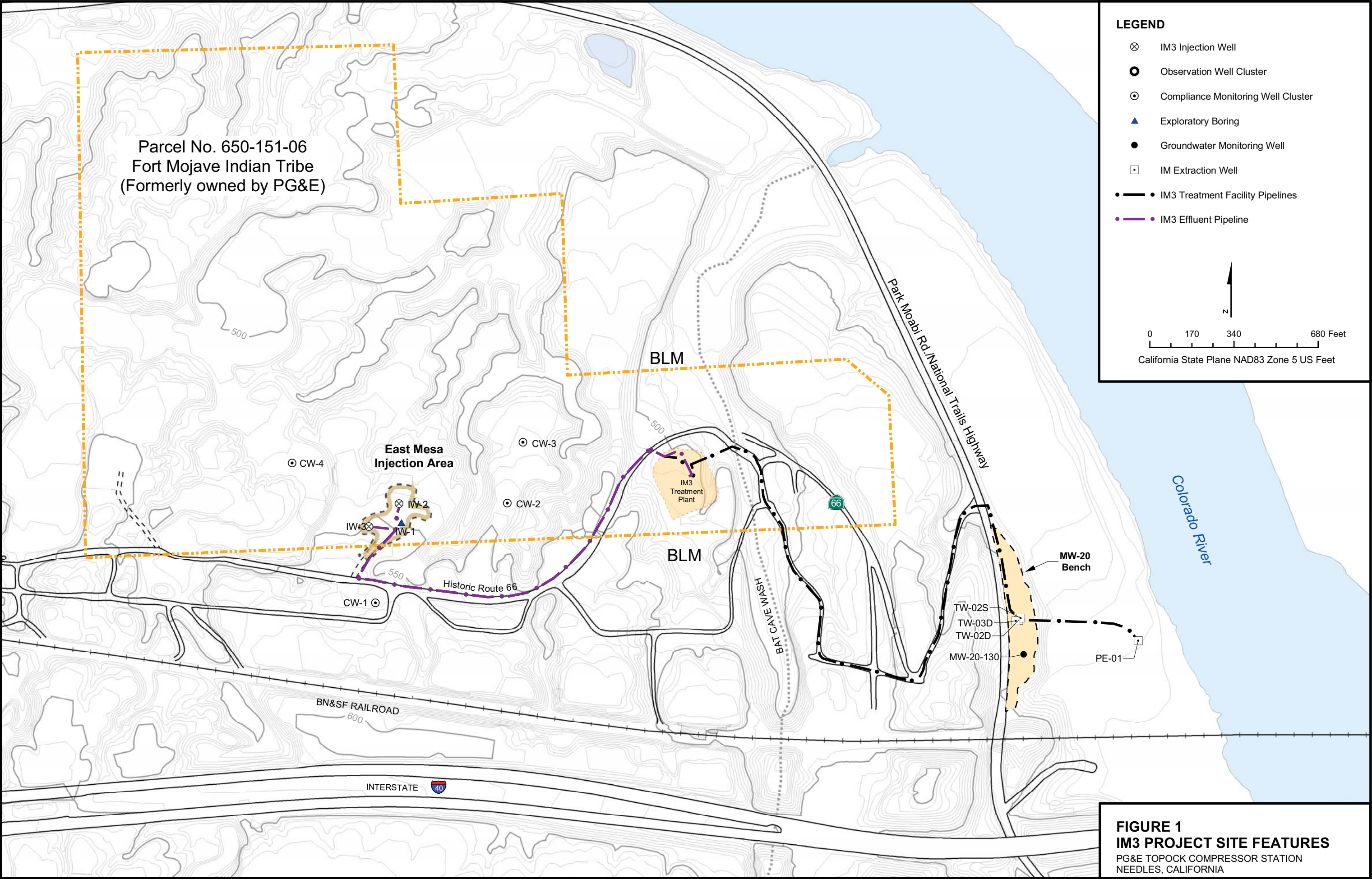
SC-100B = Sampling location for all influent samples is tap on pipe from extraction wells into tank T-100 (see attached P&ID TP-PR-10-10-04).

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

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

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

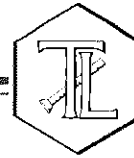
Figures



Appendix A
First Quarter 2012 Laboratory Analytical Reports

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

February 16, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-342 PROJECT, SLUDGE
MONITORING,
TLI NO.: 999361

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-342 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 January 3, 2012, 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 sample for Hexavalent Chromium by SW 7199 was initially extracted within the 28-day holding time. Due to instrument problems, the sample was not analyzed within seven days and the extract expired. The sample was re-extracted on February 2, 2012, 2 days past the 28-day holding time, and analyzed on February 7, 2012. All other QA/QC was within acceptable limits. Mr. Shawn Duffy was notified.

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 - [Signature]
Mona Nassimi
Manager, Analytical Services

[Signature]

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

Attention: Shawn Duffy

Sample: One (1) Soil Sample

Project Name: PG&E Topock Project

Project No.: 408401.01.DM

Laboratory No.: 999361

Date: February 16, 2012

Collected: January 3, 2012

Received: January 3, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 300.0	Anions	Giawad Ghenniwa
SM 2540 B	% Moisture	Maria Mangarova
SW 6010B	Metals by ICP	Ethel Suico
SW 6020	Metals by ICP/MS	Katia Kiarashpoor
SW 7199	Hexavalent Chromium	George Wahba



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

Attention: Shawn Duffy

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

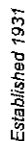
Laboratory No.: 999361
Date Received: January 3, 2012

Analytical Results Summary

<u>Lab I.D.</u>	<u>Sample I.D.</u>	<u>Sample Time</u>	<u>SW 7199</u> Hexavalent Chromium mg/kg	<u>EPA 300.0</u> Fluoride mg/kg	<u>EPA 300.0</u> Nitrate as N mg/kg	<u>SM 2540 B</u> % Moisture %
999361	SC-Sludge-WDR-342	13:00	67.1	16.7	ND	57.2

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.



Laboratory No.: 999361
Date Received: January 3, 2012

Analytical Results Summary

METALS ANALYSIS: Total Metal Analyses as Requested

NOTES:

ND: Not detected, or below limit of detection

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14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
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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

Prep. Batch: 02CrH12F

Laboratory No.: 999361

Date: February 16, 2012

Collected: January 3, 2012

Received: January 3, 2012

Prep/ Analyzed: February 6, 2012

Analytical Batch: 02CrH12F

Investigation:

Hexavalent Chromium by IC Using Method SW 7199

Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
999361	SC-Sludge-WDR-342	13:00	11:05	mg/kg	10.0	9.42	67.1

QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	999361	67.1	64.6	3.82%	≤ 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	999361	67.1	10.0	37.5	375.41	411	443	91.7%	75-125%	Yes
IMS	999361	67.1	100	227	22696	20300	22763	89.1%	75-125%	Yes
PDMS	999361	67.1	25.0	15.1	377	464	444	105%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
Blank	ND	<0.400	---	<0.400	Yes
MRCCS	2.00	2.00	100%	90% - 110%	Yes
MRCVS#1	2.11	2.00	105%	90% - 110%	Yes
MRCVS#2	1.97	2.00	98.5%	90% - 110%	Yes
LLCS	0.0104	0.0100	104%	70% - 130%	Yes
LCS	2.00	2.00	100%	80% - 120%	Yes

ND: Below the reporting limit (Not Detected).

OF: Dilution Factor.

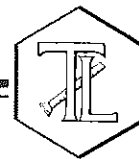
Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


Mona Nassimi, Manager
Analytical Services

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

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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
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Laboratory No.: 999361

Date: February 16, 2012

Collected: January 3, 2012

Received: January 3, 2012

Prep/ Analyzed: January 3, 2012

Analytical Batch: 01SOLID12A

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>
999361	SC-Sludge-WDR-342	13:00	%	57.2

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	999361	57.2	56.6	0.99%	≤ 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.

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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.: 999361

Date: February 16, 2012

Collected: January 3, 2012

Received: January 3, 2012

Prep/ Analyzed: January 6, 2012

Analytical Batch: 01AN12D

Investigation: Fluoride by Ion Chromatography using EPA 300.0

Analytical Results Fluoride

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
999361	SC-Sludge-WDR-342	13:00	13:51	mg/kg	1.00	4.67	16.7

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	999414	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	999414	0.00	1.00	2.00	2.00	1.76	2.00	88.2%	85-115%	Yes
MSD	999414	0.00	1.00	2.00	2.00	1.76	2.00	88.1%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
Blank	ND	<0.500	---	<0.500	Yes
MRCSS	3.87	4.00	96.7%	90% - 110%	Yes
MRCVS#1	2.91	3.00	96.9%	90% - 110%	Yes
MRCVS#2	2.98	3.00	99.3%	90% - 110%	Yes
LCS	3.85	4.00	96.2%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for 
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

Sample: One (1) Soil Sample

Project Name: PG&E Topock Project

Project No.: 408401.01.DM

P.O. No.: 408401.01.DM

Laboratory No.: 999361

Date: February 16, 2012

Collected: January 3, 2012

Received: January 3, 2012

Prep/ Analyzed: January 6, 2012

Analytical Batch: 01AN12D

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
999361	SC-Sludge-WDR-342	13:00	13:51	mg/kg	1.00	9.35	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	999414	ND	ND	0.00%	≤ 20%	Yes

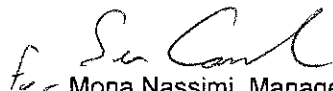
QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	999414	0.00	1.00	2.00	2.00	1.97	2.00	98.4%	85-115%	Yes
MSD	999414	0.00	1.00	2.00	2.00	1.97	2.00	98.5%	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	3.89	4.00	97.2%	90% - 110%	Yes
MRCVS#1	2.88	3.00	96.1%	90% - 110%	Yes
MRCVS#2	2.93	3.00	97.6%	90% - 110%	Yes
LCS	3.89	4.00	97.2%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


for 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.: 999361

Reported: February 16, 2012

Collected: January 3, 2012

Received: January 3, 2012

Analyzed: See Below

Analytical Results

SAMPLE ID: SC-Sludge-WDR-342		Time Collected: 13:00		LAB ID: 999361				
Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Antimony	SW 6010B	86.4	2.00	mg/kg	10.9	011212B	01/12/12	18:20
Arsenic	SW 6010B	28.3	2.00	mg/kg	2.18	011212B	01/12/12	18:20
Barium	SW 6010B	61.8	2.00	mg/kg	2.18	011212B	01/12/12	18:20
Beryllium	SW 6020A	ND	10.0	mg/kg	1.09	011212B	01/13/12	03:03
Cadmium	SW 6010B	12.4	2.00	mg/kg	2.18	011212B	01/12/12	18:20
Chromium	SW 6010B	4860	5.00	mg/kg	5.46	012012A	01/20/12	11:32
Cobalt	SW 6010B	4.96	2.00	mg/kg	2.18	011212B	01/12/12	18:20
Copper	SW 6020A	34.0	10.0	mg/kg	1.09	011912C	01/20/12	08:17
Lead	SW 6010B	3.02	2.00	mg/kg	2.18	011212B	01/12/12	18:20
Manganese	SW 6010B	407	2.00	mg/kg	2.18	011212B	01/12/12	18:20
Mercury	SW 6020A	0.359	10.0	mg/kg	0.218	011212B	01/13/12	03:03
Molybdenum	SW 6010B	9.18	2.00	mg/kg	2.18	011212B	01/12/12	18:20
Nickel	SW 6010B	23.1	2.00	mg/kg	2.18	011212B	01/12/12	18:20
Selenium	SW 6010B	ND	2.00	mg/kg	2.18	011212B	01/12/12	18:20
Silver	SW 6010B	ND	5.00	mg/kg	5.46	012012A	01/20/12	11:32
Thallium	SW 6010B	ND	2.00	mg/kg	2.18	011212B	01/12/12	18:20
Vanadium	SW 6010B	59.7	2.00	mg/kg	2.18	011212B	01/12/12	18:20
Zinc	SW 6010B	70.4	2.00	mg/kg	2.18	011212B	01/12/12	18:20


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.

for 
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

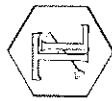
P.O. No.: 408401.01.DM

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Laboratory No.: 999361
Reported: February 16, 2012
Collected: January 3, 2012
Received: January 3, 2012

Quality Control/Quality Assurance Report

DIGESTED BLANK							MRCCS			MRCVS			
Parameter	Method	Batch	Units	Blank	RL	Observed Value	TRUE Value	% Rec	Control Limits	Observed Value	TRUE Value	% Rec	Control Limits %
Antimony	SW 6010B	011212B	mg/kg	ND	2.50	5.00	5.00	100%	90-110%	4.59	5.00	91.9%	90-110%
Arsenic	SW 6010B	011212B	mg/kg	ND	0.500	4.84	5.00	96.7%	90-110%	4.67	5.00	93.3%	90-110%
Barium	SW 6010B	011212B	mg/kg	ND	1.00	4.71	5.00	94.1%	90-110%	4.51	5.00	90.2%	90-110%
Beryllium	SW 6020A	011212B	mg/kg	ND	1.00	0.00998	0.0100	99.8%	90-110%	0.00925	0.0100	92.5%	90-110%
Cadmium	SW 6010B	011212B	mg/kg	ND	0.500	5.12	5.00	102%	90-110%	4.77	5.00	95.4%	90-110%
Chromium	SW 6010B	012012A	mg/kg	ND	1.00	5.16	5.00	103%	90-110%	4.93	5.00	98.7%	90-110%
Cobalt	SW 6010B	011212B	mg/kg	ND	1.00	5.06	5.00	101%	90-110%	4.66	5.00	93.1%	90-110%
Copper	SW 6020A	011912C	mg/kg	ND	1.00	0.0105	0.0100	105%	90-110%	0.00971	0.0100	97.1%	90-110%
Lead	SW 6010B	011212B	mg/kg	ND	1.00	4.60	5.00	92.0%	90-110%	4.97	5.00	99.4%	90-110%
Manganese	SW 6010B	011212B	mg/kg	ND	1.00	4.76	5.00	95.3%	90-110%	4.57	5.00	91.4%	90-110%
Mercury	SW 6020A	011212B	mg/kg	ND	0.100	0.00201	0.00200	101%	90-110%	0.00198	0.00200	99.2%	90-110%
Molybdenum	SW 6010B	011212B	mg/kg	ND	1.00	4.89	5.00	97.8%	90-110%	4.65	5.00	92.9%	90-110%
Nickel	SW 6010B	011212B	mg/kg	ND	1.00	4.99	5.00	99.8%	90-110%	4.75	5.00	94.9%	90-110%
Selenium	SW 6010B	011212B	mg/kg	ND	1.00	4.98	5.00	99.6%	90-110%	4.75	5.00	94.9%	90-110%
Silver	SW 6010B	012012A	mg/kg	ND	1.00	5.16	5.00	103%	90-110%	4.99	5.00	99.8%	90-110%
Thallium	SW 6010B	011212B	mg/kg	ND	2.00	5.24	5.00	105%	90-110%	4.78	5.00	95.6%	90-110%
Vanadium	SW 6010B	011212B	mg/kg	ND	1.00	4.72	5.00	94.4%	90-110%	4.51	5.00	90.2%	90-110%
Zinc	SW 6010B	011212B	mg/kg	ND	2.00	5.18	5.00	104%	90-110%	4.84	5.00	96.9%	90-110%



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Report Continued

INTERFERENCE CHECK STANDARD (ICS A+B #1)

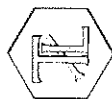
Parameter	Method	Units	ICS Obs.	ICS Theo.	% Rec.	Control Limits	ICS Obs.	ICS Theo.	% Rec.	Control Limits
Arsenic	SW 6010B	mg/kg	1.97	2.00	98.5%	80-120%	1.86	2.00	93.1%	80-120%
Cadmium	SW 6010B	mg/kg	2.08	2.00	104%	80-120%	1.93	2.00	96.4%	80-120%
Chromium	SW 6010B	mg/kg	2.09	2.00	104%	80-120%	1.97	2.00	98.6%	80-120%
Cobalt	SW 6010B	mg/kg	2.06	2.00	103%	80-120%	1.91	2.00	95.6%	80-120%
Copper	SW 6020A	mg/kg	0.0102	0.0100	102%	80-120%	0.00975	0.0100	97.5%	80-120%
Manganese	SW 6010B	mg/kg	1.97	2.00	98.5%	80-120%	1.88	2.00	94.1%	80-120%
Mercury	SW 6020A	mg/kg	0.00202	0.00200	101%	80-120%	0.00202	0.00200	101%	80-120%
Molybdenum	SW 6010B	mg/kg	0.0409	0.0400	102%	80-120%	0.0372	0.0400	93.0%	80-120%
Nickel	SW 6010B	mg/kg	2.08	2.00	104%	80-120%	1.94	2.00	97.2%	80-120%
Silver	SW 6010B	mg/kg	1.92	2.00	96.0%	80-120%	1.92	2.00	96.1%	80-120%
Zinc	SW 6010B	mg/kg	2.12	2.00	106%	80-120%	1.98	2.00	99.2%	80-120%

INTERFERENCE CHECK STANDARD (ICS A+B #2)

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	4.62	5.00	92.4%	85-115%	999361	86.4	82.4	4.71%	≤20
Arsenic	SW 6010B	mg/kg	4.96	5.00	99.2%	85-115%	999361	28.3	26.9	4.91%	≤20
Barium	SW 6010B	mg/kg	4.60	5.00	92.1%	85-115%	999361	61.8	59.0	4.68%	≤20
Beryllium	SW 6020A	mg/kg	4.82	5.00	96.5%	85-115%	999361	ND	ND	0.00%	≤20
Cadmium	SW 6010B	mg/kg	4.91	5.00	98.2%	85-115%	999361	12.4	12.2	2.21%	≤20
Chromium	SW 6010B	mg/kg	5.03	5.00	101%	85-115%	999361	4860	4680	3.77%	≤20
Cobalt	SW 6010B	mg/kg	4.83	5.00	96.5%	85-115%	999361	4.96	4.73	4.73%	≤20
Copper	SW 6020A	mg/kg	5.42	5.00	108%	85-115%	999361	34.0	32.4	4.93%	≤20
Lead	SW 6010B	mg/kg	5.01	5.00	100%	85-115%	999361	3.02	3.65	18.9%	≤20
Manganese	SW 6010B	mg/kg	5.16	5.00	103%	85-115%	999361	407	394	3.21%	≤20
Mercury	SW 6020A	mg/kg	1.01	1.00	101%	85-115%	999361	0.359	0.337	6.24%	≤20
Molybdenum	SW 6010B	mg/kg	4.72	5.00	94.4%	85-115%	999361	9.18	9.02	1.75%	≤20
Nickel	SW 6010B	mg/kg	4.96	5.00	99.2%	85-115%	999361	23.1	22.2	4.02%	≤20
Selenium	SW 6010B	mg/kg	5.20	5.00	104%	85-115%	999361	ND	ND	0.00%	≤20
Silver	SW 6010B	mg/kg	5.04	5.00	101%	85-115%	999361	ND	ND	0.00%	≤20
Thallium	SW 6010B	mg/kg	5.14	5.00	103%	85-115%	999361	ND	ND	0.00%	≤20
Vanadium	SW 6010B	mg/kg	4.64	5.00	92.8%	85-115%	999361	59.7	56.3	5.76%	≤20
Zinc	SW 6010B	mg/kg	5.19	5.00	104%	85-115%	999361	70.4	67.8	3.75%	≤20

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TRUESDAIL LABORATORIES, INC.

Report Continued

MATRIX SPIKE

Sample ID	Parameter	Method	Units	Sample Result	DF	Spike Level	Total Amt. of Spike	Theo. Value	MS Obs.	% Rec.	Accuracy Control Limits %
999361	Antimony	SW 6010B	mg/kg	86.4	2.00	218	437	523	527	101%	75-125%
999361	Arsenic	SW 6010B	mg/kg	28.3	2.00	218	437	465	525	114%	75-125%
999361	Barium	SW 6010B	mg/kg	61.8	2.00	218	437	499	486	97.1%	75-125%
999361	Beryllium	SW 6020A	mg/kg	0.00	10.0	1.14	11.4	11.4	10.9	95.8%	75-125%
999361	Cadmium	SW 6010B	mg/kg	12.4	2.00	218	437	449	454	101%	75-125%
999361	Chromium	SW 6010B	mg/kg	4860	5.00	218	1092	5952	5929	97.9%	75-125%
999361	Cobalt	SW 6010B	mg/kg	4.96	2.00	218	437	442	423	95.7%	75-125%
999361	Copper	SW 6020A	mg/kg	34.0	10.0	1.09	10.9	44.9	45.3	103%	75-125%
999361	Lead	SW 6010B	mg/kg	3.02	2.00	218	437	440	348	79.0%	75-125%
999361	Manganese	SW 6010B	mg/kg	407	2.00	218	437	844	819	94.3%	75-125%
999361	Mercury	SW 6020A	mg/kg	0.359	10.0	0.228	2.28	2.64	2.67	101%	75-125%
999361	Molybdenum	SW 6010B	mg/kg	9.18	2.00	218	437	446	476	107%	75-125%
999361	Nickel	SW 6010B	mg/kg	23.1	2.00	218	437	460	452	98.2%	75-125%
999361	Selenium	SW 6010B	mg/kg	0.00	2.00	218	437	437	445	102%	75-125%
999361	Silver	SW 6010B	mg/kg	0.00	5.00	218	1092	1092	1121	103%	75-125%
999361	Thallium	SW 6010B	mg/kg	0.00	2.00	218	437	437	370	84.8%	75-125%
999361	Vanadium	SW 6010B	mg/kg	59.7	2.00	218	437	496	481	96.5%	75-125%
999361	Zinc	SW 6010B	mg/kg	70.4	2.00	218	437	507	547	109%	75-125%

ND: Not detected, or below limit of detection.

DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

Dry Weight Calculations

Date Calculated: 2/16/2012

	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	7.132	---	57.2	16.6671	16.7	2.00	4.67
Nitrate as N	ND	---	57.2	ND	ND	4.00	9.35
Hexavalent Chromium	28.7208	---	57.2	67.1187	67.1	4.03	9.42
Hexavalent Chromium - Dup	27.6659	---	57.2	64.6535	64.6	4.03	9.42
Hexavalent Chromium - MS	176.0111	---	57.2	411.327	411	4.02	9.39
Hexavalent Chromium - IMS	8702.812	---	57.2	20337.948	20300	39.5	92.4
Hexavalent Chromium - PDMS	198.6077	---	57.2	464.134	464	10.0	23.4
Antimony	36.98	2.00	57.2	86.4200	86.4	4.67	10.9
Arsenic	12.11	2.00	57.2	28.3003	28.3	0.934	2.18
Barium	26.45	2.00	57.2	61.81206	61.8	0.934	2.18
Beryllium	ND	10.0	57.2	ND	ND	0.467	1.09
Cadmium	5.318	2.00	57.2	12.4278	12.4	0.934	2.18
Chromium	2078	5.00	57.2	4856.16	4860	2.34	5.46
Cobalt	2.121	2.00	57.2	4.9566	4.96	0.934	2.18
Copper	14.56	10.0	57.2	34.0258	34.0	0.467	1.09
Lead	1.294	2.00	57.2	3.0240	3.02	0.934	2.18
Manganese	174.2	2.00	57.2	407.0949	407	0.934	2.18
Mercury	0.1536	10.0	57.2	0.35895	0.359	0.0934	0.218
Molybdenum	3.929	2.00	57.2	9.1818	9.18	0.934	2.18
Nickel	9.887	2.00	57.2	23.1053	23.1	0.934	2.18
Selenium	ND	2.00	57.2	ND	ND	0.934	2.18
Silver	ND	5.00	57.2	ND	ND	2.34	5.46
Thallium	0.2263	2.00	57.2	0.5288	ND	0.934	2.18
Vanadium	25.54	2.00	57.2	59.6854	59.7	0.934	2.18
Zinc	30.14	2.00	57.2	70.4354	70.4	0.934	2.18

Sample Result in Dry Weight = [Sample_{ww} / (100-%Moisture)]*100

where:

Sample_{ww} = Sample result in wet weight

TRUESDAIL LABORATORIES, INC.



TOTAL SOLIDS BY SM 2540 B

Date of Analysis: 01/03/12

Analytical Batch:	01SOLID12A
Oven Temp, °C:	105

[illegible]

Relative Percent Difference			
Sample ID	Sample	Sample Dup	RPD
999361 998642 sw	42.791	43.352	1.3

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

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

Reviewer Name


Reviewer Signature

999361

CHAIN OF CUSTODY RECORD
[IM3plant-WDR-342]

TURNAROUND TIME
DATE 01/03/12

[illegible][illegible]

051



TRUESDAIL LABORATORIES, INC.



Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 999361

Date Delivered: 01/03/11 Time: 2130 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.1°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: _____

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February 3, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-342 PROJECT, GROUNDWATER
MONITORING,
TLI NO.: 999362


Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-342 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.

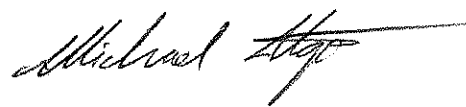
The samples were received and delivered with the chain of custody on January 3, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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: Three (3) Groundwaters

Project Name: PG&E Topock Project

Project No.: 408401.01.DM

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(714) 730-6239 · FAX (714) 730-6462
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Laboratory No.: 999362

Date: February 3, 2012

Collected: January 3, 2012

Received: January 3, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Kim Luck
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Kim Luck
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 / George Wahba



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

Attention: Shawn Duffy

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

Laboratory No.: 999362
Date Received: January 3, 2012

Analytical Results Summary

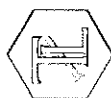
Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999362-001	SC-700B-WDR-342	E120.1	NONE	1/3/2012	13:30	EC	7190	umhos/cm	2.00
999362-001	SC-700B-WDR-342	E200.7	NONE-digested	1/3/2012	13:30	Aluminum	ND	ug/L	50.0
999362-001	SC-700B-WDR-342	E200.7	NONE-digested	1/3/2012	13:30	BORON	1010	ug/L	200
999362-001	SC-700B-WDR-342	E200.7	NONE-digested	1/3/2012	13:30	Iron	ND	ug/L	20.0
999362-001	SC-700B-WDR-342	E200.7	NONE-digested	1/3/2012	13:30	Molybdenum	17.8	ug/L	10.0
999362-001	SC-700B-WDR-342	E200.7	NONE-digested	1/3/2012	13:30	Nickel	ND	ug/L	10.0
999362-001	SC-700B-WDR-342	E200.7	NONE-digested	1/3/2012	13:30	Zinc	ND	ug/L	10.0
999362-001	SC-700B-WDR-342	E200.8	NONE-digested	1/3/2012	13:30	Antimony	ND	ug/L	10.0
999362-001	SC-700B-WDR-342	E200.8	NONE-digested	1/3/2012	13:30	Arsenic	ND	ug/L	1.0
999362-001	SC-700B-WDR-342	E200.8	NONE-digested	1/3/2012	13:30	Barium	18.0	ug/L	10.0
999362-001	SC-700B-WDR-342	E200.8	NONE-digested	1/3/2012	13:30	Chromium	ND	ug/L	1.0
999362-001	SC-700B-WDR-342	E200.8	NONE-digested	1/3/2012	13:30	Copper	ND	ug/L	5.0
999362-001	SC-700B-WDR-342	E200.8	NONE-digested	1/3/2012	13:30	Lead	ND	ug/L	10.0
999362-001	SC-700B-WDR-342	E200.8	NONE-digested	1/3/2012	13:30	Manganese	14.3	ug/L	1.0
999362-001	SC-700B-WDR-342	E218.6	LABFLT	1/3/2012	13:30	Chromium, hexavalent	ND	ug/L	2.1
999362-001	SC-700B-WDR-342	E300	NONE	1/3/2012	13:30	Fluoride	2.21	mg/L	0.500
999362-001	SC-700B-WDR-342	E300	NONE	1/3/2012	13:30	Nitrate as N	3.15	mg/L	0.500
999362-001	SC-700B-WDR-342	E300	NONE	1/3/2012	13:30	Sulfate	502	mg/L	50.0
999362-001	SC-700B-WDR-342	SM2130B	NONE	1/3/2012	13:30	Turbidity	ND	NTU	0.100
999362-001	SC-700B-WDR-342	SM2540C	NONE	1/3/2012	13:30	Total Dissolved Solids	4280	mg/L	250
999362-001	SC-700B-WDR-342	SM4500NH3D	NONE	1/3/2012	13:30	Ammonia-N	ND	mg/L	0.500
999362-001	SC-700B-WDR-342	SM4500NO2B	NONE	1/3/2012	13:30	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
999362-002	SC-100B-WDR-342	E120.1	NONE	1/3/2012	13:30	EC	7840	umhos/cm	2.00
999362-002	SC-100B-WDR-342	E200.7	NONE-digested	1/3/2012	13:30	Aluminum	ND	ug/L	50.0
999362-002	SC-100B-WDR-342	E200.7	NONE-digested	1/3/2012	13:30	BORON	1080	ug/L	200
999362-002	SC-100B-WDR-342	E200.7	NONE-digested	1/3/2012	13:30	Iron	ND	ug/L	20.0
999362-002	SC-100B-WDR-342	E200.7	NONE-digested	1/3/2012	13:30	Molybdenum	19.8	ug/L	10.0
999362-002	SC-100B-WDR-342	E200.7	NONE-digested	1/3/2012	13:30	Nickel	ND	ug/L	10.0
999362-002	SC-100B-WDR-342	E200.7	NONE-digested	1/3/2012	13:30	Zinc	12.2	ug/L	10.0
999362-002	SC-100B-WDR-342	E200.8	NONE-digested	1/3/2012	13:30	Antimony	ND	ug/L	10.0
999362-002	SC-100B-WDR-342	E200.8	NONE-digested	1/3/2012	13:30	Arsenic	3.4	ug/L	1.0
999362-002	SC-100B-WDR-342	E200.8	NONE-digested	1/3/2012	13:30	Barium	29.0	ug/L	10.0
999362-002	SC-100B-WDR-342	E200.8	NONE-digested	1/3/2012	13:30	Chromium	901	ug/L	2.0
999362-002	SC-100B-WDR-342	E200.8	NONE-digested	1/3/2012	13:30	Copper	ND	ug/L	5.0
999362-002	SC-100B-WDR-342	E200.8	NONE-digested	1/3/2012	13:30	Lead	ND	ug/L	10.0
999362-002	SC-100B-WDR-342	E200.8	NONE-digested	1/3/2012	13:30	Manganese	7.6	ug/L	1.0
999362-002	SC-100B-WDR-342	E218.6	LABFLT	1/3/2012	13:30	Chromium, hexavalent	922	ug/L	10.5
999362-002	SC-100B-WDR-342	E300	NONE	1/3/2012	13:30	Fluoride	2.61	mg/L	0.500
999362-002	SC-100B-WDR-342	E300	NONE	1/3/2012	13:30	Nitrate as N	3.47	mg/L	0.500
999362-002	SC-100B-WDR-342	E300	NONE	1/3/2012	13:30	Sulfate	572	mg/L	25.0
999362-002	SC-100B-WDR-342	SM2130B	NONE	1/3/2012	13:30	Turbidity	0.110	NTU	0.100
999362-002	SC-100B-WDR-342	SM2540C	NONE	1/3/2012	13:30	Total Dissolved Solids	4720	mg/L	250
999362-002	SC-100B-WDR-342	SM4500NH3D	NONE	1/3/2012	13:30	Ammonia-N	ND	mg/L	0.500
999362-002	SC-100B-WDR-342	SM4500NO2B	NONE	1/3/2012	13:30	Nitrite as N	ND	mg/L	0.0050



TRUESDAIL LABORATORIES, INC.

Report Continued

Lab Sample ID	Field ID	Analysis Method	Extraction		Sample Date	Sample Time	Parameter	Result	Units	RL
			Method	Method						
999362-003	SC-701-WDR-342	E120.1	NONE	NONE	1/3/2012	13:30	EC	44200	umhos/cm	2.00
999362-003	SC-701-WDR-342	E200.7	NONE-digested	NONE-digested	1/3/2012	13:30	Molybdenum	122	ug/L	10.0
999362-003	SC-701-WDR-342	E200.7	NONE-digested	NONE-digested	1/3/2012	13:30	Nickel	15.7	ug/L	10.0
999362-003	SC-701-WDR-342	E200.7	NONE-digested	NONE-digested	1/3/2012	13:30	Zinc	18.7	ug/L	10.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Antimony	ND	ug/L	10.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Arsenic	ND	ug/L	1.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Barium	133	ug/L	10.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Beryllium	ND	ug/L	2.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Cadmium	ND	ug/L	3.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Chromium	5.6	ug/L	2.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Cobalt	ND	ug/L	10.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Copper	ND	ug/L	10.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Lead	ND	ug/L	10.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Manganese	113	ug/L	2.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Mercury	ND	ug/L	2.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Selenium	25.6	ug/L	10.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Silver	ND	ug/L	5.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Thallium	ND	ug/L	2.0
999362-003	SC-701-WDR-342	E200.8	NONE-digested	NONE-digested	1/3/2012	13:30	Vanadium	ND	ug/L	5.0
999362-003	SC-701-WDR-342	E218.6	LABFLT	LABFLT	1/3/2012	13:30	Chromium, hexavalent	ND	ug/L	1.0
999362-003	SC-701-WDR-342	E300	NONE	NONE	1/3/2012	13:30	Fluoride	16.7	mg/L	2.00
999362-003	SC-701-WDR-342	SM2540C	NONE	NONE	1/3/2012	13:30	Total Dissolved Solids	33000	mg/L	1250

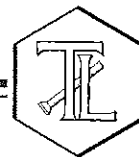
ND: Non Detected (below reporting limit)
mg/L: Milligrams per liter.

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

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

TRUESDAIL LABORATORIES, INC.

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TUSTIN, CALIFORNIA 92780-7008
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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

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 999362

Page 1 of 35

Printed 2/3/2012

Samples Received on 1/3/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-342	999362-001	01/03/2012 13:30	Water
SC-100B-WDR-342	999362-002	01/03/2012 13:30	Water
SC-701-WDR-342	999362-003	01/03/2012 13:30	Water

Anions By I.C. - EPA 300.0

Batch: 01AN12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999362-001 Fluoride	mg/L	01/04/2012 11:42	1.00	0.0310	0.500	2.21
Nitrate as Nitrogen	mg/L	01/04/2012 11:42	1.00	0.0270	0.500	3.15
Sulfate	mg/L	01/04/2012 14:24	100	11.4	50.0	502.
999362-002 Fluoride	mg/L	01/04/2012 11:54	1.00	0.0310	0.500	2.61
Nitrate as Nitrogen	mg/L	01/04/2012 11:54	1.00	0.0270	0.500	3.47
Sulfate	mg/L	01/04/2012 17:22	50.0	5.70	25.0	572.
999362-003 Fluoride	mg/L	01/04/2012 17:33	20.0	0.620	2.00	16.7

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 = 999359-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	1.00	ND	0.407	0	0 - 20
Nitrate as Nitrogen	mg/L	1.00	2.22	2.19	1.50	0 - 20

Duplicate

Lab ID = 999362-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Sulfate	mg/L	100	496.	502	1.24	0 - 20

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 2/3/2012

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	20.1	20.0	100.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.01	4.00	100.	90 - 110

Matrix Spike

Lab ID = 999359-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	1.00	2.57	2.41(2.00)	108	85 - 115
Nitrate as Nitrogen	mg/L	1.00	4.38	4.19(2.00)	109.	85 - 115

Matrix Spike

Lab ID = 999362-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Sulfate	mg/L	100	1130	1100(600.)	105.	85 - 115

MRCCS - Secondary

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	20.0	20.0	100.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.02	4.00	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.19	3.00	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.16	3.00	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.03	3.00	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	15.4	15.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	15.4	15.0	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	14.8	15.0	98.9	90 - 110
Nitrate as Nitrogen	mg/L	1.00	2.96	3.00	98.8	90 - 110



TRUESDAIL LABORATORIES, INC.

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	3.08	3.00	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	3.08	3.00	102.	90 - 110

Nitrite SM 4500-NO2 B

Batch 01NO212A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999362-001 Nitrite as Nitrogen	mg/L	01/04/2012 19:02	1.00	0.000360	0.0050	ND
999362-002 Nitrite as Nitrogen	mg/L	01/04/2012 19:03	1.00	0.000360	0.0050	ND

Method Blank

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

Duplicate

Lab ID = 999343-017

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.00580	0.00580	0.00	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0428	0.0400	107	90 - 110

Matrix Spike

Lab ID = 999343-017

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0221	0.0258(0.0200)	81.5	80 - 120

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0205	0.0200	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0200	0.0200	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0200	0.0200	100.	90 - 110


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Printed 2/3/2012
Specific Conductivity - EPA 120.1

Batch 01EC12A

1/5/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999362-001 Specific Conductivity	umhos/cm	01/05/2012	1.00	0.0950	2.00	7190
999362-002 Specific Conductivity	umhos/cm	01/05/2012	1.00	0.0950	2.00	7840
999362-003 Specific Conductivity	umhos/cm	01/05/2012	1.00	0.0950	2.00	44200

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 999360-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	4950	4960	0.202	0 - 10

Lab Control Sample

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

Lab Control Sample Duplicate

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	682	706	96.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	950.	997	95.3	90 - 110



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Chrome VI by EPA 218.6

Batch 01CrH12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999362-002 Chromium, Hexavalent	ug/L	01/06/2012 14:20	52.5	1.16	10.5	922.

Method Blank

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

Duplicate

Lab ID = 999360-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	11.8	12.0	1.20	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.224	0.200	112.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.80	5.00	96.0	90 - 110

Matrix Spike

Lab ID = 999360-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	28.2	27.9(15.9)	102.	90 - 110

Matrix Spike

Lab ID = 999362-001

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

Matrix Spike

Lab ID = 999362-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	0.00	5.25(5.25)	0.00	90 - 110

Matrix Spike

Lab ID = 999362-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.5	12.1	12.5(10.5)	96.1	90 - 110

Matrix Spike

Lab ID = 999362-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	52.5	2020	1970(1050)	105.	90 - 110

Matrix Spike

Lab ID = 999362-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	6.35	6.35(5.25)	100.	90 - 110

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Matrix Spike

Lab ID = 999362-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.25	1.88(1.06)	41.0	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.86	5.00	97.1	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.96	10.0	99.6	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.98	10.0	99.8	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.83	10.0	98.3	95 - 105



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Project Number: 424973.01.DM

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Chrome VI by EPA 218.6

Batch: 01CrH12Q

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999362-001 Chromium, Hexavalent	ug/L	01/27/2012 21:29	10.5	0.273	2.1	ND
999362-003 Chromium, Hexavalent	ug/L	01/27/2012 20:55	5.25	0.136	1.0	ND

Method Blank

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

Duplicate

Lab ID = 999852-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	2.30	2.36	2.70	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.198	0.200	98.8	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.87	5.00	97.3	90 - 110

Matrix Spike

Lab ID = 999360-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.09	27.6	28.0(16.4)	97.8	90 - 110

Matrix Spike

Lab ID = 999362-001

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

Matrix Spike

Lab ID = 999362-001

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 = 999362-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.5	11.2	11.6(10.5)	95.5	90 - 110

Matrix Spike

Lab ID = 999362-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.13	5.25(5.25)	97.8	90 - 110

Matrix Spike

Lab ID = 999362-003

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



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Project Number: 424973.01.DM

Printed 2/3/2012

Metals by EPA 200.7, Total

Batch: 011212B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999362-001 Aluminum	ug/L	01/12/2012 17:09	1.00	2.83	50.0	ND
Boron	ug/L	01/12/2012 17:09	1.00	1.50	200.	1010
Iron	ug/L	01/12/2012 17:09	1.00	1.34	20.0	ND
Molybdenum	ug/L	01/12/2012 17:09	1.00	4.02	10.0	17.8
Nickel	ug/L	01/12/2012 17:09	1.00	2.56	10.0	ND
999362-002 Aluminum	ug/L	01/12/2012 17:15	1.00	2.83	50.0	ND
Boron	ug/L	01/12/2012 17:15	1.00	1.50	200.	1080
Iron	ug/L	01/12/2012 17:15	1.00	1.34	20.0	ND
Molybdenum	ug/L	01/12/2012 17:15	1.00	4.02	10.0	19.8
Nickel	ug/L	01/12/2012 17:15	1.00	2.56	10.0	ND
999362-003 Molybdenum	ug/L	01/12/2012 17:21	1.00	4.02	10.0	122.
Nickel	ug/L	01/12/2012 17:21	1.00	2.56	10.0	15.7

Method Blank

Parameter	Unit	DF	Result
Aluminum	ug/L	1.00	ND
Iron	ug/L	1.00	ND
Nickel	ug/L	1.00	ND
Boron	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

Duplicate

Lab ID = 999308-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Aluminum	ug/L	1.00	ND	0.00	0	0 - 20
Iron	ug/L	1.00	ND	0.00	0	0 - 20
Nickel	ug/L	1.00	ND	0.00	0	0 - 20
Boron	ug/L	1.00	1010	1040	2.53	0 - 20
Molybdenum	ug/L	1.00	17.9	17.8	0.560	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	108.	100.	108	85 - 115
Iron	ug/L	1.00	101.	100.	101	85 - 115
Nickel	ug/L	1.00	98.4	100.	98.4	85 - 115
Boron	ug/L	1.00	93.7	100.	93.7	85 - 115
Molybdenum	ug/L	1.00	92.5	100.	92.5	85 - 115

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Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

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Metals by EPA 200.7, Total

Batch 011612A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999362-001 Zinc	ug/L	01/16/2012 12:00	1.00	3.89	10.0	ND
999362-002 Zinc	ug/L	01/16/2012 12:23	1.00	3.89	10.0	12.2
999362-003 Zinc	ug/L	01/16/2012 12:29	1.00	3.89	10.0	18.7

Method Blank

Parameter	Unit	DF	Result
Zinc	ug/L	1.00	ND

Duplicate

Lab ID = 999308-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Zinc	ug/L	1.00	12.9	13.1	1.54	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	106.	100.	106.	85 - 115

Matrix Spike

Lab ID = 999308-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Zinc	ug/L	1.00	105.	113.(100.)	91.9	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	4780	5000	95.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	4770	5000	95.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	4510	5000	90.2	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	1840	2000	92.0	80 - 120

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Project Name: PG&E Topock Project

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Metals by EPA 200.8, Total

Batch 010712C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999362-001 Antimony	ug/L	01/08/2012 12:58	5.00	0.120	10.0	ND
Barium	ug/L	01/08/2012 12:58	5.00	0.200	10.0	18.0
Chromium	ug/L	01/08/2012 12:58	5.00	0.110	1.0	ND
Copper	ug/L	01/08/2012 12:58	5.00	0.125	5.0	ND
Lead	ug/L	01/08/2012 12:58	5.00	0.110	10.0	ND
Manganese	ug/L	01/08/2012 12:58	5.00	0.285	1.0	14.3
999362-002 Antimony	ug/L	01/08/2012 13:07	5.00	0.120	10.0	ND
Barium	ug/L	01/08/2012 13:07	5.00	0.200	10.0	29.0
Chromium	ug/L	01/08/2012 22:40	10.0	0.220	2.0	901.
Copper	ug/L	01/08/2012 13:07	5.00	0.125	5.0	ND
Lead	ug/L	01/08/2012 13:07	5.00	0.110	10.0	ND
Manganese	ug/L	01/08/2012 13:07	5.00	0.285	1.0	7.6
999362-003 Antimony	ug/L	01/08/2012 23:07	10.0	0.240	10.0	ND
Barium	ug/L	01/08/2012 23:07	10.0	0.400	10.0	133.
Beryllium	ug/L	01/08/2012 23:07	10.0	0.360	2.0	ND
Cadmium	ug/L	01/08/2012 23:07	10.0	0.940	3.0	ND
Chromium	ug/L	01/08/2012 23:07	10.0	0.220	2.0	5.6
Cobalt	ug/L	01/08/2012 23:07	10.0	0.970	10.0	ND
Copper	ug/L	01/08/2012 23:07	10.0	0.250	10.0	ND
Lead	ug/L	01/08/2012 23:07	10.0	0.220	10.0	ND
Manganese	ug/L	01/08/2012 23:07	10.0	0.570	2.0	113.
Mercury	ug/L	01/08/2012 23:07	10.0	0.150	2.0	ND
Selenium	ug/L	01/08/2012 23:07	10.0	0.680	10.0	25.6
Thallium	ug/L	01/08/2012 23:07	10.0	0.970	2.0	ND

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**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 16 of 35****Project Number: 424973.01.DM****Printed 2/3/2012****Method Blank**

Parameter	Unit	DF	Result
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
Mercury	ug/L	1.00	ND
Selenium	ug/L	1.00	ND
Antimony	ug/L	1.00	ND
Copper	ug/L	1.00	ND
Lead	ug/L	1.00	ND
Thallium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	0.999	1.00	99.9	70 - 130
Beryllium	ug/L	1.00	0.190	0.200	95.1	70 - 130
Cadmium	ug/L	1.00	0.188	0.200	94.0	70 - 130
Cobalt	ug/L	1.00	0.951	1.00	95.1	70 - 130
Chromium	ug/L	1.00	0.178	0.200	89.1	70 - 130
Mercury	ug/L	1.00	0.213	0.200	107.	70 - 130
Selenium	ug/L	1.00	0.924	1.00	92.4	70 - 130
Antimony	ug/L	1.00	1.00	1.00	100.	70 - 130
Copper	ug/L	1.00	1.15	1.00	115	70 - 130
Lead	ug/L	1.00	0.968	1.00	96.8	70 - 130
Thallium	ug/L	1.00	0.188	0.200	93.8	70 - 130
Manganese	ug/L	1.00	0.197	0.200	98.6	70 - 130



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Project Name: PG&E Topock Project

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Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	5.00	108.	100.	108.	85 - 115
Beryllium	ug/L	5.00	109.	100.	109.	85 - 115
Cadmium	ug/L	5.00	110.	100.	110.	85 - 115
Cobalt	ug/L	5.00	105	100.	105	85 - 115
Chromium	ug/L	5.00	109.	100.	109.	85 - 115
Mercury	ug/L	5.00	22.2	20.0	111.	85 - 115
Selenium	ug/L	5.00	101.	100.	101.	85 - 115
Antimony	ug/L	5.00	106.	100.	106.	85 - 115
Copper	ug/L	5.00	110.	100.	110.	85 - 115
Lead	ug/L	5.00	109.	100.	109.	85 - 115
Thallium	ug/L	5.00	105.	100.	105.	85 - 115
Manganese	ug/L	5.00	106.	100.	106.	85 - 115

Matrix Spike

Lab ID = 999308-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	5.00	123.	118.(100.)	106.	75 - 125
Beryllium	ug/L	5.00	106.	100.(100.)	106.	75 - 125
Cadmium	ug/L	5.00	90.7	100.(100.)	90.7	75 - 125
Cobalt	ug/L	5.00	103.	100.(100.)	103.	75 - 125
Chromium	ug/L	5.00	112.	101.(100.)	110.	75 - 125
Mercury	ug/L	5.00	20.4	20.0(20.0)	102.	75 - 125
Selenium	ug/L	5.00	99.2	104.(100.)	95.6	75 - 125
Antimony	ug/L	5.00	102.	100.(100.)	102.	75 - 125
Copper	ug/L	5.00	99.8	100.(100.)	99.8	75 - 125
Lead	ug/L	5.00	94.2	100.(100.)	94.2	75 - 125
Thallium	ug/L	5.00	92.2	100.(100.)	92.2	75 - 125
Manganese	ug/L	5.00	107.	106.(100.)	102.	75 - 125



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 29 of 35

Project Number: 424973.01.DM

Printed 2/3/2012

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Thallium	ug/L	1.00	ND	0.00		
Manganese	ug/L	1.00	9.32	10.0	93.2	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.59	10.0	95.9	80 - 120

Serial Dilution

Lab ID = 999362-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	887.	901	1.53	0 - 10

Serial Dilution

Lab ID = 999362-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	50.0	136.	133	2.52	0 - 10
Selenium	ug/L	50.0	25.9	25.6	1.24	0 - 10
Manganese	ug/L	50.0	111.	113	1.88	0 - 10



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 30 of 35

Project Number: 424973.01.DM

Printed 2/3/2012

Metals by EPA 200.8, Total

Batch 011612A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999362-001 Arsenic	ug/L	01/16/2012 16:06	5.00	0.285	1.0	ND
999362-002 Arsenic	ug/L	01/16/2012 16:13	5.00	0.285	1.0	3.4
999362-003 Arsenic	ug/L	01/16/2012 16:35	5.00	0.285	1.0	ND
Silver	ug/L	01/16/2012 16:35	5.00	0.175	5.0	ND
Vanadium	ug/L	01/16/2012 16:35	5.00	0.370	5.0	ND

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Silver	ug/L	1.00	ND
Vanadium	ug/L	1.00	ND

Duplicate

Lab ID = 999308-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	5.00	ND	0.00	0	0 - 20
Silver	ug/L	5.00	ND	0.00	0	0 - 20
Vanadium	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.173	0.200	86.4	70 - 130
Silver	ug/L	1.00	1.14	1.00	114.	70 - 130
Vanadium	ug/L	1.00	0.990	1.00	99.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	88.0	100.	88.0	85 - 115
Silver	ug/L	5.00	95.0	100.	95.0	85 - 115
Vanadium	ug/L	5.00	92.8	100.	92.8	85 - 115

Matrix Spike

Lab ID = 999308-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	99.5	100.(100.)	99.5	75 - 125
Silver	ug/L	5.00	86.9	100.(100.)	86.9	75 - 125
Vanadium	ug/L	5.00	107.	100.(100.)	107.	75 - 125

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

*Report Continued***Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 33 of 35****Project Number: 424973.01.DM****Printed 2/3/2012****Total Dissolved Solids by SM 2540 C**

Batch 01TDS12A

1/5/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999362-001 Total Dissolved Solids	mg/L	01/03/2012	1.00	0.400	250.	4280
999362-002 Total Dissolved Solids	mg/L	01/03/2012	1.00	0.400	250.	4720
999362-003 Total Dissolved Solids	mg/L	01/03/2012	1.00	0.400	1250	33000

Method Blank

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

Duplicate

Lab ID = 999359-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	8020	8160	1.73	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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 34 of 35

Project Number: 424973.01.DM

Printed 2/3/2012

Ammonia Nitrogen by SM4500-NH3D

Batch 01NH3-E11A

1/5/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999362-001 Ammonia as N	mg/L	01/05/2012	1.00	0.00120	0.500	ND
999362-002 Ammonia as N	mg/L	01/05/2012	1.00	0.00120	0.500	ND

Method Blank

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

Duplicate

Lab ID = 999362-002

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	10.6	10.0	106.	90 - 110

Matrix Spike

Lab ID = 999362-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.17	6.00(6.00)	103.	75 - 125

Matrix Spike Duplicate

Lab ID = 999362-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.58	6.00(6.00)	110.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.28	6.00	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.68	6.00	94.7	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 35 of 35

Project Number: 424973.01.DM

Printed 2/3/2012

Turbidity by SM 2130 B

Batch: 01TUC12C

1/5/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999362-001 Turbidity	NTU	01/05/2012	1.00	0.0140	0.100	ND
999362-002 Turbidity	NTU	01/05/2012	1.00	0.0140	0.100	0.110

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 999362-001

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

Lab Control Sample

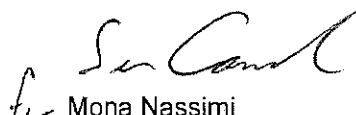
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.67	8.00	95.9	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.67	8.00	95.9	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


f - Mona Nassimi
Manager, Analytical Services

TDS/EC CHECK

Date Calculated: 1/9/12

[illegible]

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
12/28/11	999308	7	5 mL	9.5	8:30 AM	GW
1/3/12	999359-1	7	5 mL	9.5	18:00	MG
	↓ -2	9.5	N/A	N/A	N/A	MG
1/4/12	999360-1	7	5 mL	9.5	10:45 AM	GW
	↓ -2	7	5 mL	↓	10:50 AM	GW
1/4/12	999362-1	7	5 mL	9.5	11:00 AM	GW
	↓ -2	↓	↓	↓	11:05 AM	↓
	↓ -3	↓	↓	↓	11:10 AM	↓
1/4/12	999389	7	5 mL	9.5	5:15 PM	GW
1/5/12	999416	7	5 mL	9.5	11:45 PM	MG
1/9/12	999460	7	5 mL	9.5	6:45 PM	MG
1/10/12	999462	9.5	N/A	N/A	N/A	GW
1/11/12	999512-1	9.5	N/A	N/A	N/A	GW
	↓ -2	↓	↓	↓	↓	↓
	↓ -3	↓	↓	↓	↓	↓
	↓ -4	↓	↓	↓	↓	↓
	↓ -5	↓	↓	↓	↓	↓
	↓ -6	↓	↓	↓	↓	↓
	↓ -7	↓	↓	↓	↓	↓
1/11/12	999513-1	9.5	N/A	N/A	N/A	GW
	↓ -2	↓	↓	↓	↓	↓
	↓ -3	↓	↓	↓	↓	↓
	↓ -4	↓	↓	↓	↓	↓
	↓ -6	↓	↓	↓	↓	↓
	↓ -11	↓	↓	↓	↓	↓
1/11/12	999511	7	5 mL	9.5	8:50 AM	GW
1/11/12	Raw + Buffer	9.5	N/A	N/A	N/A	GW
1/11/12	999553	7	5 mL	9.5	5 PM	GW
1/11/12	999513-15	9.5	N/A	N/A	N/A	GW

Metals Samples Logbook

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
998901 (1-2)	<1	<2	12/09/11	M.M	Yes	Yes
998945 (1-2)	↓	↓	↓	↓	↓	-11-11
998946 (1-2)	↓	↓	12/09/11	↓	↓	-11-11
998947 (1-5)	↓	↓	↓	↓	↓	-11-11
998996 (1-6)	↓	↓	↓	↓	↓	-11-11
999016 (1-6)	<1	<2	12/12/11	M.M	Yes	-11-11
999052	>1	<2	12/04/11	M.M	Yes	-
999056	↓	↓	↓	↓	↓	-
999059 (1-2)	↓	↓	↓	↓	↓	-
999038 (1-2)	<1	<2	12/14/11	M.M	Yes	-
999039 (1-5)	↓	↓	12/10	↓	↓	-
999084 (1-6)	↓	↓	↓	↓	↓	-
999086 (1-6)	↓	↓	↓	↓	↓	-
999087 (1-2)	↓	↓	↓	↓	↓	-
999088	↓	↓	↓	↓	↓	-
999089 (1-5)	↓	↓	↓	↓	↓	-
999091 (1-2)	<1	<2	12/15/11	M.M	Yes	-
999090 (1-9)	↓	↓	↓	↓	↓	-
999092 (1-16)	↓	↓	↓	↓	↓	-
999117 (1-2)	↓	↓	↓	↓	↓	-
999118	↓	↓	↓	↓	↓	-
999121 (1-4)	↓	↓	↓	↓	↓	-
999154 (1-9)	<1	<2	12/16/11	M.M	Yes	-
999155 (1-2)	↓	↓	↓	↓	↓	-
999156	↓	↓	↓	↓	↓	-
999047-1	>1	<2	12/16/11	M.M	Yes	-
999064 (1-2)	↓	↓	↓	↓	↓	-
999124	↓	↓	↓	↓	↓	-
999125 (1-4)	↓	↓	↓	↓	↓	-
999148	↓	↓	↓	↓	↓	-
999149	↓	↓	↓	↓	↓	-
999151	↓	↓	↓	↓	↓	-
999167	↓	↓	↓	↓	↓	-
999178 (1-8)	<1	<2	12/19/11	M.M	Yes	-
999179 (1-8)	↓	↓	↓	↓	↓	-
999180 (1-26)	↓	↓	↓	↓	↓	-
999028 (1-2)	Solid	-	12/19/11	M.M	Yes	TTC
999175 (1-2)	↓	↓	↓	↓	↓	↓
999191	↓	↓	↓	↓	↓	↓
998731 (1-2)	<1	<2	11/23/11	M.M	Yes	-
998227	<1	<2	12/21/11	M.M	Yes	-
998732 (1-13)	<1	<2	11/30/11	M.M	Yes	-
998802	<1	<2	11/30/11	M.M	Yes	-
999247	>1	<2	12/21/11	M.M	Yes	-
998777 (1-7)	<1	<2	11/30/11	M.M	Yes	-
998778 (1-9)	<1	<2	↓	↓	↓	-
999308	<1	<2	01/01/12	M.M	Yes	-
999360 (1-2)	↓	>7.2	↓	↓	Yes	Yes
999362 (1-3)	↓	>7.2	↓	↓	↓	↓

2/3/12 M.M

01/11/11
M.M



TRUESDAIL LABORATORIES, INC.

ALERT !!
Level III QC

Sample Integrity & Analysis Discrepancy Form

Client: E2

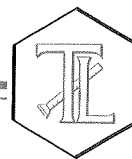
Lab # 999362

Date Delivered: 01/03/11 Time: 2130 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 4.1°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: _____

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

April 10, 2012

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

Revision 1: 04/10/12

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-343 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 999511

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-343 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 January 10, 2012, 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.

The result for Total Dissolved Solids by SM 2540C on January 13, 2012 exceeded the acceptance limit for the measured TDS to calculated TDS ratio and did not match historical data. When discovered, the sample was re-analyzed, on January 27, 2012 and past the method specified holding time, but was within acceptable limits. The result from the re-analysis was reported. The exceedance of the acceptance limits of the original result was due to possible analyst error.

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.: 424973.01.DM

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
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Laboratory No.: 999511

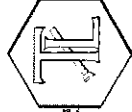
Date: February 2, 2012

Collected: January 10, 2012

Received: January 10, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Kim Luck
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Kim Luck
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov / George Wahba



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.: 999511
Date Received: January 10, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999511-001	SC-700B-WDR-343	E120.1	NONE	1/10/2012	14:37	EC	7000	umhos/cm	2.00
999511-001	SC-700B-WDR-343	E200.8	NONE-digested	1/10/2012	14:37	Chromium	ND	ug/L	1.0
999511-001	SC-700B-WDR-343	E200.8	NONE-digested	1/10/2012	14:37	Manganese	17.6	ug/L	1.0
999511-001	SC-700B-WDR-343	E218.6	LABFLT	1/10/2012	14:37	Chromium, hexavalent	ND	ug/L	1.0
999511-001	SC-700B-WDR-343	SM2130B	NONE	1/10/2012	14:37	Turbidity	ND	NTU	0.100
999511-001	SC-700B-WDR-343	SM2540C	NONE	1/10/2012	14:37	Total Dissolved Solids	4150 J	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:

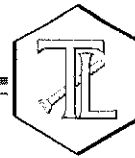
Results below 0.01ppm will have two (2) significant figures.

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

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

TRUESDAIL LABORATORIES, INC.

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Established 1931

REPORT

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

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 999511

Page 1 of 8

Printed 2/2/2012

Samples Received on 1/10/2012 10:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-343	999511-001	01/10/2012 14:37	Water

Specific Conductivity - EPA 120.1

Batch 01EC12D

1/16/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999511-001 Specific Conductivity	umhos/cm	01/16/2012	1.00	0.0950	2.00	7000

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 999549-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	336	339	0.889	0 - 10

Lab Control Sample

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

Lab Control Sample Duplicate

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

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	701	706	99.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	899	997	90.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	899	997	90.2	90 - 110

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

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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 2/2/2012

Chrome VI by EPA 218.6

Batch: 01CrH12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999511-001 Chromium, Hexavalent	ug/L	01/12/2012 14:25	5.25	0.136	1.0	ND

Method Blank

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

Duplicate

Lab ID = 999513-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0216	0.0192	11.8	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.208	0.200	104.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00	97.9	90 - 110

Matrix Spike

Lab ID = 999511-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.14	5.25(5.25)	97.9	90 - 110

Matrix Spike

Lab ID = 999511-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	0.995	1.06(1.06)	93.8	90 - 110

Matrix Spike

Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.989	1.02(1.00)	96.6	90 - 110

Matrix Spike

Lab ID = 999513-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.980	1.02(1.00)	96.1	90 - 110

Matrix Spike

Lab ID = 999513-003

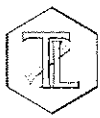
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.978	1.02(1.00)	95.7	90 - 110

Matrix Spike

Lab ID = 999513-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.03(1.00)	99.0	90 - 110

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



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 2/2/2012

Metals by EPA 200.8, Total

Batch 011712B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999511-001 Chromium	ug/L	01/18/2012 01:47	5.00	0.110	1.0	ND
Manganese	ug/L	01/18/2012 01:47	5.00	0.285	1.0	17.6

Method Blank

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

Duplicate

Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	1.95	1.83	6.40	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.208	0.200	104.	70 - 130
Manganese	ug/L	1.00	0.218	0.200	109.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	95.6	100.	95.6	85 - 115
Manganese	ug/L	5.00	91.9	100.	91.9	85 - 115

Matrix Spike

Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	96.0	100.(100.)	96.0	75 - 125
Manganese	ug/L	5.00	94.5	102.(100.)	92.6	75 - 125

Matrix Spike Duplicate

Lab ID = 999513-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	97.8	100.(100.)	97.8	75 - 125
Manganese	ug/L	5.00	93.2	102.(100.)	91.4	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.90	10.0	99.0	90 - 110
Manganese	ug/L	1.00	9.65	10.0	96.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.47	10.0	94.7	90 - 110

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 2/2/2012

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.11	10.0	91.1	80 - 120

Total Dissolved Solids by SM 2540 C

Batch 01TDS12H

1/27/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999511-001 Total Dissolved Solids	mg/L	01/27/2012	1.00	0.400	250.	4150 J

Method Blank

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

Duplicate

Lab ID = 999810-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4110	4290	4.28	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

Turbidity by SM 2130 B

Batch 01TUC12I

1/12/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999511-001 Turbidity	NTU	01/12/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 999570-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.112	0.113	0.889	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.00	8.00	100.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.01	8.00	100.	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project


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Project Number: 424973.01.DM

Printed 2/2/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi
Manager, Analytical Services

E2 Sem



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 01TDS12C
Date Calculated: 1/19/12

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	105.3556	105.3557	105.3557	0.0000	No	0.0001	1.0	25.0	ND	1
999486-9	100	111.1863	111.2397	111.2395	0.0002	No	0.0532	532.0	25.0	532.0	1
999511	10	50.7017	50.7640	50.7639	0.0001	No	0.0622	6220.0	250.0	6220.0	1
999549-1	100	111.3938	111.4143	111.4143	0.0000	No	0.0205	205.0	25.0	205.0	1
999601	100	72.4674	72.5065	72.5065	0.0000	No	0.0391	391.0	25.0	391.0	1
999579-1	20	51.2643	51.3233	51.3229	0.0004	No	0.0586	2930.0	125.0	2930.0	1
999579-2	100	100.6826	100.7132	100.713	0.0002	No	0.0304	304.0	25.0	304.0	1
999579-3	20	50.9498	51.0368	51.0365	0.0003	No	0.0867	4335.0	125.0	4335.0	1
999579-4	20	47.9637	48.0253	48.025	0.0003	No	0.0613	3065.0	125.0	3065.0	1
999579-5	20	50.9639	51.0261	51.026	0.0001	No	0.0621	3105.0	125.0	3105.0	1
999579-6	50	65.7025	65.7548	65.7546	0.0002	No	0.0521	1042.0	50.0	1042.0	1
999601D	100	69.3453	69.3854	69.3853	0.0001	No	0.0400	400.0	25.0	400.0	1
LCS	100	105.2584	105.3087	105.3087	0.0000	No	0.0503	503.0	25.0	503.0	1
999579-7	50	74.1773	74.273	74.2728	0.0002	No	0.0955	1910.0	50.0	1910.0	1
999579-9	50	72.8039	72.866	72.866	0.0000	No	0.0621	1242.0	50.0	1242.0	1
999579-10	50	75.7649	75.8854	75.8854	0.0000	No	0.1205	2410.0	50.0	2410.0	1
999579-11	50	74.8700	74.9976	74.9976	0.0000	No	0.1276	2552.0	50.0	2552.0	1
999579-12	20	51.1872	51.2692	51.269	0.0002	No	0.0818	4090.0	125.0	4090.0	1
999579-13	20	49.2632	49.3325	49.3324	0.0001	No	0.0692	3460.0	125.0	3460.0	1
999579-14	20	51.5083	51.5794	51.579	0.0004	No	0.0707	3535.0	125.0	3535.0	1
999579-15	20	47.9634	48.0804	48.08	0.0004	No	0.1166	5830.0	125.0	5830.0	1
999579-16	100	69.2163	69.2692	69.2689	0.0003	No	0.0526	526.0	25.0	526.0	1

Calculation as follows:

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

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

B = weight of dish in grams.

C = mL of sample filtered.

RL= reporting limit.

ND = not detected (below the reporting limit)

Analyst Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

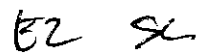
TDS/EC CHECK

Batch: 01TDS12C

Date Calculated: 1/19/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
999486-9	909	0.59	590.85	0.90
999511	7130	0.87	4634.5	1.34
999549-1	351	0.58	228.15	0.90
999601	657	0.60	427.05	0.92
999579-1	4030	0.73	2619.5	1.12
999579-2	528	0.58	343.2	0.89
999579-3	6060	0.72	3939	1.10
999579-4	4140	0.74	2691	1.14
999579-5	4060	0.76	2639	1.18
999579-6	1560	0.67	1014	1.03
999601D	657	0.61	427.05	0.94
LCS				
999579-7	2710	0.70	1761.5	1.08
999579-9	1830	0.68	1189.5	1.04
999579-10	3380	0.71	2197	1.10
999579-11	3600	0.71	2340	1.09
999579-12	5520	0.74	3588	1.14
999579-13	4690	0.74	3048.5	1.13
999579-14	4550	0.78	2957.5	1.20
999579-15	7000	0.83	4550	1.28
999579-16	946	0.56	614.9	0.86





Calculations

Batch: 01TDS12H

Date Calculated: 1/31/12

[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

TDS/EC CHECK

Date Calculated: 1/31/12

[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-343]

COC Number

10 Days

TURNAROUND TIME

DATE 01/10/12

PAGE 1 OF 1

COMPANY E2	PROJECT NAME PG&E Topock	PHONE (530) 229-3303	FAX (530) 339-3303	ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612	P.O. NUMBER 424973-01.DM	TEAM 1	SAMPLERS SIGNATURE <i>C. Knapp</i>	DATE 01/10/12	TIME 14:37	DESCRIPTION Water	CG6 (218.6) Lab Filtered	Tot Metals (200.7) Cr, Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)	NUMBER OF CONTAINERS 3	COMMENTS PH = 6 (200.7)
SAMPLE I.D. SC-700B-WDR-343											TOTAL NUMBER OF CONTAINERS 3						

ALERT!!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD										SAMPLE CONDITIONS		
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	Signature (Received)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL	WARM	YES	NO
<i>C. Knapp</i>	C. Knapp	CH2M Hill	1-10-12 14:45	<i>Rafael Davila</i>	Rafael	CH2M Hill	1-10-12 14:45	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED				
<i>Rafael Davila</i>	Rafael Davila	CH2M Hill	1-10-12 22:30	<i>Linda</i>	Linda	CH2M Hill	1-10-12 22:30	<input type="checkbox"/>				
SPECIAL REQUIREMENTS:												
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	Signature (Received)	Printed Name	Company/ Agency	Date/ Time					
<i>Linda</i>	Linda	CH2M Hill	1-10-12 22:30	<i>Rafael Davila</i>	Rafael	CH2M Hill	1-10-12 22:30					

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
12/28/11	999308	7	5 mL	9.5	8:30 AM	GW
1/3/12	999359-1	7	5 mL	9.5	18:00	MG
	↓ -2	9.5	N/A	N/A	N/A	MG
1/4/12	999360-1	7	5 mL	9.5	10:45 AM	GW
	↓ -2	7	5 mL	↓	10:50 AM	GW
1/4/12	999362-1	7	5 mL	9.5	11:00 AM	GW
	↓ -2	↓	↓	↓	11:05 AM	↓
	↓ -3	↓	↓	↓	11:10 AM	↓
1/4/12	999380	7	5 mL	9.5	5:15 PM	GW
1/5/12	999416	7	5 mL	9.5	11:45 PM	MG
1/9/12	999460	7	5 mL	9.5	6:45 PM	MG
1/10/12	999462	9.5	N/A	N/A	N/A	GW
1/11/12	999512-1	9.5	N/A	N/A	N/A	GW
	↓ -2	↓	↓	↓	↓	↓
	↓ -3	↓	↓	↓	↓	↓
	↓ -4	↓	↓	↓	↓	↓
	↓ -5	↓	↓	↓	↓	↓
	↓ -6	↓	↓	↓	↓	↓
	↓ -7	↓	↓	↓	↓	↓
1/11/12	999513-1	9.5	N/A	N/A	N/A	GW
	↓ -2	↓	↓	↓	↓	↓
	↓ -3	↓	↓	↓	↓	↓
	↓ -4	↓	↓	↓	↓	↓
	↓ -6	↓	↓	↓	↓	↓
	↓ -11	↓	↓	↓	↓	↓
1/11/12	999511	7	5 mL	9.5	8:50 AM	GW
1/11/12	Dew + Buffer	9.5	N/A	N/A	N/A	GW
1/11/12	999553	7	5 mL	9.5	5 PM	GW
1/11/12	999513-15	9.5	N/A	N/A	N/A	GW
1/12/12	999514-1	9.5	N/A	N/A	N/A	GW
	↓	↓	↓	↓	↓	↓

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
999361	Sludge	-	01/01/12	M.M	TTLC	-
999303-2	↓	↓	↓	↓	↓	-
999319(1-2)	↓	↓	↓	↓	↓	-
999306(6-8)	<1	>2	1/6/12	ES	NO	yes 3.50pm
999347 (-16,23)	↓	↓	↓	↓	↓	↓
999379 (1-3)	↓	↓	↓	↓	↓	↓
999436	>1	<2	01/03/12	M.M	yes	-
999402	↓	↓	↓	↓	↓	-
999440	↓	↓	↓	↓	↓	-
999450(1-4)	↓	↓	↓	↓	↓	-
999462T(12)	>1	<2	01/10/12	M.M	yes	-
999513 (1-14)	<1	<2	01/13/12	M.M	yes	-
1/13/12 (1-4, 7-14) M.M	↓	↓	↓	↓	↓	-
999554(1-14)	↓	↓	↓	↓	↓	-
999569 (1-4)	↓	↓	↓	↓	↓	-
999578 (1-6)	↓	↓	↓	↓	↓	-
999579 (1-7, 9-14)	↓	↓	↓	↓	↓	-
999511	<1	>2 (6)	01/13/12	M.M	yes	yes
1/13/12 M.M	<1	<2	12/22/11	M.M	yes	-
999249 (1-2)	↓	↓	↓	↓	↓	-
999247	↓	↓	↓	↓	↓	-
999248 (1-3)	↓	↓	↓	↓	↓	-
999250 (1-10)	↓	↓	↓	↓	↓	-
999604 (1-6)	<1	<2	01/16/12	M.M	yes	-
999605 (1-4, 6-11)	↓	↓	↓	↓	↓	-
999576	>1	>2	01/16/12	M.M	yes	-
999577	↓	↓	↓	↓	↓	-
999593	↓	↓	↓	↓	↓	-
999623 (1-2)	<1	<2	01/17/12	M.M	yes	-
999624 (1-8)	↓	↓	↓	↓	↓	-
998020 (1-8)	Plankts	-	01/17/12	M.M	yes	TTLC
999635	>1	<2	01/18/12	M.M	↓	↓
999649	<1	>2	↓	↓	↓	-
999650 (1-10)	↓	<2	↓	↓	↓	-
999651 (1-8, 9)	↓	↓	↓	↓	yes	-
999654 (1-3)	<1	<2	01/19/12	M.M	yes	-
999692	>1	<2	01/19/12	↓	yes	-
999699	↓	↓	↓	↓	↓	-
999700	↓	↓	↓	↓	↓	-
999701	↓	↓	↓	↓	↓	-
999549 (1-3)	<1	>2	1/19/12	KE	NO	(Y) 1/19/12 4pm
999639 (1-2)	↓	↓	↓	↓	↓	↓
999659 (1-4)	↓	↓	↓	↓	↓	↓
999708	↓	↓	↓	↓	↓	↓
999709	↓	↓	↓	↓	↓	↓
999710	↓	↓	↓	↓	↓	↓
999711	↓	↓	↓	↓	↓	↓
999712 (30, 9, 12)	↓	↓	↓	↓	↓	↓
999669 (2, 3)	<1	>2	1/19/12	KE	NO	(Y) 1/19/12 4pm
999682 (1, 10)	↓	↓	↓	↓	↓	↓



TRUESDAIL LABORATORIES, INC.

ALERT !!
Level III QC

Sample Integrity & Analysis Discrepancy Form

Client: EZ

Lab # 999511

Date Delivered: 1/10/12 Time: 10:30 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 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: _____

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

April 10, 2012

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

Revision 1: 04/10/12

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-344 PROJECT, GROUNDWATER MONITORING, TLI NO.: 999649

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-344 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 January 17, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

For Mona Nassimi
Manager, Analytical Services

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 999649

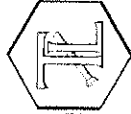
Date: February 3, 2012

Collected: January 17, 2012

Received: January 17, 2012

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	Maksim Gorbunov / George Wahba



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

Laboratory No.: 999649

Date Received: January 17, 2012

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
999649-001	SC-700B-WDR-344	E120.1	NONE	1/17/2012	11:00	EC	7110	umhos/cm	2.00
999649-001	SC-700B-WDR-344	E200.8	NONE-digested	1/17/2012	11:00	Chromium	ND	ug/L	1.0
999649-001	SC-700B-WDR-344	E200.8	NONE-digested	1/17/2012	11:00	Manganese	9.6	ug/L	5.0
999649-001	SC-700B-WDR-344	E218.6	LABFLT	1/17/2012	11:00	Chromium, hexavalent	ND	ug/L	1.0
999649-001	SC-700B-WDR-344	SM2130B	NONE	1/17/2012	11:00	Turbidity	ND	NTU	0.100
999649-001	SC-700B-WDR-344	SM2540C	NONE	1/17/2012	11:00	Total Dissolved Solids	4230	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:

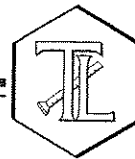
Results below 0.01ppm will have two (2) significant figures.

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

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 999649

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Printed 2/3/2012

Samples Received on 1/17/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-344	999649-001	01/17/2012 11:00	Water

Specific Conductivity - EPA 120.1

Batch 01EC12G

1/25/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999649-001 Specific Conductivity	umhos/cm	01/25/2012	1.00	0.0950	2.00	7110

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 999649-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7110	7110	0.00	0 - 10

Duplicate

Lab ID = 999810-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7220	7220	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	750.	706	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	944	997	94.7	90 - 110

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 2/3/2012

Chrome VI by EPA 218.6

Batch 01CrH12K

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999649-001 Chromium, Hexavalent	ug/L	01/19/2012 14:50	5.25	0.136	1.0	ND

Method Blank

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

Duplicate

Lab ID = 999623-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	3.07	3.08	0.202	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.203	0.200	101.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.86	5.00	97.2	90 - 110

Matrix Spike

Lab ID = 999623-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.00	8.08(5.00)	98.5	90 - 110

Matrix Spike

Lab ID = 999623-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.93	1.93(1.00)	99.4	90 - 110

Matrix Spike

Lab ID = 999623-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.89	5.93(5.00)	99.1	90 - 110

Matrix Spike

Lab ID = 999623-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.985	1.02(1.00)	96.0	90 - 110

Matrix Spike

Lab ID = 999624-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.07(1.00)	97.2	90 - 110

Matrix Spike

Lab ID = 999624-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.986	1.02(1.00)	96.8	90 - 110

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 2/3/2012

Matrix Spike						Lab ID = 999624-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.05(1.00)	96.7	90 - 110
Matrix Spike						Lab ID = 999624-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.06(1.00)	94.9	90 - 110
Matrix Spike						Lab ID = 999624-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.10(1.00)	94.1	90 - 110
Matrix Spike						Lab ID = 999624-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.77	7.88(5.00)	97.7	90 - 110
Matrix Spike						Lab ID = 999624-007
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.36	8.49(5.00)	97.4	90 - 110
Matrix Spike						Lab ID = 999624-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	18.0	18.3(10.0)	97.0	90 - 110
Matrix Spike						Lab ID = 999624-009
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.10(1.00)	92.0	90 - 110
Matrix Spike						Lab ID = 999649-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.25	5.49(5.25)	95.4	90 - 110
Matrix Spike						Lab ID = 999650-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.58	6.77(5.00)	96.2	90 - 110
Matrix Spike						Lab ID = 999650-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.60	6.80(5.00)	96.1	90 - 110
Matrix Spike						Lab ID = 999650-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.34	8.50(5.00)	96.9	90 - 110
Matrix Spike						Lab ID = 999650-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.00	1.04(1.00)	95.6	90 - 110

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 2/3/2012

Metals by EPA 200.8, Total

Batch 020112C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999649-001 Chromium	ug/L	02/02/2012 17:07	5.00	0.110	1.0	ND
Manganese	ug/L	02/02/2012 17:07	5.00	0.285	5.0	9.6

Method Blank

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

Duplicate

Lab ID = 999649-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	9.34	9.63	3.11	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.198	0.200	99.1	70 - 130
Manganese	ug/L	1.00	0.999	1.00	99.9	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	102.	100.	102.	85 - 115
Manganese	ug/L	5.00	96.2	100.	96.2	85 - 115

Matrix Spike

Lab ID = 999649-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	100.	100.(100.)	100.	75 - 125
Manganese	ug/L	5.00	99.1	110.(100.)	89.4	75 - 125

Matrix Spike Duplicate

Lab ID = 999649-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.6	100.(100.)	99.6	75 - 125
Manganese	ug/L	5.00	100.	110.(100.)	90.9	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.6	10.0	106	90 - 110
Manganese	ug/L	1.00	10.4	10.0	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.92	10.0	99.2	90 - 110

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 2/3/2012

Total Dissolved Solids by SM 2540 C

Batch 01TDS12E

1/23/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999649-001 Total Dissolved Solids	mg/L	01/23/2012	1.00	0.400	250.	4230

Method Blank

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

Duplicate

Lab ID = 999624-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	1430	1430	0.280	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	493	500.	98.6	90 - 110

Turbidity by SM 2130 B

Batch 01TUC12L

1/18/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999649-001 Turbidity	NTU	01/18/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 999670-002

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	8.18	8.00	102.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.19	8.00	102.	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 2/3/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 

Mona Nassimi

Manager, Analytical Services



b2 SC

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

Batch: 01TDS12E

Date Calculated: 1/25/12

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	68.5173	68.5176	68.5173	0.0003	No	0.0000	0.0	25.0	ND	1
999623-1	50	49.0260	49.125	49.1248	0.0002	No	0.0988	1976.0	50.0	1976.0	1
999623-2	20	49.3076	49.3787	49.3784	0.0003	No	0.0708	3540.0	125.0	3540.0	1
999624-1	50	50.3812	50.4211	50.421	0.0001	No	0.0398	796.0	50.0	796.0	1
999624-2	100	74.6832	74.7324	74.7321	0.0003	No	0.0489	489.0	25.0	489.0	1
999624-3	100	73.4979	73.5336	73.5335	0.0001	No	0.0356	356.0	25.0	356.0	1
999624-4	100	66.7165	66.755	66.7548	0.0002	No	0.0383	383.0	25.0	383.0	1
999624-5	50	51.4223	51.4576	51.4574	0.0002	No	0.0351	702.0	50.0	702.0	1
999624-6	100	68.1046	68.1576	68.1572	0.0004	No	0.0526	526.0	25.0	526.0	1
999624-7	50	50.4108	50.4469	50.4467	0.0002	No	0.0359	718.0	50.0	718.0	1
999624-8	50	49.8290	49.9004	49.9003	0.0001	No	0.0713	1426.0	50.0	1426.0	1
999624-8D	50	47.5133	47.5849	47.5846	0.0003	No	0.0713	1426.0	50.0	1426.0	1
LCS	100	72.8174	72.8668	72.8667	0.0001	No	0.0493	493.0	25.0	493.0	1
999649	10	65.5052	65.5475	65.5475	0.0000	No	0.0423	4230.0	250.0	4230.0	1
999659-1	100	75.4477	75.5034	75.5031	0.0003	No	0.0554	554.0	25.0	554.0	1
999659-2	100	68.8837	68.9423	68.9422	0.0001	No	0.0585	585.0	25.0	585.0	1
999659-3	100	65.6270	65.6796	65.6795	0.0001	No	0.0525	525.0	25.0	525.0	1
999659-4	100	67.7412	67.7928	67.7925	0.0003	No	0.0513	513.0	25.0	513.0	1
999674-1	50	72.9963	73.0622	73.0618	0.0004	No	0.0655	1310.0	50.0	1310.0	1
999674-2	50	50.6034	50.7363	50.7359	0.0004	No	0.1325	2650.0	50.0	2650.0	1
999674-3	20	51.4331	51.5105	51.5103	0.0002	No	0.0772	3860.0	125.0	3860.0	1
999740-2	200	104.2418	104.2589	104.2588	0.0001	No	0.0170	85.0	12.5	85.0	1
999740-4	100	92.0954	92.1077	92.1076	0.0001	No	0.0122	122.0	25.0	122.0	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: 01TDS12E

Date Calculated: 1/25/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
999623-1	2950	0.67	1917.5	1.03
999623-2	4780	0.74	3107	1.14
999624-1	1230	0.65	799.5	1.00
999624-2	746	0.66	484.9	1.01
999624-3	529	0.67	343.85	1.04
999624-4	515	0.74	334.75	1.14
999624-5	1031	0.68	670.15	1.05
999624-6	815	0.65	529.75	0.99
999624-7	1064	0.67	691.6	1.04
999624-8	2040	0.70	1326	1.08
999624-8D	2040	0.70	1326	1.08
LCS				
999649	7160	0.59	4654	0.91
999659-1	885	0.63	575.25	0.96
999659-2	988	0.59	642.2	0.91
999659-3	846	0.62	549.9	0.95
999659-4	822	0.62	534.3	0.96
999674-1	1855	0.71	1205.75	1.09
999674-2	3720	0.71	2418	1.10
999674-3	5070	0.76	3295.5	1.17
999740-2	152	0.56	98.8	0.86
999740-4	202	0.60	131.3	0.93





TRUESDAIL LABORATORIES, INC.
14201 Franklin Avenue, Tustin, CA 92780-7008
(714) 730-6239 FAX: (714) 730-6462
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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-344]

COC Number

10 Days

TURNAROUND TIME

DATE 01/17/12

PAGE 1 OF 1

999649

COMPANY	E2	DATE	01/17/12	TIME	11:00	DESCRIPTION	Water					
PROJECT NAME	PG&E Topock											
PHONE	(530) 229-3303	FAX	(530) 339-3303									
ADDRESS	155 Grand Ave Ste 1000											
	Oakland, CA 94612											
P.O. NUMBER	424973.01.DM	TEAM	1									
SAMPLERS (SIGNATURE)												
SAMPLE I.D.	SC-700B-WDR-344	DATE	01/17/12	TIME	11:00	DESCRIPTION	Water					
		C6 (218.6) Lab Filtered	X	Total Metals (200.7) Cr, Mn	X	Specific Conductance (120.1)	X	TDS (SM2540C)	X	Turbidity (SM2130)	X	COMMENTS
		NUMBER OF CONTAINERS										
		3										
		TOTAL NUMBER OF CONTAINERS										
		3										

ALERT!!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL	WARM	
	Rafael Davila	Company/ Agency	1-17-12 15:30	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.90 °C
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES	NO	<input checked="" type="checkbox"/>
	Rafael Davila	Company/ Agency	1-17-12 15:30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:			
	Rafael Davila	Company/ Agency	1-17-12 21:30				
Signature (Received)	Printed Name	Company/ Agency	Date/ Time				
	Rafael Davila	Company/ Agency	1-17-12 21:30				
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time				
	Rafael Davila	Company/ Agency	1-17-12 21:30				
Signature (Received)	Printed Name	Company/ Agency	Date/ Time				
	Rafael Davila	Company/ Agency	1-17-12 21:30				

042

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
1/17/12	999624-6	9.5	N/A	N/A	N/A	Gw
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
1/18/12	999649	7	5 mL	9.5	9 AM	Gw
1/18/12	999650-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
↓	↓ -11	↓	↓	↓	↓	↓
1/18/12	999651-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
1/19/12	999674-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
1/19/12	999702-1	7	5 mL	9.5	5:30 PM	Gw
↓	↓ -2	↓	↓	↓	5:40 PM	↓

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
999361	Sludge	-	01/01/12	M.M	TTLC	-
999303-2	↓	↓	↓	↓	↓	-
999319(1-2)	↓	↓	↓	↓	↓	-
999306(6-8)	<1	>2	1/6/12	ES	NO	yes 3.58 ppm
999347 (-16.23)	↓	↓	↓	↓	↓	↓
999379 (1-3)	↓	↓	↓	↓	↓	↓
999436	>1	<2	01/07/12	M.M	yes	-
999402	↓	↓	↓	↓	↓	-
999440	↓	↓	↓	↓	↓	-
999450(1-4)	↓	↓	↓	↓	↓	-
999462 T/15	>1	<2	01/10/12	M.M	yes	-
999513 (1-14)	<1	<2	01/13/12	M.M	yes	-
1/13/12 (1-7, 14) M.M	↓	↓	↓	↓	↓	-
999554 (1-14)	↓	↓	↓	↓	↓	-
999569 (1-4)	↓	↓	↓	↓	↓	-
999578 (1-6)	↓	↓	↓	↓	↓	-
999579 (1-7, 9-10)	↓	↓	↓	↓	↓	-
999511	<1	>2 (6)	01/13/12	M.M	yes	yes
1/13/12 M.M	<1	<2	12/22/11	M.M	yes	-
999249 (1-2)	↓	↓	↓	↓	↓	-
999247	↓	↓	↓	↓	↓	-
999248 (1-3)	↓	↓	↓	↓	↓	-
999250 (1-10)	↓	↓	↓	↓	↓	-
999604 (1-6)	<1	<2	01/16/12	M.M	yes	-
999605 (1-4, 6-8)	↓	↓	↓	↓	↓	-
999576	>1	>2	01/16/12	M.M	yes	-
999577	↓	↓	↓	↓	↓	-
999593	↓	↓	↓	↓	↓	-
999623 (1-2)	<1	<2	01/17/12	M.M	yes	-
999624 (1-8)	↓	↓	↓	↓	↓	-
998020 (1-8)	Plankts	-	01/18/12	M.M	yes	TTLC
999635	>1	<2	01/18/12	M.M	↓	↓
999649	<1	>2	↓	↓	↓	- yes
999650 (1-10)	↓	<2	↓	↓	↓	-
999651 (1-8, 9)	↓	↓	↓	↓	yes	-
999654 (1-3)	<1	<2	01/19/12	M.M	yes	-
999692	>1	<2	01/19/12	↓	yes	-
999699	↓	↓	↓	↓	↓	-
999700	↓	↓	↓	↓	↓	-
999701	↓	↓	↓	↓	↓	-
999549 (1-3)	<1	>2	1/19/12	↓	NO	(Y) 1/19/12 04pm
999639 (1-2)	↓	↓	↓	↓	↓	↓
999659 (1-11)	↓	↓	↓	↓	↓	↓
999708	↓	↓	↓	↓	↓	↓
999709	↓	↓	↓	↓	↓	↓
999710	↓	↓	↓	↓	↓	↓
999711	↓	↓	↓	↓	↓	↓
999712 (369, 12)	↓	↓	↓	↓	↓	↓
999669 (-2, 3)	<1	>2	1/19/12	PA	NO	(Y) 1/19/12 09pm
999669 (1, 10)	↓	↓	↓	↓	↓	↓



TRUESDAIL LABORATORIES, INC.



Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 999649

Date Delivered: 1/17/11 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) 4.9 °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 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: Stex

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

April 10, 2012

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

Revision 1: 04/10/12

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-345 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 999810

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-345 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 January 24, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

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

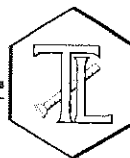
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

For Mona Nassimi
Manager, Analytical Services

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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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

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

Laboratory No.: 999810

Date: February 2, 2012

Collected: January 24, 2012

Received: January 24, 2012

ANALYST LIST

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



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.: 999810
Date Received: January 24, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999810-001	SC-700B-WDR-345	E120.1	NONE	1/24/2012	11:15	EC	7220	umhos/cm	2.00
999810-001	SC-700B-WDR-345	E200.8	NONE-digested	1/24/2012	11:15	Chromium	ND	ug/L	1.0
999810-001	SC-700B-WDR-345	E200.8	NONE-digested	1/24/2012	11:15	Manganese	19.3	ug/L	1.0
999810-001	SC-700B-WDR-345	E218.6	LABFLT	1/24/2012	11:15	Chromium, hexavalent	ND	ug/L	1.0
999810-001	SC-700B-WDR-345	SM2130B	NONE	1/24/2012	11:15	Turbidity	ND	NTU	0.100
999810-001	SC-700B-WDR-345	SM2540C	NONE	1/24/2012	11:15	Total Dissolved Solids	4290	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:

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

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

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

TRUESDAIL LABORATORIES, INC.

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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

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 999810

Page 1 of 9

Printed 2/2/2012

Samples Received on 1/24/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-345	999810-001	01/24/2012 11:15	Water

Specific Conductivity - EPA 120.1

Batch 01EC12G

1/25/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999810-001 Specific Conductivity	umhos/cm	01/25/2012	1.00	0.0950	2.00	7220

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND
Duplicate			

Lab ID = 999649-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7110	7110	0.00	0 - 10
Duplicate						

Lab ID = 999810-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7220	7220	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	750	706	106	90 - 110
MRCVS - Primary						

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	944	998	94.6	90 - 110

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 2/2/2012

Chrome VI by EPA 218.6

Batch 01CrH12P

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999810-001 Chromium, Hexavalent	ug/L	01/27/2012 07:52	5.25	0.136	1.0	ND

Method Blank

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

Duplicate

Lab ID = 999809-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.86	1.85	0.302	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.192	0.200	96.1	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.88	5.00	97.6	90 - 110

Matrix Spike

Lab ID = 999809-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.74	6.85(5.00)	97.9	90 - 110

Matrix Spike

Lab ID = 999809-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.64	7.84(5.00)	96.0	90 - 110

Matrix Spike

Lab ID = 999809-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.0	17.4(10.0)	95.4	90 - 110

Matrix Spike

Lab ID = 999810-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.14	5.41(5.25)	94.8	90 - 110

Matrix Spike

Lab ID = 999810-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.13	1.14(1.06)	98.9	90 - 110

Matrix Spike

Lab ID = 999811-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	25.0	447.	458(250.)	95.8	90 - 110

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 2/2/2012

Metals by EPA 200.8, Total

Batch 012812A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999810-001 Chromium	ug/L	01/28/2012 19:57	5.00	0.110	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 999810-001

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

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.257	0.200	129.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	102.	100.	102.	85 - 115

Matrix Spike

Lab ID = 999810-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	102.	100.(100.)	102.	75 - 125

Matrix Spike Duplicate

Lab ID = 999810-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	108.	100.(100.)	108.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.63	10.0	96.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.64	10.0	96.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.77	10.0	97.7	90 - 110

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 2/2/2012

Metals by EPA 200.8, Total

Batch 013012A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999810-001 Manganese	ug/L	01/30/2012 16:21	5.00	0.285	1.0	19.3

Method Blank

Parameter	Unit	DF	Result
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 999810-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Manganese	ug/L	5.00	20.3	19.3	5.15	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	0.161	0.200	80.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	5.00	93.4	100.	93.4	85 - 115

Matrix Spike

Lab ID = 999810-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Manganese	ug/L	5.00	116.	119.(100.)	96.5	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.74	10.0	97.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.42	10.0	94.2	90 - 110

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.45	10.0	94.5	80 - 120

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 9

Project Number: 424973.01.DM

Printed 2/2/2012

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.66	10.0	96.6	80 - 120

Total Dissolved Solids by SM 2540 C

Batch 01TDS12H

1/27/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999810-001 Total Dissolved Solids	mg/L	01/27/2012	1.00	0.400	250.	4290

Method Blank

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

Duplicate

Lab ID = 999810-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4110	4290	4.28	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

Turbidity by SM 2130 B

Batch 01TUC12Q

1/25/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999810-001 Turbidity	NTU	01/25/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 999810-001

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.13	8.00	102.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.03	8.00	100.	90 - 110

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project


Page 9 of 9

Project Number: 424973.01.DM

Printed 2/2/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi
Manager, Analytical Services



Calculations

Date Calculated: 1/31/12

Calculation as follows:

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

C = mL of sample filtered.

ND = not detected (below the reporting limit)



Reviewer Signature



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

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-345]

COC Number

10 Days

TURNAROUND TIME

DATE 01/24/12 PAGE 1 OF 1

999 810

COMPANY	E2	PROJECT NAME	PG&E Topock	PHONE	(530) 229-3303	FAX	(530) 339-3303	ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612	P.O. NUMBER	424973.01.DM	TEAM	1	SAMPLERS (SIGNATURE)		SAMPLE I.D.	SC-700B-WDR-345	DATE	01/24/12	TIME	11:15	DESCRIPTION	Water	Cb (218.6) Lab Filtered	X	Total Metals (200.7) Cr, Mn	X	Specific Conductance (120.1)	X	TDS (SM2540C)	X	Turbidity (SM2130)	X	NUMBER OF CONTAINERS	3	COMMENTS	PH=6.200.7
																		TOTAL NUMBER OF CONTAINERS		3																	

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	RECEIVED	COOL	WARM	
	Robert Davis	PG&E	1-24-12 15:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.9°C
Signature (Received)	Printed Name	Company/Agency	Date/Time	CUSTODY SEALED	YES	NO	<input checked="" type="checkbox"/>
	Robert Davis	PG&E	1-24-12 15:30	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	SPECIAL REQUIREMENTS:			
	Robert Davis	PG&E	1-24-12 15:30				
Signature (Received)	Printed Name	Company/Agency	Date/Time				
	Robert Davis	PG&E	1-24-12 15:30				
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time				
	Robert Davis	PG&E	1-24-12 15:30				
Signature (Received)	Printed Name	Company/Agency	Date/Time				
	Robert Davis	PG&E	1-24-12 15:30				

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
1/19/12	999703-1	7	5 mL	9.5	5:50 pm	Gw
↓	↓ -2	↓	↓	↓	6:00 pm	↓
1/25/12	999809-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
1/25/12	999810	7	5 mL	9.5	9:30 Am	Gw
1/25/12	999811-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
1/27/12	999852-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
1/27/12	999853-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
1/27/12	999360-1	7	5 mL	9.5	1 pm	Gw
↓	999362-1	↓	↓	↓	1:10 pm	↓
↓	↓ -3	↓	↓	↓	1:15 pm	↓
1/27/12	999851-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
1/27/12	999854-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓

NW 1/24/12
CA

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
999675(1-4)	Solid	-	01/20/12	M.M	Yes	STLC
999739(1-4)	Solid	-	01/23/12	M.M	Yes	TTLC
999733(1-2)	>1	<2	01/23/12	M.M	Yes	-
999734	↓	↓	↓	↓	↓	-
999735(1-4)	↓	↓	↓	↓	↓	-
999757(1-2)	>1	<2	01/24/12	M.M	Yes	-
999809(1-4)	<1	<2	01/25/12	M.M	Yes	-
999810(1)	↓	>2	↓	↓	↓	Yes
999811(1-2)	↓	<2	↓	↓	↓	-
999801(-3-4)	<1	>2	1/27/12	KK	NO	Yes @ 11 am
999835(1-3)	↓	↓	↓	↓	↓	↓
999836(-10-12)	↓	↓	↓	↓	↓	↓
999859	↓	↓	↓	↓	↓	↓
999860	>1	>2	1/27/12	KK	Yes	↓
999847 (2 bottles same sample)	↓	<2	↓	↓	↓	↓
999851(1-10)	<1	<2	01/27/12	M.M	Yes	-
999852(1-2)	↓	↓	↓	↓	↓	-
999853(1-3, 4)	↓	↓	↓	↓	↓	-
999854(1-5, 8-10)	↓	↓	↓	↓	↓	-
999855(18, 9, 10)	↓	↓	↓	↓	↓	-
999856(1-6)	↓	↓	↓	↓	↓	-
999857(1-3)	↓	↓	↓	↓	↓	-
999858(35, 8)	↓	↓	↓	↓	↓	-
999850(1-5)	Soil	-	01/30/12	M.M	Yes	STLC (Pre H ₂ O)
999893(1-6)	<1	<2	↓	↓	↓	-
999894(1-3, 5-7)	↓	↓	↓	↓	↓	-
999895(1-7, 6, 7)	↓	↓	↓	↓	↓	-
999896(1-10)	↓	↓	↓	↓	↓	-
999906(1-20)	<1	>2	1/31/12	ES	NO	-
999912(1-6)	<1	<2	1/31/12	M.M	Yes	-
999913(16, 8, 9)	↓	↓	↓	↓	↓	-
999914(1-8)	↓	↓	↓	↓	↓	-
999915(1-8)	↓	↓	↓	↓	↓	-
999920	Solid	-	1/31/12	M.M	Yes	TTLC
999943(1-9)	<1	<2	02/01/12	M.M	Yes	-
999944(1-3-9)	↓	↓	↓	↓	↓	-
999945(1-9)	↓	↓	↓	↓	↓	-
999946(1-9)	↓	↓	↓	↓	↓	-
999947(1-5)	↓	↓	↓	↓	↓	-
999948	↓	>2	↓	↓	↓	Yes @ 11:00



Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 999810

Date Delivered: 01/24/12 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 Strubinsky

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

April 10, 2012

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

Revision 1: 04/10/12

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-346 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 999948

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-346 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 January 31, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

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

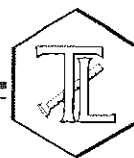
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

For Mona Nassimi
Manager, Analytical Services

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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

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

Attention: Shawn Duffy

Laboratory No.: 999948

Sample: One (1) Groundwater Sample

Date: February 15, 2012

Project Name: PG&E Topock Project

Collected: January 31, 2012

Project No.: 424973.01.DM

Received: January 31, 2012

ANALYST LIST

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



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.: 999948
Date Received: January 31, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999948-001	SC-700B-WDR-346	E120.1	NONE	1/31/2012	14:00	EC	7190	umhos/cm	2.00
999948-001	SC-700B-WDR-346	E200.8	NONE-digested	1/31/2012	14:00	Chromium	ND	ug/L	1.0
999948-001	SC-700B-WDR-346	E200.8	NONE-digested	1/31/2012	14:00	Manganese	16.7	ug/L	5.0
999948-001	SC-700B-WDR-346	E218.6	LABFLT	1/31/2012	14:00	Chromium, hexavalent	ND	ug/L	1.0
999948-001	SC-700B-WDR-346	SM2130B	NONE	1/31/2012	14:00	Turbidity	ND	NTU	0.100
999948-001	SC-700B-WDR-346	SM2540C	NONE	1/31/2012	14:00	Total Dissolved Solids	4240	mg/L	250

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

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

TRUESDAIL LABORATORIES, INC.

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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

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 999948

Page 1 of 8

Printed 2/15/2012

Samples Received on 1/31/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-346	999948-001	01/31/2012 14:00	Water

Specific Conductivity - EPA 120.1

Batch 02EC12A

2/1/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999948-001 Specific Conductivity	umhos/cm	02/01/2012	1.00	0.0950	2.00	7190

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 999948-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7190	7190	0.00	0 - 10

Lab Control Sample

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

Lab Control Sample Duplicate

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

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	721	706	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	969	997	97.2	90 - 110

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008



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 8

Project Number: 424973.01.DM

Printed 2/15/2012

Chrome VI by EPA 218.6

Batch 02CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999948-001 Chromium, Hexavalent	ug/L	02/01/2012 11:30	5.25	0.136	1.0	ND

Method Blank

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

Duplicate

Lab ID = 999857-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	3.76	3.71	1.33	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.239	0.200	119.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.93	5.00	98.5	90 - 110

Matrix Spike

Lab ID = 999857-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.50	8.71(5.00)	95.9	90 - 110

Matrix Spike

Lab ID = 999893-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.54	6.62(5.00)	98.4	90 - 110

Matrix Spike

Lab ID = 999893-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.955	1.00(1.00)	95.5	90 - 110

Matrix Spike

Lab ID = 999893-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.62	1.68(1.00)	93.7	90 - 110

Matrix Spike

Lab ID = 999893-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.64	1.69(1.00)	94.9	90 - 110

Matrix Spike

Lab ID = 999893-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.982	1.00(1.00)	98.2	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 2/15/2012

Matrix Spike

Lab ID = 999896-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.18	9.54(5.00)	92.7	90 - 110

Matrix Spike

Lab ID = 999896-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.70	7.97(5.00)	94.6	90 - 110

Matrix Spike

Lab ID = 999896-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.08	9.42(5.00)	93.3	90 - 110

Matrix Spike

Lab ID = 999896-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.77	7.82(5.00)	99.0	90 - 110

Matrix Spike

Lab ID = 999896-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.79	7.86(5.00)	98.6	90 - 110

Matrix Spike

Lab ID = 999896-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.39	8.45(5.00)	98.8	90 - 110

Matrix Spike

Lab ID = 999896-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.42	8.42(5.00)	99.9	90 - 110

Matrix Spike

Lab ID = 999896-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.63	8.47(5.00)	103.	90 - 110

Matrix Spike

Lab ID = 999948-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.42	5.60(5.25)	96.5	90 - 110

Matrix Spike

Lab ID = 999948-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.16	1.15(1.06)	101.	90 - 110

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00	98.1	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



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 2/15/2012

Metals by EPA 200.8, Total

Batch 020612C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999948-001 Chromium	ug/L	02/07/2012 16:17	5.00	0.110	1.0	ND
Manganese	ug/L	02/07/2012 16:17	5.00	0.285	5.0	16.7

Method Blank

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

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.226	0.200	113.	70 - 130
Manganese	ug/L	1.00	0.904	1.00	90.4	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	96.2	100.	96.2	85 - 115
Manganese	ug/L	5.00	91.4	100.	91.4	85 - 115

Matrix Spike

Lab ID = 999948-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.7	100.(100.)	99.7	75 - 125
Manganese	ug/L	5.00	115.	117.(100.)	98.1	75 - 125

Matrix Spike Duplicate

Lab ID = 999948-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.7	100.(100.)	99.7	75 - 125
Manganese	ug/L	5.00	114.	117.(100.)	97.1	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.6	10.0	106.	90 - 110
Manganese	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.77	10.0	97.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.98	10.0	99.8	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 2/15/2012

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	10.3	10.0	103	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.95	10.0	99.5	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	11.1	10.0	111	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	10.8	10.0	108.	80 - 120

Total Dissolved Solids by SM 2540 C

Batch 02TDS12B

2/2/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999948-001 Total Dissolved Solids	mg/L	02/01/2012	1.00	0.400	250.	4240

Method Blank

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

Duplicate

Lab ID = 999858-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	1080	1060	1.50	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	489	500.	97.8	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 2/15/2012

Turbidity by SM 2130 B

Batch 02TUC12A

2/1/2012

Parameter	Unit	Analyzed	DF	MDL	RL	Result
999948-001 Turbidity	NTU	02/01/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 999948-001

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.42	8.00	105.	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

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.



Mona Nassimi

Manager, Analytical Services

E2 SC



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 02TDS12B

Date Calculated: 2/6/12

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	65.7040	65.7045	65.7044	0.0001	No	0.0004	4.0	25.0	ND	1
999858-1	100	67.2171	67.2670	67.2670	0.0000	No	0.0499	499.0	25.0	499.0	1
999858-2	100	73.6035	73.6531	73.6527	0.0004	No	0.0492	492.0	25.0	492.0	1
999858-3	100	74.1777	74.2254	74.2252	0.0002	No	0.0475	475.0	25.0	475.0	1
999858-4	100	67.7787	67.8349	67.8345	0.0004	No	0.0558	558.0	25.0	558.0	1
999858-5	100	112.9702	113.0293	113.0289	0.0004	No	0.0587	587.0	25.0	587.0	1
999858-6	50	50.1276	50.182	50.1818	0.0002	No	0.0542	1084.0	50.0	1084.0	1
999858-7	50	47.6166	47.6718	47.6717	0.0001	No	0.0551	1102.0	50.0	1102.0	1
999858-8	50	49.6949	49.7485	49.7481	0.0004	No	0.0532	1064.0	50.0	1064.0	1
999607	100	69.4853	69.5036	69.5036	0.0000	No	0.0183	183.0	25.0	183.0	1
* 999839-1	95	74.8698	74.8698	74.8698	0.0000	No	0.0000	0.0	26.3	ND	1
999858-8D	50	49.2922	49.3460	49.3460	0.0000	No	0.0538	1076.0	50.0	1076.0	1
LCS	100	112.8997	112.9489	112.9486	0.0003	No	0.0489	489.0	25.0	489.0	1
999839-2	180	108.5818	108.5852	108.5852	0.0000	No	0.0034	18.9	13.9	18.9	1
999894-1	50	67.2059	67.2396	67.2394	0.0002	No	0.0335	670.0	50.0	670.0	1
999894-2	50	76.5508	76.585	76.586	0.0000	No	0.0352	704.0	50.0	704.0	1
999894-3	100	69.2152	69.2533	69.2533	0.0000	No	0.0381	381.0	25.0	381.0	1
999894-5	50	67.7913	67.8449	67.8449	0.0000	No	0.0536	1072.0	50.0	1072.0	1
999894-6	50	66.8106	66.8671	66.8669	0.0002	No	0.0563	1126.0	50.0	1126.0	1
999895-3	50	69.3491	69.3948	69.3948	0.0000	No	0.0457	914.0	50.0	914.0	1
999895-4	50	78.3855	78.4908	78.4907	0.0001	No	0.1052	2104.0	50.0	2104.0	1
999895-6	50	71.0912	71.1404	71.14	0.0004	No	0.0488	976.0	50.0	976.0	1
999948	10	49.8853	49.9279	49.9277	0.0002	No	0.0424	4240.0	250.0	4240.0	1

Calculation as follows:

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

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

B = weight of dish in grams.

C = mL of sample filtered.

RL = reporting limit.

ND = not detected (below the reporting limit)

Analyst Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

* not enough spi

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 02TDS12B

Date Calculated: 2/6/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
999858-1	827	0.60	537.55	0.93
999858-2	811	0.61	527.15	0.93
999858-3	749	0.63	486.85	0.98
999858-4	909	0.61	590.85	0.94
999858-5	927	0.63	602.55	0.97
999858-6	1579	0.69	1026.35	1.06
999858-7	1600	0.69	1040	1.06
999858-8	1595	0.67	1036.75	1.03
999607	334	0.55	217.1	0.84
999839-1	36.8	ND	23.92	ND
999858-8D	1595	0.67	1036.75	1.04
LCS				
999839-2	106.1	0.18	68.965	0.27
999894-1	1140	0.59	741	0.90
999894-2	1140	0.62	741	0.95
999894-3	624	0.61	405.6	0.94
999894-5	1616	0.66	1050.4	1.02
999894-6	1648	0.68	1071.2	1.05
999895-3	1472	0.62	956.8	0.96
999895-4	3000	0.70	1950	1.08
999895-6	1500	0.65	975	1.00
999948	7190	0.59	4673.5	0.91



Rec'd 1/31/12
S 999948

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

CHAIN OF CUSTODY RECORD

[IM3] Plant-WDR-346]

COC Number

10 Days

TURNAROUND TIME

DATE 01/31/12

PAGE 1 OF 1

999948

COMPANY	E2	PROJECT NAME	PG&E Topock	PHONE	(530) 229-3303	FAX	(530) 339-3303	ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612	P.O. NUMBER	424973.01.DM	TEAM	1	SAMPLERS (SIGNATURE)		SAMPLE I.D.	SC-700B-WDR-346	DATE	01/31/12	TIME	1400	DESCRIPTION	Water	Cr6 (218.6) Lab Filtered	X	Total Metals (200.7) Cr, Mn	X	Specific Conductance (120.1)	X	TDS (SM2540C)	X	Turbidity (SM2130)	X	NUMBER OF CONTAINERS	3	COMMENTS	
																		TOTAL NUMBER OF CONTAINERS	3		(1002) 9 M = 6 (200.7)																

ALERT!!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL	WARM	4.4 °C
	Rafael Davila	Company/ Agency	1-31-12 15:30	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES	NO	<input checked="" type="checkbox"/>
	Rafael Davila	Company/ Agency	1-31-12 15:30	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:			
	Rafael Davila	Company/ Agency	1-31-12 15:30				
Signature (Received)	Printed Name	Company/ Agency	Date/ Time				
	Rafael Davila	Company/ Agency	1-31-12 15:30				
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time				
	Rafael Davila	Company/ Agency	1-31-12 15:30				
Signature (Received)	Printed Name	Company/ Agency	Date/ Time				
	Rafael Davila	Company/ Agency	1-31-12 15:30				

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
1/31/12	999913-8	9.5	N/A	N/A	N/A	MG
	-9					
	-10					
	-11					
	-12					
	-13					
	-14					
1/31/12	999914-1	9.5	N/A	N/A	N/A	N/A
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	999915-1					
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
2/1/12	999948	7.0	5mL	9.5	9:00	MG
	999943-1	9.5	N/A	N/A	N/A	MG MG
	-2					
	-3					
	-4					
	-5					

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
999675(1-4)	Solid	-	01/20/12	M.M	Yes	STLC
999739(1-4)	Solid	-	01/23/12	M.M	Yes	TTLC
999733(1-2)	>1	<2	01/23/12	M.M	Yes	-
999734	↓	↓	↓	↓	↓	-
999735(1-4)	↓	↓	↓	↓	↓	-
999757(1-2)	>1	<2	01/24/12	M.M	Yes	-
999809(1-4)	<1	<2	01/25/12	M.M	Yes	-
999810(1)	↓	>2	↓	↓	↓	Yes
999811(1-2)	↓	<2	↓	↓	↓	-
999801(-3-4)	<1	>2	1/27/12	KK	NO	Yes @ 11am
999835(1-3)	↓	↓	↓	↓	↓	↓
999836(-10-12)	↓	↓	↓	↓	↓	↓
999859	↓	↓	↓	↓	↓	↓
999860	>1	>2	1/27/12	KK	Yes	-
999847 (2 bottles same sample)	↓	<2	↓	↓	↓	-
999851(1-10)	<1	<2	01/27/12	M.M	Yes	-
999852(1-2)	↓	↓	↓	↓	↓	-
999853(1,3,4)	↓	↓	↓	↓	↓	-
999854(1-5, 4-10)	↓	↓	↓	↓	↓	-
999855(18, 9, 10)	↓	↓	↓	↓	↓	-
999856(1-6)	↓	↓	↓	↓	↓	-
999857(1-3)	↓	↓	↓	↓	↓	-
999858(3,5,8)	↓	↓	↓	↓	↓	-
999850(1-5)	Solid	-	01/30/12	M.M	Yes	STLC (Pure H ₂ O)
999893(1-6)	<1	<2	↓	↓	↓	-
999894(1-3, 5-7)	↓	↓	↓	↓	↓	-
999895(1-4, 6-7)	↓	↓	↓	↓	↓	-
999896(1-10)	↓	↓	↓	↓	↓	-
999906(1,2)	<1	>2	1/31/12	ES	NO	-
999912(1-6)	<1	<2	1/31/12	M.M	Yes	-
999913(1,6,8,10)	↓	↓	↓	↓	↓	-
999914(1-8)	↓	↓	↓	↓	↓	-
999915(1-8)	↓	↓	↓	↓	↓	-
999920	Solid	-	1/31/12	M.M	Yes	TTLC
999943(1-9)	<1	<2	02/01/12	M.M	Yes	-
999944(1,3-9)	↓	↓	↓	↓	↓	-
999945(1-9)	↓	↓	↓	↓	↓	-
999946(1-9)	↓	↓	↓	↓	↓	-
999947(1-5)	↓	↓	↓	↓	↓	-
999948	↓	>2	↓	↓	↓	Yes @ 11:00
999966(1-11)	<1	<2	02/02/12	M.M	Yes	-
999967(1-10)	↓	↓	↓	↓	↓	-
999968(1-7, 9-12)	↓	↓	↓	↓	↓	-
999969(1-8)	↓	↓	↓	↓	↓	-
999966(1-4)	<1	<2	02/03/12	M.M	Yes	-
999997(1-11)	↓	↓	↓	↓	↓	-
999995(1-9)	↓	↓	↓	↓	↓	-
999998(1-8)	↓	↓	↓	↓	↓	-
999999(1-9, 10, 11)	↓	↓	↓	↓	↓	-



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2 Lab # 999948

Date Delivered: 01/31/12 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)? 4.4°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 ☒ N/A
12. Were samples pH checked? pH = 8.0 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: L. Shabunsky

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	1-3-12	1330	1-3-12	1333	METER #1	1-3-12	1:00	-55.9	RON PHELPS	7.0

Notes:

SC-100B	1-3-12	1330	1-3-12	1335	METER #1	1-3-12	1:00	-55.9	RON PHELPS	7.1
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Notes:

SC-701	1-3-12	1330	1-3-12	1337	METER #1	1-3-12	1:00	-55.9	RON PHELPS	7.5
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Notes:

SC-700B	1-10-12	14:37	1-10-12	1442	METER #1	1-10-12	01:00	-55.9	P. Kuyt	7.2
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Notes:

SC-700B	1-17-12	11:00	1-17-12	11:05	METER #1	1-17-12	1:00	-56.2	RON PHELPS	7.0
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Notes:

SC-700B	1-24-12	11:15	1-24-12	11:18	METER #1	1-24-12	2:40	-56.1	RON PHELPS	7.2
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Notes:

SC-700B	1-31-12	1400	1-31-12	1405	METER #1	1-31-12	1:00	-56.0	RON PHELPS	7.0
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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

March 5, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-347 PROJECT, GROUNDWATER
MONITORING,
TLI NO.: 900056


Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-347 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.

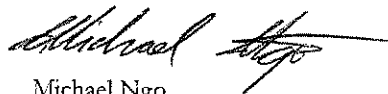
The samples were received and delivered with the chain of custody on February 7, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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.

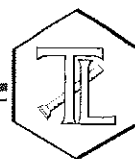
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


to, Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

Attention: Shawn Duffy

Sample: Two (2) Groundwaters

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 900056

Date: March 5, 2012

Collected: February 7, 2012

Received: February 7, 2012

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 / Bita Emami
EPA 218.6	Hexavalent Chromium	George Wahba / Maksim Gorbunov



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

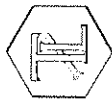
Attention: Shawn Duffy

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

Laboratory No.: 900056
Date Received: February 7, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
900056-001	SC-700B-WDR-347	E120.1	NONE	2/7/2012	12:45	EC	6970	umhos/cm	2.00
900056-001	SC-700B-WDR-347	E200.7	NONE-digested	2/7/2012	12:45	Aluminum	ND	ug/L	50.0
900056-001	SC-700B-WDR-347	E200.7	NONE-digested	2/7/2012	12:45	BORON	1080	ug/L	200
900056-001	SC-700B-WDR-347	E200.7	NONE-digested	2/7/2012	12:45	Iron	ND	ug/L	20.0
900056-001	SC-700B-WDR-347	E200.7	NONE-digested	2/7/2012	12:45	Nickel	ND	ug/L	10.0
900056-001	SC-700B-WDR-347	E200.7	NONE-digested	2/7/2012	12:45	Zinc	ND	ug/L	10.0
900056-001	SC-700B-WDR-347	E200.8	NONE-digested	2/7/2012	12:45	Antimony	ND	ug/L	10.0
900056-001	SC-700B-WDR-347	E200.8	NONE-digested	2/7/2012	12:45	Arsenic	ND	ug/L	1.0
900056-001	SC-700B-WDR-347	E200.8	NONE-digested	2/7/2012	12:45	Barium	18.6	ug/L	10.0
900056-001	SC-700B-WDR-347	E200.8	NONE-digested	2/7/2012	12:45	Chromium	ND	ug/L	2.0
900056-001	SC-700B-WDR-347	E200.8	NONE-digested	2/7/2012	12:45	Copper	ND	ug/L	5.0
900056-001	SC-700B-WDR-347	E200.8	NONE-digested	2/7/2012	12:45	Lead	ND	ug/L	10.0
900056-001	SC-700B-WDR-347	E200.8	NONE-digested	2/7/2012	12:45	Manganese	18.1	ug/L	1.0
900056-001	SC-700B-WDR-347	E200.8	NONE-digested	2/7/2012	12:45	Molybdenum	16.7	ug/L	10.0
900056-001	SC-700B-WDR-347	E218.6	LABFLT	2/7/2012	12:45	Chromium, hexavalent	ND	ug/L	1.0
900056-001	SC-700B-WDR-347	E300	NONE	2/7/2012	12:45	Fluoride	0.773	mg/L	0.500
900056-001	SC-700B-WDR-347	E300	NONE	2/7/2012	12:45	Nitrate as N	2.73	mg/L	1.00
900056-001	SC-700B-WDR-347	E300	NONE	2/7/2012	12:45	Sulfate	597	mg/L	25.0
900056-001	SC-700B-WDR-347	SM2130B	NONE	2/7/2012	12:45	Turbidity	ND	NTU	0.100
900056-001	SC-700B-WDR-347	SM2540C	NONE	2/7/2012	12:45	Total Dissolved Solids	4100	mg/L	250
900056-001	SC-700B-WDR-347	SM4500NH3D	NONE	2/7/2012	12:45	Ammonia-N	ND	mg/L	0.500
900056-001	SC-700B-WDR-347	SM4500NO2B	NONE	2/7/2012	12:45	Nitrite as N	ND	mg/L	0.0050



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Report Continued

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
900056-002	SC-100B-WDR-347	E120.1	NONE	2/7/2012	12:30	EC	7870	umhos/cm	2.00
900056-002	SC-100B-WDR-347	E200.7	NONE-digested	2/7/2012	12:30	Aluminum	ND	ug/L	50.0
900056-002	SC-100B-WDR-347	E200.7	NONE-digested	2/7/2012	12:30	BORON	1080	ug/L	200
900056-002	SC-100B-WDR-347	E200.7	NONE-digested	2/7/2012	12:30	Iron	ND	ug/L	20.0
900056-002	SC-100B-WDR-347	E200.7	LABFLT-digested	2/7/2012	12:30	Iron	ND	ug/L	20.0
900056-002	SC-100B-WDR-347	E200.7	NONE-digested	2/7/2012	12:30	Nickel	ND	ug/L	10.0
900056-002	SC-100B-WDR-347	E200.7	NONE-digested	2/7/2012	12:30	Zinc	ND	ug/L	10.0
900056-002	SC-100B-WDR-347	E200.8	NONE-digested	2/7/2012	12:30	Antimony	ND	ug/L	10.0
900056-002	SC-100B-WDR-347	E200.8	NONE-digested	2/7/2012	12:30	Arsenic	3.4	ug/L	1.0
900056-002	SC-100B-WDR-347	E200.8	NONE-digested	2/7/2012	12:30	Barium	26.8	ug/L	10.0
900056-002	SC-100B-WDR-347	E200.8	NONE-digested	2/7/2012	12:30	Chromium	842	ug/L	1.0
900056-002	SC-100B-WDR-347	E200.8	NONE-digested	2/7/2012	12:30	Copper	ND	ug/L	5.0
900056-002	SC-100B-WDR-347	E200.8	NONE-digested	2/7/2012	12:30	Lead	ND	ug/L	10.0
900056-002	SC-100B-WDR-347	E200.8	LABFLT-digested	2/7/2012	12:30	Manganese	6.8	ug/L	5.0
900056-002	SC-100B-WDR-347	E200.8	NONE-digested	2/7/2012	12:30	Manganese	6.6	ug/L	1.0
900056-002	SC-100B-WDR-347	E200.8	NONE-digested	2/7/2012	12:30	Molybdenum	20.0	ug/L	10.0
900056-002	SC-100B-WDR-347	E218.6	LABFLT	2/7/2012	12:30	Chromium, hexavalent	831	ug/L	10.5
900056-002	SC-100B-WDR-347	E300	NONE	2/7/2012	12:30	Fluoride	0.964	mg/L	0.500
900056-002	SC-100B-WDR-347	E300	NONE	2/7/2012	12:30	Nitrate as N	3.20	mg/L	1.00
900056-002	SC-100B-WDR-347	E300	NONE	2/7/2012	12:30	Sulfate	635	mg/L	25.0
900056-002	SC-100B-WDR-347	SM2130B	NONE	2/7/2012	12:30	Turbidity	ND	NTU	0.100
900056-002	SC-100B-WDR-347	SM2320B	NONE	2/7/2012	12:30	Alkalinity	140	mg/L	5.00
900056-002	SC-100B-WDR-347	SM2320B	NONE	2/7/2012	12:30	Bicarbonate	140	mg/L	5.00
900056-002	SC-100B-WDR-347	SM2320B	NONE	2/7/2012	12:30	Carbonate	ND	mg/L	5.00
900056-002	SC-100B-WDR-347	SM2540C	NONE	2/7/2012	12:30	Total Dissolved Solids	4700	mg/L	250
900056-002	SC-100B-WDR-347	SM4500NH3D	NONE	2/7/2012	12:30	Ammonia-N	ND	mg/L	0.500
900056-002	SC-100B-WDR-347	SM4500NO2B	NONE	2/7/2012	12:30	Nitrite as N	ND	mg/L	0.0050
900056-002	SC-100B-WDR-347	SM4500-PB_E	NONE	2/7/2012	12:30	Total Phosphorous-P	ND	mg/L	0.0200
900056-002	SC-100B-WDR-347	SM4500SI	NONE	2/7/2012	12:30	Soluble Silica	21.4	mg/L	1.00
900056-002	SC-100B-WDR-347	SM5310C	NONE	2/7/2012	12:30	Total Organic Carbon	0.495	mg/L	0.300

ND: Not 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

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 900056

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Printed 3/5/2012

Samples Received on 2/7/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-347	900056-001	02/07/2012 12:45	Water
SC-100B-WDR-347	900056-002	02/07/2012 12:30	Water

Anions By I.C. - EPA 300.0

Batch 02AN12J

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-001 Fluoride	mg/L	02/09/2012 18:05	5.00	0.155	0.500	0.773
Sulfate	mg/L	02/09/2012 18:28	50.0	5.70	25.0	597.
900056-002 Fluoride	mg/L	02/09/2012 18:16	5.00	0.155	0.500	0.964
Sulfate	mg/L	02/09/2012 18:39	50.0	5.70	25.0	635.

Method Blank

Parameter	Unit	DF	Result
Fluoride	mg/L	1.00	ND
Sulfate	mg/L	1.00	ND

Duplicate

Lab ID = 900069-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Sulfate	mg/L	1.00	55.7	56.1	0.787	0 - 20

Duplicate

Lab ID = 900077-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	1.00	0.579	0.544	6.23	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.05	4.00	101.	90 - 110
Sulfate	mg/L	1.00	20.1	20.0	101.	90 - 110

Matrix Spike

Lab ID = 900069-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Sulfate	mg/L	1.00	112.	106.(50.0)	112.	85 - 115

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Anions By I.C. - EPA 300.0

Parameter	Unit	Batch 02AN12I Analyzed	DF	MDL	RL	Result
900056-001 Nitrate as Nitrogen	mg/L	02/08/2012 12:16	5.00	0.135	1.00	2.73
900056-002 Nitrate as Nitrogen	mg/L	02/08/2012 12:28	5.00	0.135	1.00	3.20

Method Blank

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

Duplicate

Lab ID = 900041-016

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Nitrate as Nitrogen	mg/L	5.00	8.89	9.01	1.37	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	3.91	4.00	97.7	90 - 110

Matrix Spike

Lab ID = 900041-016

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	5.00	29.9	29.0(20.0)	104.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	3.94	4.00	98.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	3.02	3.00	101.	90 - 110



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Nitrite SM 4500-NO2 B		Batch 02NO212D				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-001 Nitrite as Nitrogen	mg/L	02/09/2012 11:25	1.00	0.000360	0.0050	ND
900056-002 Nitrite as Nitrogen	mg/L	02/09/2012 11:26	1.00	0.000360	0.0050	ND
Method Blank						
Parameter	Unit	DF	Result			
Nitrite as Nitrogen	mg/L	1.00	ND			
Duplicate					Lab ID = 900056-001	
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	0.0399	0.0400	99.8	90 - 110
Matrix Spike					Lab ID = 900056-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0191	0.0200(0.0200)	95.5	85 - 115
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0197	0.0200	98.5	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0199	0.0200	99.5	90 - 110



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Project Number: 424973.01.DM

Printed 3/5/2012

Alkalinity by SM 2320B

Batch 02ALK12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-002 Alkalinity as CaCO ₃	mg/L	02/10/2012	1.00	1.68	5.00	140.
Bicarbonate (Calculated)	mg/L	02/10/2012	1.00	1.68	5.00	140.
Carbonate (Calculated)	mg/L	02/10/2012	1.00	1.68	5.00	ND

Method Blank

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

Duplicate

Lab ID = 900066-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	140.	140.	0.00	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	96.0	100.	96.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	99.0	100.	99.0	90 - 110

Matrix Spike

Lab ID = 900016-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	303	289(100.)	114	75 - 125



Client: E2 Consulting Engineers, Inc.

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Specific Conductivity - EPA 120.1

Batch 02EC12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-001 Specific Conductivity	umhos/cm	02/09/2012	1.00	0.0950	2.00	6970
900056-002 Specific Conductivity	umhos/cm	02/09/2012	1.00	0.0950	2.00	7870

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 900055-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	4830	4840	0.207	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	690.	706	97.7	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	695	706	98.4	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	673	706	95.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	935	997	93.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	940.	997	94.3	90 - 110



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Chrome VI by EPA 218.6

Batch: 02CrH12V

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-001 Chromium, Hexavalent	ug/L	02/22/2012 14:46	5.25	0.136	1.0	ND
900056-002 Chromium, Hexavalent	ug/L	02/22/2012 15:59	52.5	1.36	10.5	831.

Method Blank

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

Duplicate

Lab ID = 900079-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.673	0.676	0.400	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.216	0.200	108.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.95	5.00	99.0	90 - 110

Matrix Spike

Lab ID = 800023-015

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.66	6.52(5.00)	103.	90 - 110

Matrix Spike

Lab ID = 800023-016

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	18.0	18.5(10.0)	95.0	90 - 110

Matrix Spike

Lab ID = 800023-017

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.46	6.33(5.00)	103.	90 - 110

Matrix Spike

Lab ID = 800092-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.16	1.22(1.06)	94.4	90 - 110

Matrix Spike

Lab ID = 800092-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.50	5.45(5.25)	101.	90 - 110

Matrix Spike

Lab ID = 900056-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.20	1.19(1.06)	101.	90 - 110


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Matrix Spike						Lab ID = 900056-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.66	5.38(5.25)	105.	90 - 110
Matrix Spike						Lab ID = 900056-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	52.5	1830	1880(1050)	95.5	90 - 110
Matrix Spike						Lab ID = 900079-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.66	1.68(1.00)	98.4	90 - 110
Matrix Spike						Lab ID = 900079-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.33	1.32(1.00)	101.	90 - 110
Matrix Spike						Lab ID = 900079-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.37	1.35(1.00)	102.	90 - 110
Matrix Spike						Lab ID = 900079-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.91	1.92(1.00)	99.6	90 - 110
Matrix Spike						Lab ID = 900079-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.87	1.90(1.00)	96.5	90 - 110
Matrix Spike						Lab ID = 900079-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.09	6.04(5.00)	101.	90 - 110
Matrix Spike						Lab ID = 999947-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.16	1.15(1.00)	101.	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	10.1	10.0	101.	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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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

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Metals by EPA 200.7, Total		Batch 022712A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-001 Aluminum	ug/L	02/27/2012 11:52	1.00	2.83	50.0	ND
Boron	ug/L	02/27/2012 11:52	1.00	1.50	200.	1080
Iron	ug/L	02/27/2012 11:52	1.00	1.34	20.0	ND
Nickel	ug/L	02/27/2012 11:52	1.00	2.56	10.0	ND
Zinc	ug/L	02/27/2012 11:52	1.00	3.89	10.0	ND
900056-002 Aluminum	ug/L	02/27/2012 11:58	1.00	2.83	50.0	ND
Boron	ug/L	02/27/2012 13:52	5.00	7.50	200.	1080
Iron	ug/L	02/27/2012 11:58	1.00	1.34	20.0	ND
Nickel	ug/L	02/27/2012 11:58	1.00	2.56	10.0	ND
Zinc	ug/L	02/27/2012 11:58	1.00	3.89	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Aluminum	ug/L	1.00	ND
Iron	ug/L	1.00	ND
Nickel	ug/L	1.00	ND
Zinc	ug/L	1.00	ND
Boron	ug/L	1.00	ND

Duplicate

Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Aluminum	ug/L	1.00	ND	0.00	0	0 - 20
Iron	ug/L	1.00	ND	0.00	0	0 - 20
Nickel	ug/L	1.00	ND	0.00	0	0 - 20
Zinc	ug/L	1.00	ND	0.00	0	0 - 20
Boron	ug/L	5.00	1080	1080	0.462	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	105.	100.	105.	85 - 115
Iron	ug/L	1.00	106.	100.	106.	85 - 115
Nickel	ug/L	1.00	92.2	100.	92.2	85 - 115
Zinc	ug/L	1.00	100.	100.	100.	85 - 115
Boron	ug/L	1.00	104.	100.	104.	85 - 115

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Matrix Spike
Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	1.00	76.6	100.(100.)	76.6	75 - 125
Iron	ug/L	1.00	102.	100.(100.)	102.	75 - 125
Nickel	ug/L	1.00	93.2	100.(100.)	93.2	75 - 125
Zinc	ug/L	1.00	115.	100.(100.)	115.	75 - 125
Boron	ug/L	5.00	1530	1580(500.)	89.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5130	5000	103.	90 - 110
Iron	ug/L	1.00	5220	5000	104.	90 - 110
Nickel	ug/L	1.00	5030	5000	100.	90 - 110
Zinc	ug/L	1.00	5110	5000	102.	90 - 110
Boron	ug/L	1.00	5190	5000	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	4760	5000	95.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	4990	5000	99.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5310	5000	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5260	5000	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5160	5000	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5390	5000	108.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	5460	5000	109.	90 - 110



TRUESDAIL LABORATORIES, INC.

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/5/2012

Metals by EPA 200.8, Total

Batch 021512B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-001 Antimony	ug/L	02/16/2012 03:35	5.00	0.120	10.0	ND
Barium	ug/L	02/16/2012 03:35	5.00	0.200	10.0	18.6
Copper	ug/L	02/16/2012 03:35	5.00	0.125	5.0	ND
Lead	ug/L	02/16/2012 03:35	5.00	0.110	10.0	ND
Manganese	ug/L	02/16/2012 03:35	5.00	0.285	1.0	18.1
Molybdenum	ug/L	02/16/2012 03:35	5.00	0.270	10.0	16.7
900056-002 Antimony	ug/L	02/16/2012 02:37	5.00	0.120	10.0	ND
Barium	ug/L	02/16/2012 02:37	5.00	0.200	10.0	26.8
Copper	ug/L	02/16/2012 02:37	5.00	0.125	5.0	ND
Lead	ug/L	02/16/2012 02:37	5.00	0.110	10.0	ND
Manganese	ug/L	02/16/2012 02:37	5.00	0.285	1.0	6.6
Molybdenum	ug/L	02/16/2012 02:37	5.00	0.270	10.0	20.0

Method Blank

Parameter	Unit	DF	Result
Barium	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

Duplicate

Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	5.00	27.4	26.8	2.07	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	6.90	6.62	4.16	0 - 20
Molybdenum	ug/L	5.00	20.2	20.0	0.896	0 - 20

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 16 of 33****Project Number: 424973.01.DM****Printed 3/5/2012****Low Level Calibration Verification**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	0.979	1.00	97.9	70 - 130
Antimony	ug/L	1.00	1.01	1.00	101.	70 - 130
Copper	ug/L	1.00	0.948	1.00	94.8	70 - 130
Lead	ug/L	1.00	0.966	1.00	96.6	70 - 130
Manganese	ug/L	1.00	0.161	0.200	80.7	70 - 130
Molybdenum	ug/L	1.00	0.998	1.00	99.8	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	5.00	99.5	100.	99.5	85 - 115
Antimony	ug/L	5.00	100.	100.	100.	85 - 115
Copper	ug/L	5.00	107.	100.	107.	85 - 115
Lead	ug/L	5.00	101	100.	101	85 - 115
Manganese	ug/L	5.00	101.	100.	101.	85 - 115
Molybdenum	ug/L	5.00	99.2	100.	99.2	85 - 115

Matrix Spike

Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	5.00	127.	127.(100.)	100.	75 - 125
Antimony	ug/L	5.00	97.6	100.(100.)	97.6	75 - 125
Copper	ug/L	5.00	96.6	100.(100.)	96.6	75 - 125
Lead	ug/L	5.00	91.3	100.(100.)	91.3	75 - 125
Manganese	ug/L	5.00	108	107.(100.)	101.	75 - 125
Molybdenum	ug/L	5.00	121.	120.(100.)	101.	75 - 125

Matrix Spike Duplicate

Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	5.00	125.	127.(100.)	98.1	75 - 125
Antimony	ug/L	5.00	97.1	100.(100.)	97.1	75 - 125
Copper	ug/L	5.00	96.0	100.(100.)	96.0	75 - 125
Lead	ug/L	5.00	90.6	100.(100.)	90.6	75 - 125
Manganese	ug/L	5.00	107.	107.(100.)	100.	75 - 125
Molybdenum	ug/L	5.00	121	120.(100.)	101	75 - 125



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Project Name: PG&E Topock Project

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Interference Check Standard AB

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	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		

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Antimony	ug/L	1.00	ND	0.00		
Copper	ug/L	1.00	9.98	10.0	99.8	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	9.87	10.0	98.7	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	9.69	10.0	96.9	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.43	10.0	94.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
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 = 900056-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	25.0	25.4	26.8	5.25	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.



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Printed 3/5/2012

Metals by EPA 200.8, Total

Batch: 021712A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-001 Arsenic	ug/L	02/17/2012 21:06	5.00	0.285	1.0	ND
900056-002 Arsenic	ug/L	02/17/2012 19:40	5.00	0.285	1.0	3.4

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND

Duplicate

Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	5.00	3.76	3.40	9.92	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.199	0.200	99.4	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	100.	100.	100.	85 - 115

Matrix Spike

Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	105	103.(100.)	102.	75 - 125

Matrix Spike Duplicate

Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	103.	103.(100.)	99.5	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.4	10.0	104.	90 - 110



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Project Number: 424973.01.DM

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Metals by EPA 200.8, Total

Batch 030212A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-001 Chromium	ug/L	03/02/2012 13:32	10.0	0.220	2.0	ND
900056-002 Chromium	ug/L	03/02/2012 11:58	5.00	0.110	1.0	842.

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	10.0	795.	842	5.72	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.174	0.200	87.1	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	101.	100.	101.	85 - 115

Matrix Spike

Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	1790	1840(1000)	94.7	75 - 125

Matrix Spike Duplicate

Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	10.0	1800	1840(1000)	95.9	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.85	10.0	98.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.78	10.0	97.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.46	10.0	94.6	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.



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Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.74	10.0	97.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.42	10.0	94.2	80 - 120

Serial Dilution

Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	821.	842	2.50	0 - 10

Reactive Silica by SM4500-Si D

Batch 02Si12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-002 Silica	mg/L	02/16/2012	25.0	0.532	1.00	21.4

Method Blank

Parameter	Unit	DF	Result
Silica	mg/L	1.00	ND

Duplicate

Lab ID = 900062-001

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.204	0.220	92.7	90 - 110

Matrix Spike

Lab ID = 900062-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Silica	mg/L	1.00	0.417	0.400(0.400)	104.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.114	0.110	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.392	0.400	98.0	90 - 110

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 25 of 33****Project Number: 424973.01.DM****Printed 3/5/2012****Total Dissolved Solids by SM 2540 C**

Batch 02TDS12H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-001 Total Dissolved Solids	mg/L	02/08/2012	1.00	0.400	250.	4100
900056-002 Total Dissolved Solids	mg/L	02/08/2012	1.00	0.400	250.	4700

Method Blank

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

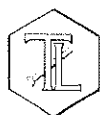
Duplicate

Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4910	4700	4.37	0 - 5

Lab Control Sample

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



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Total Organic Carbon (T/DOC) SM 5310 C

Batch 02TOC12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-002 Total Organic Carbon	mg/L	02/10/2012 19:23	1.00	0.0103	0.300	0.495

Method Blank

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

Duplicate

Lab ID = 900015-006

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Organic Carbon	mg/L	1.00	1.95	1.96	0.665	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	20.8	20.0	104.	90 - 110

Matrix Spike

Lab ID = 900015-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	11.7	12.0(10.0)	97.8	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	10.4	10.0	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	10.1	10.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.88	10.0	98.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	10.2	10.0	102.	90 - 110



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Total Phosphate, SM 4500-PB,E

Batch 02TP12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-002 Phosphate, Total As P	mg/L	02/14/2012	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 = 900056-002

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	0.0943	0.100	94.3	90 - 110

Matrix Spike

Lab ID = 900056-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0693	0.0650(0.0650)	107.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0586	0.0600	97.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0625	0.0650	96.2	90 - 110



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Ammonia Nitrogen by SM4500-NH3D

Batch 02NH3-E12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-001 Ammonia as N	mg/L	02/10/2012	1.00	0.00120	0.500	ND
900056-002 Ammonia as N	mg/L	02/10/2012	1.00	0.00120	0.500	ND

Method Blank

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

Duplicate

Lab ID = 900056-001

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	9.98	10.0	99.8	90 - 110

Matrix Spike

Lab ID = 900056-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.95	6.00(6.00)	99.1	75 - 125

Matrix Spike Duplicate

Lab ID = 900056-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.07	6.00(6.00)	101.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.83	6.00	97.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.47	6.00	108.	90 - 110


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Printed 3/5/2012
Metals by EPA 200.8, Dissolved

Batch: 021712A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-002 Manganese	ug/L	02/17/2012 23:45	5.00	0.285	5.0	6.8

Method Blank

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

Duplicate

Lab ID = 900055-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	10.2	9.90	2.89	0 - 20
Manganese	ug/L	5.00	38.5	37.7	2.05	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.212	0.200	106.	70 - 130
Manganese	ug/L	1.00	0.978	1.00	97.8	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	104.	100.	104.	85 - 115
Manganese	ug/L	5.00	100.0	100.	100.0	85 - 115

Matrix Spike

Lab ID = 900055-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	115.	110.(100.)	105.	75 - 125
Manganese	ug/L	5.00	140.	138.(100.)	103.	75 - 125

Matrix Spike Duplicate

Lab ID = 900055-001

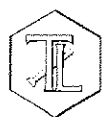
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	115.	110.(100.)	105.	75 - 125
Manganese	ug/L	5.00	138.	138.(100.)	99.9	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.4	10.0	104.	90 - 110
Manganese	ug/L	1.00	9.84	10.0	98.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.72	10.0	97.2	90 - 110



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Printed 3/5/2012

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.67	10.0	96.7	90 - 110

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard 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	10.1	10.0	101.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.73	10.0	97.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.88	10.0	98.8	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.63	10.0	96.3	80 - 120

Serial Dilution

Lab ID = 900055-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	125	1070	1040	3.03	0 - 10



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/5/2012

Metals by 200.7, Dissolved

Batch: 022712A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-002 Iron	ug/L	02/27/2012 12:52	1.00	1.34	20.0	ND

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate

Lab ID = 900055-001

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	106.	100.	106.	85 - 115

Matrix Spike

Lab ID = 900055-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	107.	100.(100.)	107.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5220	5000	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5260	5000	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5160	5000	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5390	5000	108.	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2230	2000	112.	80 - 120

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2400	2000	120.	80 - 120

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/5/2012

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2200	2000	110.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2320	2000	116.	80 - 120

Turbidity by SM 2130 B

Batch: 02TUC12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900056-001 Turbidity	NTU	02/08/2012	1.00	0.0140	0.100	ND
900056-002 Turbidity	NTU	02/08/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 900056-002

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	8.14	8.00	102.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.22	8.00	103.	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


Mona Nassimi

Manager, Analytical Services

E2 SC



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 02TDS12H

Date Calculated: 2/16/12

Laboratory Number	Sample volume, ml	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	76.5513	76.5515	76.5514	0.0001	No	0.0001	1.0	25.0	ND	1
900015-4	50	47.9650	48.0267	48.0264	0.0003	No	0.0614	1228.0	50.0	1228.0	1
900015-5	20	50.9623	51.0314	51.0313	0.0001	No	0.0690	3450.0	125.0	3450.0	1
900015-6	50	49.2606	49.2964	49.296	0.0004	No	0.0354	708.0	50.0	708.0	1
900033-1	50	68.3188	68.351	68.3506	0.0004	No	0.0318	636.0	50.0	636.0	1
900033-2	100	76.5547	76.5833	76.583	0.0003	No	0.0283	283.0	25.0	283.0	1
900033-3	100	65.7030	65.7341	65.734	0.0001	No	0.0310	310.0	25.0	310.0	1
900055-1	10	47.9054	47.9579	47.9578	0.0001	No	0.0524	5240.0	250.0	5240.0	1
900055-2	20	49.5260	49.5831	49.5828	0.0003	No	0.0568	2840.0	125.0	2840.0	1
900056-1	10	51.4348	51.4761	51.4758	0.0003	No	0.0410	4100.0	250.0	4100.0	1
900056-2	10	51.0760	51.1234	51.1230	0.0004	No	0.0470	4700.0	250.0	4700.0	1
900056-2D	10	49.4725	49.5216	49.5216	0.0000	No	0.0491	4910.0	250.0	4910.0	1
LCS	100	111.1885	111.2377	111.2375	0.0002	No	0.0490	490.0	25.0	490.0	1
900039-1	100	71.0907	71.1445	71.1444	0.0001	No	0.0537	537.0	25.0	537.0	1
900039-2	100	68.5659	68.6231	68.6227	0.0004	No	0.0568	568.0	25.0	568.0	1
900039-3	50	50.5032	50.5332	50.5328	0.0004	No	0.0296	592.0	50.0	592.0	1
900042-10	100	66.7206	66.7774	66.7774	0.0000	No	0.0568	568.0	25.0	568.0	1
900042-11	100	69.3459	69.4032	69.4031	0.0001	No	0.0572	572.0	25.0	572.0	1
900066	100	74.9427	74.9773	74.9772	0.0001	No	0.0345	345.0	25.0	345.0	1
900090	490	105.2884	105.2931	105.2928	0.0003	No	0.0044	9.0	5.1	9.0	1
900095	100	67.7914	67.8490	67.8490	0.0000	No	0.0576	576.0	25.0	576.0	1

Calculation as follows:

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

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

B = weight of dish in grams.

C = mL of sample filtered.

RL= reporting limit.

ND = not detected (below the reporting limit)

Analyst Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 02TDS12H

Date Calculated: 2/16/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
900015-4	1795	0.68	1166.75	1.05
900015-5	4740	0.73	3081	1.12
900015-6	1131	0.63	735.15	0.96
900033-1	1040	0.61	676	0.94
900033-2	438	0.65	284.7	0.99
900033-3	428	0.72	278.2	1.11
900055-1	8630	0.61	5609.5	0.93
900055-2	4890	0.58	3178.5	0.89
900056-1	7150	0.57	4647.5	0.88
900056-2	7870	0.60	5115.5	0.92
900056-2D	7870	0.62	5115.5	0.96
LCS				
900039-1	931	0.58	605.15	0.89
900039-2	931	0.61	605.15	0.94
900039-3	1019	0.58	662.35	0.89
900042-10	914	0.62	594.1	0.96
900042-11	920	0.62	598	0.96
900066	623	0.55	404.95	0.85
900090	16.4	0.55	10.66	0.84
900095	985	0.58	640.25	0.90





Alkalinity by SM 2320B

Calculations

Date of Analysis: 2/10/12

Analytical Batch: 02ALK12C
Matrix: Water
Date Calculated: 2/10/12

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO ₃	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO ₃	RL, ppm	Total Alkalinity Reported Value	HCO ₃ Conc. as CaCO ₃ (ppm)	CO ₃ Alkalinity as CaCO ₃ (ppm)	OH Alkalinity as CaCO ₃ (ppm)	Low Alkalinity as CaCO ₃ (<20ppm)
BLANK	6.99	50	0.02		0.0	0.04		0.8	5	ND	ND	ND	ND	
900016-3	7.00	50	0.02		0.0	9.45		189.0	5	189.0	189.0	ND	ND	
900041-20	8.01	50	0.02		0.0	3.70		74.0	5	74.0	74.0	ND	ND	
900056-2	7.32	50	0.02		0.0	7.00		140.0	5	140.0	140.0	ND	ND	
900066	8.30	50	0.02		0.0	7.00		140.0	5	140.0	140.0	ND	ND	
900066D	8.29	50	0.02		0.0	7.00		140.0	5	140.0	140.0	ND	ND	
900016-3MS	8.50	50	0.02	2.0	40.0	15.15		303.0	5	303.0	223.0	80	ND	
LCS	10.30	50	0.02	2.2	44.0	4.80		96.0	5	96.0	8.0	88	ND	
LCS	10.25	50	0.02	2.2	44.0	4.95		99.0	5	99.0	11.0	88	ND	

Calculations as follows:

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

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

Where: B = mL titrant to first recorded pH

C = Total mL titrant to reach pH 0.3 unit lower

N = Normality of standard acid

LCS = Laboratory Control Standard/Duplicate

MS/MSD = Matrix Spike/Duplicate

ND = Not Detected (below the reporting limit)

T = Total Alkalinity, mg CaCO₃/LP = Phenolphthalein Alkalinity, mg CaCO₃/L

A = mL standard acid used

N = normality of standard acid

Blank Summary

Reporting Limit, RL	Measured Value, ppm	Accept Limit	QC Within Control?
5 ppm	0.8	<5	Yes

Laboratory Control Sample (LCS/LCSD) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	% Recovery	Acceptance Limit	QC Within Control?
LCS	96	100	96.0%	90-110	Yes
LCSD	99	100	99.0%	90-110	Yes

Sample Matrix Spike (MS/MSD) Summary

Lab Number	Conc of Unspk spl	Dil Factor	Added Spk Conc	MS/MSD Amt	Measrd Conc of Spk Spl	Theor Conc of Spk Spl	MS/MSD % Rec	MS Accept Limit	QC Within Control?	RPD	RPD Accept Limit	QC Within Control?
900016-3	189	1	100	100	303	289.00	114%	75-125	Yes			

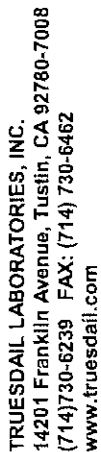
Kim

Analyst Printed Name
Alk_2012

Analyst Signature

Reviewer Printed Name
Hope T.

Reviewer Signature



9999

COC Number
TURNAROUND TIME
DATE 2/07/12

[illegible]

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>3.50</u> °C	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>		
SPECIAL REQUIREMENTS:								
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
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
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

[illegible]

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
999950	>1	<2	02/03/12	H.M.	Yes	3/10A
999977	↓	↓	↓	↓	↓	-
999978	↓	↓	↓	↓	↓	-
999951(1-2)	↓	↓	↓	↓	yes	-
999911	<1	<2	02-06-12	HT/BE	NO	-
999951-(1-5)	>1	>2	↓	↓	Yes	Y 2/6/12
-2	<1	>2	↓	↓	NO	-
02/06/12						
900015(1-7)	<1	<2	02-06-12	H.M.	yes	-
900016(1-5)	↓	↓	↓	↓	↓	-
900017(1-3.5-9)	↓	↓	↓	↓	↓	-
900033(1-5)	<1	<2	02-07-12	H.M.	yes	-
900055(1-2)	<1	>2	02-08-12	H.M.	yes	yes
900056(1-2)	<1	>2	↓	↓	↓	-
900057(1-6)	<1	>2	↓	↓	↓	-
9000643	>1	<2	2/8/12	ES	yes	3/10A
900014	>1	<2	2/8/12	H.M.	yes	3/10A
900040	↓	↓	↓	↓	↓	-
900079(1-6)	>1	<2	2/9/12	H.M.	yes	3/10A
900075(1-2)	>1	<2	2/9/12	H.M.	yes	3/10A
900039(1-3)	<1	>2	2/9/12	ES	NO	yes w/ (1.0) pH
041(16,23)	↓	↓	↓	↓	↓	↓
052-1	↓	↓	↓	↓	↓	↓
068(10-12)	↓	↓	↓	↓	↓	↓
076(1-3)	↓	↓	↓	↓	↓	↓
900147(1-5)	<1	<2	2/14/12	H.M.	yes	3/10A
900148(1-4,6-11,13-17,19,21)	↓	↓	↓	↓	↓	↓
900180	<1	>2	2/16/12	H.M.	yes	3/10A
900181(12,18)	<1	<2	↓	↓	↓	↓
-11-11-5	>1	<2	↓	↓	↓	↓
900182(1-6)	<1	<2	↓	↓	↓	↓
800000(1-4)	↓	↓	↓	↓	↓	↓
800001	<1	<2	2/16/12	ES	NO	NO
800018(1-4)	<1	<2	↓	↓	↓	↓
800015	<1	<2	↓	↓	↓	↓
800019	<1	<2	↓	↓	↓	↓
900106(1-4)	>2	<2	↓	↓	yes	3/10A
900127	↓	↓	↓	↓	↓	↓
900135	↓	↓	↓	↓	↓	↓
900162	↓	↓	↓	↓	↓	↓
900163	↓	↓	↓	↓	↓	↓
900202	↓	↓	↓	↓	↓	↓
900203	↓	↓	↓	↓	↓	↓
900204	↓	↓	↓	↓	NO	-
800026	<1	>2	2/17/12	HT	NO	2/17 9:30 am Y
800023(15-17)	<1	>2	2/17/12	H.M.	yes	3/10A
800024	↓	<2	↓	↓	↓	↓
800025(1-8)	↓	↓	↓	↓	↓	↓



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 900056

Date Delivered: 02/07/12 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)? 3.5°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☒ Truesdail ☐ Client ☒ Yes ☐ No ☐ N/A
12. Were samples pH checked? pH = see C.O.C. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: A. Shapiro

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

February 29, 2012

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-348 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 900180

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-348 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 February 14, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

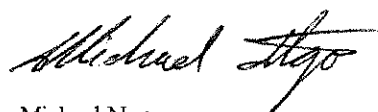
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


for Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

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

Laboratory No.: 900180

Date: February 29, 2012

Collected: February 14, 2012

Received: February 14, 2012

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	Bitu Emami
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov / George Wahba



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

Laboratory No.: 900180
Date Received: February 14, 2012

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
900180-001	SC-700B-WDR-348	E120.1	NONE	2/14/2012	13:00	EC	7460	umhos/cm	2.00
900180-001	SC-700B-WDR-348	E200.8	NONE-digested	2/14/2012	13:00	Chromium	ND	ug/L	1.0
900180-001	SC-700B-WDR-348	E200.8	NONE-digested	2/14/2012	13:00	Manganese	12.0	ug/L	1.0
900180-001	SC-700B-WDR-348	E218.6	LABFLT	2/14/2012	13:00	Chromium, hexavalent	ND	ug/L	1.0
900180-001	SC-700B-WDR-348	SM2130B	NONE	2/14/2012	13:00	Turbidity	ND	NTU	0.100
900180-001	SC-700B-WDR-348	SM2540C	NONE	2/14/2012	13:00	Total Dissolved Solids	4440	mg/L	250

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

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 900180

Page 1 of 9

Printed 2/29/2012

Samples Received on 2/14/2012 10:00:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-348	900180-001	02/14/2012 13:00	Water

Specific Conductivity - EPA 120.1

Batch 02EC12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900180-001 Specific Conductivity	umhos/cm	02/17/2012	1.00	0.0950	2.00	7460

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 900180-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7470	7460	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

Lab Control Sample Duplicate

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	698	706	98.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	940.	997	94.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	945	997	94.8	90 - 110

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

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 9

Project Number: 424973.01.DM

Printed 2/29/2012

Chrome VI by EPA 218.6

Batch 02CrH12N

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900180-001 Chromium, Hexavalent	ug/L	02/15/2012 16:50	5.25	0.136	1.0	ND

Method Blank

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

Duplicate

Lab ID = 999969-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	3.12	3.10	0.826	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.219	0.200	109.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.14	5.00	103.	90 - 110

Matrix Spike

Lab ID = 900180-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.16	1.17(1.06)	98.5	90 - 110

Matrix Spike

Lab ID = 900180-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.63	5.50(5.25)	102.	90 - 110

Matrix Spike

Lab ID = 999969-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.14	1.12(1.00)	102.	90 - 110

Matrix Spike

Lab ID = 999969-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.37	8.10(5.00)	105.	90 - 110

Matrix Spike

Lab ID = 999969-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.27	8.14(5.00)	102.	90 - 110

Matrix Spike

Lab ID = 999969-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.65	6.57(5.00)	102.	90 - 110

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 2/29/2012

Metals by EPA 200.8, Total		Batch 022412A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
900180-001 Chromium	ug/L	02/24/2012 15:08	5.00	0.110	1.0	ND
Manganese	ug/L	02/24/2012 15:08	5.00	0.285	1.0	12.0

Method Blank

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

Duplicate

Lab ID = 900180-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	12.1	12.0	0.830	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.193	0.200	96.6	70 - 130
Manganese	ug/L	1.00	0.185	0.200	92.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	106.	100.	106.	85 - 115
Manganese	ug/L	5.00	102.	100.	102.	85 - 115

Matrix Spike

Lab ID = 900180-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	110.	100.(100.)	110.	75 - 125
Manganese	ug/L	5.00	117.	112(100.)	105.	75 - 125

Matrix Spike Duplicate

Lab ID = 900180-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	108.	100.(100.)	108.	75 - 125
Manganese	ug/L	5.00	113.	112(100.)	101	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.4	10.0	104	90 - 110
Manganese	ug/L	1.00	9.98	10.0	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 2/29/2012

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	10.1	10.0	101.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.97	10.0	99.7	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.87	10.0	98.7	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.66	10.0	96.6	80 - 120

Total Dissolved Solids by SM 2540 C

Batch 02TDS12J

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900180-001 Total Dissolved Solids	mg/L	02/17/2012	1.00	0.400	250.	4440

Method Blank

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

Duplicate

Lab ID = 900167-010

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	928	908	2.18	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

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 9

Project Number: 424973.01.DM

Printed 2/29/2012

Turbidity by SM 2130 B

Batch 02TUC121

Parameter	Unit	Analyzed	DF	MDL	RL	Result
900180-001 Turbidity	NTU	02/15/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 900180-001

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

Lab Control Sample


Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.35	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.


for Mona Nassimi
Manager, Analytical Services

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 02TDS12J

Date Calculated: 2/21/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
900167-1	1654	0.69	1075.1	1.05
900167-2	957	0.59	622.05	0.91
900167-3	1309	0.65	850.85	1.01
900167-4	924	0.58	600.6	0.89
900167-5	869	0.58	564.85	0.90
900167-6	843	0.61	547.95	0.93
900167-7	1886	0.77	1225.9	1.19
900167-8	1689	0.72	1097.85	1.11
900167-9	1616	0.70	1050.4	1.07
900167-10	1340	0.68	871	1.04
900167-10D	1340	0.69	871	1.07
LCS				
900180	7460	0.60	4849	0.92
900184-5	544	0.60	353.6	0.92
800002-1	1583	0.65	1028.95	1.00
800002-2	893	0.66	580.45	1.02
800042	2260	0.60	1469	0.93



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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-348]

900180

COC Number

10 Days

TURNAROUND TIME

DATE 02/14/12

PAGE 1 OF 1

COMPANY	E2	PROJECT NAME	PG&E Topock	PHONE	(530) 229-3303	FAX	(530) 339-3303	ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612	P.O. NUMBER	424973.01.DM	TEAM	1	SAMPLERS (SIGNATURE)		DATE	02/14/12	TIME	1300	DESCRIPTION	Water	CG (218.6) Lab Filtered	X	Total Metals (200.7) Cr, Mn	X	Specific Conductance (120.1)	X	TDS (SM2540C)	X	Turbidity (SM2130)	X	NUMBER OF CONTAINERS	3	COMMENTS	PH = 6.7 @ 20.7
																					TOTAL NUMBER OF CONTAINERS		3												

ALERT!!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	RECEIVED	COOL	WARM	3.8 °C
	Bob Phelps	Agency	2-14-12 15:30	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Signature (Received)	Printed Name	Company/Agency	Date/Time	CUSTODY SEALED YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			
	Rafael	Agency	2-14-12 15:30				
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	SPECIAL REQUIREMENTS:			
	Rafael	Agency	2-14-12 22:00				
Signature (Received)	Printed Name	Company/Agency	Date/Time				
	Luella	Agency	4/14/12 22:00				
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time				
	Luella	Agency					
Signature (Received)	Printed Name	Company/Agency	Date/Time				
		Agency					

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
999950	>1	<2	02/03/12	M.M	yes	3/10/12
999977	↓	↓	↓	↓	↓	-
999978	↓	↓	↓	↓	↓	-
9999511(1-2)	↓	↓	↓	↓	yes	-
999911	<1	<2	02-06-12	M/BE	No	-
999951-12	>1	>2	↓	↓	yes	Y 2/6/12
-2	<1	>2	↓	↓	No	-
02/06/12	<1	<2	↓	↓	↓	-
900015(1-7)	<1	<2	02-06-12	M.M	yes	-
900016(1-5)	↓	↓	↓	↓	↓	-
900017(1-3,5-9)	↓	↓	↓	↓	↓	-
900033(1-5)	<1	<2	02-07-12	M.M	yes	-
900055(1-2)	<1	>2	02-08-12	M.M	yes	yes
900056(1-2)	<1	>2	↓	↓	↓	-
900057(1-6)	<1	>2	↓	↓	↓	-
9000043	>1	<2	2/8/12	ES	yes	30/10
900014	>1	<2	2/8/12	M.M	yes	30/10/12
900040	↓	↓	↓	↓	↓	-
900079(1-6)	>1	<2	2/9/12	M.M	yes	30/10/12
900075(1-2)	>1	<2	2/9/12	M.M	yes	30/10/12
900039(1-3)	<1	>2	2/9/12	ES	No	yes 2/10/12 P.M.
041(16,23)	↓	↓	↓	↓	↓	↓
052-1	↓	↓	↓	↓	↓	↓
068(10-12)	↓	↓	↓	↓	↓	↓
076(1-3/1)	↓	↓	↓	↓	↓	↓
900147(1-5)	<1	<2	2/14/12	M.M	yes	30/10/12
900148(1-4,6-11, 13-17, 19, 21)	↓	↓	↓	↓	↓	↓
900180	<1	>2	2/16/12	M.M	yes	30/10/12
900181(12,18)	<1	<2	↓	↓	↓	↓
-11-11-5	>1	<2	↓	↓	↓	↓
900182(1-6)	<1	<2	↓	↓	↓	↓
800000(1-4)	↓	↓	↓	↓	↓	↓
800001	<1	<2	2/16/12	ES	No	No
800018(1-4)	<1	<2	↓	↓	↓	↓
800015	<1	<2	↓	↓	↓	↓
800019	<1	<2	↓	↓	↓	↓
900106(1-4)	>2	<2	↓	↓	yes	30/10/12
900127	↓	↓	↓	↓	↓	↓
900135	↓	↓	↓	↓	↓	↓
900162	↓	↓	↓	↓	↓	↓
900163	↓	↓	↓	↓	↓	↓
900202	↓	↓	↓	↓	↓	↓
900203	↓	↓	↓	↓	↓	↓
900204	↓	↓	↓	↓	No	-
800026	<1	>2	2/17/12	M	No	2/17/12 9:30 am
800027(15-17)	<1	>2	2/17/12	M.M	yes	30/10/12
800024	↓	<2	↓	↓	↓	↓
800025(1-8)	↓	↓	↓	↓	↓	↓



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2

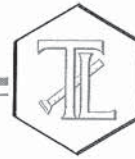
Lab # 90780

Date Delivered: 02/14/12 Time: 22:00 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)? 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 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: L. Shabunin

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www.truesdail.com

April 10, 2012

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

Revision 1: 04/10/12

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-349 PROJECT, GROUNDWATER
MONITORING, TLI No.: 800092

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-349 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 February 21, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

For Mona Nassimi
Manager, Analytical Services

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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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

Laboratory No.: 800092

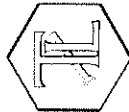
Date: March 7, 2012

Collected: February 21, 2012

Received: February 21, 2012

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	Bitu Emami
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov / George Wahba



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.: 800092
Date Received: February 21, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800092-001	SC-700B-WDR-349	E120.1	NONE	2/21/2012	13:40	EC	7200	umhos/cm	2.00
800092-001	SC-700B-WDR-349	E200.8	NONE-digested	2/21/2012	13:40	Chromium	ND	ug/L	1.0
800092-001	SC-700B-WDR-349	E200.8	NONE-digested	2/21/2012	13:40	Manganese	8.9	ug/L	5.0
800092-001	SC-700B-WDR-349	E218.6	LABFLT	2/21/2012	13:40	Chromium, hexavalent	ND	ug/L	1.0
800092-001	SC-700B-WDR-349	SM2130B	NONE	2/21/2012	13:40	Turbidity	ND	NTU	0.100
800092-001	SC-700B-WDR-349	SM2540C	NONE	2/21/2012	13:40	Total Dissolved Solids	4360	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:

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

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

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

TRUESDAIL LABORATORIES, INC.

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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

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 800092

Page 1 of 9

Printed 3/7/2012

Samples Received on 2/21/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-349	800092-001	02/21/2012 13:40	Water

Specific Conductivity - EPA 120.1

Batch 02EC12G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800092-001 Specific Conductivity	umhos/cm	02/23/2012	1.00	0.0950	2.00	7200

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 800057-007

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	3070	3070	0.00	0 - 10

Duplicate

Lab ID = 800092-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7190	7200	0.139	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	698	706	98.9	90 - 110

Lab Control Sample Duplicate

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

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	700	706	99.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	995	997	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.

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/7/2012

Chrome VI by EPA 218.6

Batch 02CrH12V

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800092-001 Chromium, Hexavalent	ug/L	02/22/2012 15:17	5.25	0.136	1.0	ND

Method Blank

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

Duplicate

Lab ID = 900079-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.673	0.676	0.400	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.216	0.200	108.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.95	5.00	99.0	90 - 110

Matrix Spike

Lab ID = 800023-015

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.66	6.52(5.00)	103.	90 - 110

Matrix Spike

Lab ID = 800023-016

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	18.0	18.5(10.0)	95.0	90 - 110

Matrix Spike

Lab ID = 800023-017

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.46	6.33(5.00)	103.	90 - 110

Matrix Spike

Lab ID = 800092-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.16	1.22(1.06)	94.4	90 - 110

Matrix Spike

Lab ID = 800092-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.50	5.45(5.25)	101.	90 - 110

Matrix Spike

Lab ID = 900056-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.20	1.19(1.06)	101.	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/7/2012

Metals by EPA 200.8, Total

Batch 022712C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800092-001 Chromium	ug/L	02/28/2012 01:23	5.00	0.110	1.0	ND
Manganese	ug/L	02/28/2012 01:23	5.00	0.285	5.0	8.9

Method Blank

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

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.165	0.200	82.3	70 - 130
Manganese	ug/L	1.00	1.05	1.00	105.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	105.	100.	105.	85 - 115
Manganese	ug/L	5.00	99.0	100.	99.0	85 - 115

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	106.	100.(100.)	106.	75 - 125
Manganese	ug/L	5.00	105.	109.(100.)	95.9	75 - 125

Lab ID = 800092-001

Matrix Spike Duplicate

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	104.	100.(100.)	104.	75 - 125
Manganese	ug/L	5.00	105.	109.(100.)	96.5	75 - 125

Lab ID = 800092-001

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.6	10.0	106.	90 - 110
Manganese	ug/L	1.00	10.3	10.0	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.57	10.0	95.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.44	10.0	94.4	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/7/2012

Total Dissolved Solids by SM 2540 C

Batch 02TDS12K

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800092-001 Total Dissolved Solids	mg/L	02/22/2012	1.00	0.400	250.	4360

Method Blank

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

Duplicate

Lab ID = 800023-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	5560	5380	3.29	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	491	500.	98.2	90 - 110

Turbidity by SM 2130 B

Batch 02TUC12N

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800092-001 Turbidity	NTU	02/22/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 800092-001

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.06	8.00	101.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.96	8.00	99.5	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project


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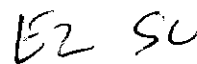
Project Number: 424973.01.DM

Printed 3/7/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi
Manager, Analytical Services



Calculations

Date Calculated: 2/23/12

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

Hoye
Reviewer Printed Name



Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 02TDS12K

Date Calculated: 2/23/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
800023-1	3600	0.72	2340	1.10
800023-2	4620	0.78	3003	1.20
800023-3	3770	0.72	2450.5	1.11
800023-4	4060	0.72	2639	1.10
800023-5	3580	0.72	2327	1.11
800023-6	3670	0.74	2385.5	1.13
800023-7	3580	0.72	2327	1.11
800023-8	5680	0.83	3692	1.27
800023-9	6620	0.81	4303	1.25
800023-10	3720	0.75	2418	1.15
800023-9D	6620	0.84	4303	1.29
LCS				
800023-13	8910	0.78	5791.5	1.19
800061-2	150	0.57	97.5	0.87
800061-4	370	0.58	240.5	0.89
800091	13.6	ND	8.84	ND
800092	7310	0.60	4751.5	0.92
800116-1	3810	0.59	2476.5	0.91
800116-2	4000	0.59	2600	0.91





TRUESDAIL LABORATORIES, INC.
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CHAIN OF CUSTODY RECORD

[IM3] Plant-WDR-349]

COC Number

10 Days

TURNAROUND TIME

DATE 02/21/12

PAGE 1 OF 1

800092

COMPANY	E2	DATE		TIME	DESCRIPTION	COC (218.6) Lab Filtered	X	Total Metals (200.7) Cr, Mn	X	Specific Conductance (120.1)	X	TDS (SM254OC)	X	Turbidity (SM2130)	X	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.																
SC-700B-WDR-349	DATE		02/21/12	TIME	1340	DESCRIPTION		Water								
NUMBER OF CONTAINERS																
3																
TOTAL NUMBER OF CONTAINERS																
3																

ALERT!!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD									
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SAMPLE CONDITIONS					
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL	WARM			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES	NO			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:					
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

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
2/15/12	900180	7	5mL	9.5	9 Am	Gw
↓	900186-1	7	5mL	9.5	11 Am	Gw
↓	↓ -3	↓	↓	↓	11:10 Am	↓
↓	900187-1	↓	↓	↓	11:20 Am	↓
↓	↓ -3	↓	↓	↓	11:30 Am	↓
2/17/12	800023-15	7	5mL	9.5	10:00 Am	Gw
↓	↓ -16	↓	↓	↓	10:10 Am	↓
↓	↓ -17	↓	↓	↓	10:15 Am	↓
2/17/12	800024-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
2/17/12	800025-1	9.5	N/A	N/A	N/A	Gw
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
2/21/12	800057-1	7	5mL	9.5	8:30 Am	Gw
↓	↓ -2	↓	↓	↓	8:40 Am	↓
↓	↓ -3	↓	↓	↓	8:45 Am	↓
↓	↓ -4	↓	↓	↓	8:50 Am	↓
↓	↓ -5	↓	↓	↓	8:55 Am	↓
↓	↓ -6	↓	↓	↓	9:05 Am	↓
↓	↓ -7	↓	↓	↓	9:15 Am	↓
↓	↓ -8	↓	↓	↓	9:25 Am	↓
↓	↓ -9	↓	↓	↓	9:30 Am	↓
↓	↓ -10	↓	↓	↓	9:35 Am	↓
↓	↓ -11	↓	↓	↓	9:40 Am	↓
2/22/12	800092	7	5mL	9.5	9 Am	Gw

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
800046	<1	>2	2-17-12	B.E.	NO	yes 2/17-12 18:20
800050(1-15)	<1	72				
800051(1-12)						
800078	<1	<2	2/21/12	ES	NO	—
800078 800055						—
800078 800021					yes	—
80002-1	<1	72			NO	yes w/ 9:00
800061-1	<1	>2		B.E.	NO	yes 02-21-12 14:00
25 samples - 2						
25 samples - 4						
800057(1-11)	>1	>2	2/21/12	M.M.	yes	yes @ 16:00
800092	<1	>2	2/22/12	M.M.	yes	3010A
800093(1-2)	<1	<2				
800077(1-10)	<1	72	2/22/12	ES	NO	yes w/ 3:00 p.m.
800078(1-26)						
800079(1-24)						
800080(1-28)						
800081	<1	<2	2/22/12	ES	NO	—
800109						
800110						
800111						
800112						
800113						
800021	72	<1	2/23/12	ES	yes	3010A
800103						
800110						
800120						
800085(1-2)	<1	>2	2/24/12	ES	NO	yes w/ 4:00 p.m.
800118(10-12)						
800122-2						
800129(1-3)						
800143(1-3)						
800150(1-10)	<1	<2	2/24/12	M.M.	yes	3010A
800151(1-8)						
800152(1-6)						
800155(1-3-8)	<1	<2	2/28/12	M.M.	yes	3010A
800176(1-6)						
800177(1-2)	72	<2	2/28/12	ES	yes	3010A
800178						
800179						
800181						
800180	<1	<2	2/28/12	ES	NO	—
800190						
800195(1-10)	<1	>2				yes w/ 9:00 a.m.
800200(1-3)	>1	<2	2/28/12	ES	yes	3010A
800213						
800187	<1	>2			NO	yes w/ 1:00 p.m.
800196(12,4)						
800238(T)	<1	>2(pH6)	2/29/12	ES	yes	3010A pH6



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 80092

Date Delivered: 02/21/12 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)? 4.6°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. Shabazz

ALERT!!
Level III QC

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
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www.truesdail.com

April 10, 2012

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

Revision 1: 04/10/12

Dear Mr. Duffy:

SUBJECT: REVISED CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-350 PROJECT,
GROUNDWATER MONITORING, TLI No.: 800238

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-350 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 February 28, 2012, 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.

On March 16, 2012, Mr. Duffy requested that the sample for Total Dissolved Solids be re-analyzed. The result from the re-analysis was 4460 mg/L versus 6080 mg/L from the original analysis. After discussing the results with Mr. Duffy, the result from the re-analysis was reported as it more closely matched historical data as well as the calculated result based on the Specific Conductivity.

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.: 800238

Date: March 12, 2012

Collected: February 28, 2012

Received: February 28, 2012

ANALYST LIST

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



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.: 800238
Date Received: February 28, 2012

Analytical Results Summary

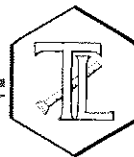
Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800238-001	SC-700B-WDR-350	E120.1	NONE	2/28/2012	14:39	EC	7220	umhos/cm	2.00
800238-001	SC-700B-WDR-350	E200.8	NONE-digested	2/28/2012	14:39	Chromium	ND	ug/L	1.0
800238-001	SC-700B-WDR-350	E200.8	NONE-digested	2/28/2012	14:39	Manganese	16.9	ug/L	1.0
800238-001	SC-700B-WDR-350	E218.6	LABFLT	2/28/2012	14:39	Chromium, hexavalent	ND	ug/L	0.20
800238-001	SC-700B-WDR-350	SM2130B	NONE	2/28/2012	14:39	Turbidity	ND	NTU	0.100
800238-001	SC-700B-WDR-350	SM2540C	NONE	2/28/2012	14:39	Total Dissolved Solids	6080	mg/L	250

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

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

TRUESDAIL LABORATORIES, INC.

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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

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 800238

Page 1 of 8

Printed 3/12/2012

Samples Received on 2/28/2012 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-350	800238-001	02/28/2012 14:39	Water

Specific Conductivity - EPA 120.1

Batch 03EC12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800238-001 Specific Conductivity	umhos/cm	03/02/2012	1.00	0.0950	2.00	7220

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	914	915	0.109	0 - 10

Duplicate

Lab ID = 800240-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	972	923	5.17	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	690.	706	97.7	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	696	706	98.6	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	681	706	96.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	947	998	94.9	90 - 110

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

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/12/2012

Chrome VI by EPA 218.6

Batch: 03CrH12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800238-001 Chromium, Hexavalent	ug/L	03/02/2012 16:30	1.05	0.0260	0.20	ND

Method Blank

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

Duplicate

Lab ID = 800175-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.09	1.10	0.776	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.200	0.200	99.8	70 - 120

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.86	5.00	97.2	90 - 110

Matrix Spike

Lab ID = 800175-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.28	6.10(5.00)	104.	90 - 110

Matrix Spike

Lab ID = 800175-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.00(1.00)	105.	90 - 110

Matrix Spike

Lab ID = 800175-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.60	6.33(5.00)	105.	90 - 110

Matrix Spike

Lab ID = 800175-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.58	6.35(5.00)	105.	90 - 110

Matrix Spike

Lab ID = 800175-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.62	1.60(1.00)	102.	90 - 110

Matrix Spike

Lab ID = 800175-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.53	1.50(1.00)	103.	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/12/2012

Matrix Spike

Lab ID = 800175-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.89	1.83(1.00)	105.	90 - 110

Matrix Spike

Lab ID = 800175-008

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.00	9.56(5.00)	109.	90 - 110

Matrix Spike

Lab ID = 800238-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.10	1.11(1.00)	99.1	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.91	5.00	98.2	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	10.4	10.0	104.	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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/12/2012

Metals by EPA 200.8, Total

Batch: 030112A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800238-001 Chromium	ug/L	03/01/2012 18:54	5.00	0.110	1.0	ND
Manganese	ug/L	03/01/2012 18:54	5.00	0.285	1.0	16.9

Method Blank

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

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.213	0.200	106.	70 - 130
Manganese	ug/L	1.00	0.223	0.200	112.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	97.9	100.	97.9	85 - 115
Manganese	ug/L	5.00	95.7	100.	95.7	85 - 115

Matrix Spike

Lab ID = 800238-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	107.	100.(100.)	107.	75 - 125
Manganese	ug/L	5.00	116.	117.(100.)	99.0	75 - 125

Matrix Spike Duplicate

Lab ID = 800238-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	102.	100.(100.)	102.	75 - 125
Manganese	ug/L	5.00	115.	117.(100.)	98.3	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110
Manganese	ug/L	1.00	9.79	10.0	97.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.52	10.0	95.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.32	10.0	93.2	90 - 110

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

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Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.57	10.0	95.7	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.18	10.0	91.8	80 - 120

Total Dissolved Solids by SM 2540 C

Batch 03TDS12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800238-001 Total Dissolved Solids	mg/L	03/01/2012	1.00	0.400	250.	6080

Method Blank

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

Duplicate

Lab ID = 800238-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	6100	6080	0.328	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

Turbidity by SM 2130 B

Batch 02TUC12Q

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800238-001 Turbidity	NTU	02/29/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 800238-001

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	7.92	8.00	99.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.06	8.00	101.	90 - 110

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/12/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for Sean Cambl

Mona Nassimi

Manager, Analytical Services



Calculations

Date Calculated: 3/2/12

Calculation as follows:

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

C = mL of sample filtered.

ND = not detected (below the reporting limit)

Analyst Signature _____



Reviewer Printed Name

Reviewer Signature

TDS/EC CHECK

Date Calculated: 3/2/12

[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-350]

800238

COC Number

10 Days

TURNAROUND TIME

DATE 02/28/12

PAGE 1 OF 1

COMPANY	E2	DATE		TIME	DESCRIPTION	COMMENTS	
PROJECT NAME	PG&E Topock	02/28/12		14:39	Water		
PHONE	(530) 229-3303 FAX (530) 339-3303						
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612						
P.O. NUMBER	424973.01.DM						
SAMPLERS (SIGNATURE)	C. Knight						
SAMPLE I.D.	SC-700B-WDR-350						
C6 (218.6) Lab Filtered						X	
Total Metals (200.7) Cr, Mn						X	
Specific Conductance (120.1)						X	
TDS (SM2540C)						X	
Turbidity (SM2130)						X	
NUMBER OF CONTAINERS						3	DH=6 (200.7)
TOTAL NUMBER OF CONTAINERS						3	

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	WARM	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time		<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.8 °C
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				
SPECIAL REQUIREMENTS:				CUSTODY SEALED YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

[illegible]

Turbidity/pH Check

[illegible]



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 800238

Date Delivered: 02/28/12 Time: 21:00 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)? 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.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: L. Shabunina

Analytical Bench Log Book

WDR pH Results

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

Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover Sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
SC-700B	2-7-12	12:45	2-7-12	12:50	METER #1	2-7-12	1:45	-56.2	RON PHILIPS	7.3

Notes:

SC-100B	2-7-12	12:30	2-7-12	12:35	METER #1	2-7-12	1:45	-56.2	RON PHILIPS	7.2
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Notes:

SC-700B	2-14-12	13:00	2-14-12	13:05	METER #1	2-14-12	02:40	-56.3	RON PHILIPS	7.0
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Notes:

SC-700B	2-21-12	13:40	2-21-12	13:45	METER #1	2-21-12	01:00	-56.1	C. Knight	6.9
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Notes:

SC-700B	2-28-12	14:39	2-28-12		METER #1	2-28-12	01:00	-56.4	C. Knight	7.3
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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

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

March 21, 2012

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

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-351 PROJECT, GROUNDWATER
MONITORING,
TLI No.: 800349

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-351 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 March 6, 2012, 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.


Upon receipt of the samples at the lab, it was noted that the sample time on three of the sample containers for sample SC-100B-WDR-351 did not match the sample time on the chain of custody. Instead, they had the sample time of sample SC-700B-WDR-351. Mr. Shawn Duffy was notified and he requested that the three sample containers with the sample time matching that on the COC (13:02) be used for all analyses for that sample. The three sample containers with the discrepant sample time were not used.

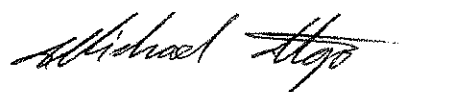
Due to the discrepancy between the Total Dissolved Chromium (1.9 ug/L) and Hexavalent Chromium (ND<1.0 ug/L) results for sample SC-700B-WDR-351, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers were digested and analyzed for Total Dissolved Chromium. The results were both ND<1.0 ug/L. The original digestate was re-analyzed for confirmation and yielded a result of ND<1.0 ug/L. The result from the re-digested Total Dissolved Chromium was reported as it more closely matched the Hexavalent Chromium result.

No other violations or 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

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.: 424973.01.DM

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

Laboratory No.: 800349

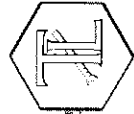
Date: March 21, 2012

Collected: March 6, 2012

Received: March 6, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2320B	Total Alkalinity	Bitra Emami
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	Bitra Emami
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	George Wahba



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.: 800349
Date Received: March 6, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800349-001	SC-700B-WDR-351	E120.1	NONE	3/6/2012	13:31	EC	7500	umhos/cm	2.00
800349-001	SC-700B-WDR-351	E200.7	NONE-digested	3/6/2012	13:31	Aluminum	ND	ug/L	50.0
800349-001	SC-700B-WDR-351	E200.7	NONE-digested	3/6/2012	13:31	BORON	990	ug/L	200
800349-001	SC-700B-WDR-351	E200.7	NONE-digested	3/6/2012	13:31	Iron	ND	ug/L	20.0
800349-001	SC-700B-WDR-351	E200.7	NONE-digested	3/6/2012	13:31	Molybdenum	17.8	ug/L	10.0
800349-001	SC-700B-WDR-351	E200.7	NONE-digested	3/6/2012	13:31	Zinc	ND	ug/L	10.0
800349-001	SC-700B-WDR-351	E200.8	NONE-digested	3/6/2012	13:31	Antimony	ND	ug/L	10.0
800349-001	SC-700B-WDR-351	E200.8	NONE-digested	3/6/2012	13:31	Arsenic	ND	ug/L	1.0
800349-001	SC-700B-WDR-351	E200.8	NONE-digested	3/6/2012	13:31	Barium	14.6	ug/L	10.0
800349-001	SC-700B-WDR-351	E200.8	NONE-digested	3/6/2012	13:31	Chromium	ND	ug/L	1.0
800349-001	SC-700B-WDR-351	E200.8	NONE-digested	3/6/2012	13:31	Copper	ND	ug/L	5.0
800349-001	SC-700B-WDR-351	E200.8	NONE-digested	3/6/2012	13:31	Lead	ND	ug/L	10.0
800349-001	SC-700B-WDR-351	E200.8	NONE-digested	3/6/2012	13:31	Manganese	5.6	ug/L	1.0
800349-001	SC-700B-WDR-351	E200.8	NONE-digested	3/6/2012	13:31	Nickel	ND	ug/L	10.0
800349-001	SC-700B-WDR-351	E218.6	LABFLT	3/6/2012	13:31	Chromium, hexavalent	ND	ug/L	1.0
800349-001	SC-700B-WDR-351	E300	NONE	3/6/2012	13:31	Fluoride	2.12	mg/L	0.500
800349-001	SC-700B-WDR-351	E300	NONE	3/6/2012	13:31	Nitrate as N	3.14	mg/L	1.00
800349-001	SC-700B-WDR-351	E300	NONE	3/6/2012	13:31	Sulfate	523	mg/L	25.0
800349-001	SC-700B-WDR-351	SM2130B	NONE	3/6/2012	13:31	Turbidity	ND	NTU	0.100
800349-001	SC-700B-WDR-351	SM2540C	NONE	3/6/2012	13:31	Total Dissolved Solids	4460	mg/L	250
800349-001	SC-700B-WDR-351	SM4500NH3D	NONE	3/6/2012	13:31	Ammonia-N	ND	mg/L	0.500
800349-001	SC-700B-WDR-351	SM4500NO2B	NONE	3/6/2012	13:31	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
800349-002	SC-100B-WDR-351	E120.1	NONE	3/6/2012	13:02	EC	7830	umhos/cm	2.00
800349-002	SC-100B-WDR-351	E200.7	NONE-digested	3/6/2012	13:02	Aluminum	ND	ug/L	50.0
800349-002	SC-100B-WDR-351	E200.7	NONE-digested	3/6/2012	13:02	BORON	1030	ug/L	200
800349-002	SC-100B-WDR-351	E200.7	NONE-digested	3/6/2012	13:02	Iron	ND	ug/L	20.0
800349-002	SC-100B-WDR-351	E200.7	LABFLT-digested	3/6/2012	13:02	Iron	ND	ug/L	20.0
800349-002	SC-100B-WDR-351	E200.7	NONE-digested	3/6/2012	13:02	Molybdenum	19.6	ug/L	10.0
800349-002	SC-100B-WDR-351	E200.7	NONE-digested	3/6/2012	13:02	Zinc	ND	ug/L	10.0
800349-002	SC-100B-WDR-351	E200.8	NONE-digested	3/6/2012	13:02	Antimony	ND	ug/L	10.0
800349-002	SC-100B-WDR-351	E200.8	NONE-digested	3/6/2012	13:02	Arsenic	3.7	ug/L	1.0
800349-002	SC-100B-WDR-351	E200.8	NONE-digested	3/6/2012	13:02	Barium	25.6	ug/L	10.0
800349-002	SC-100B-WDR-351	E200.8	NONE-digested	3/6/2012	13:02	Chromium	811	ug/L	1.0
800349-002	SC-100B-WDR-351	E200.8	NONE-digested	3/6/2012	13:02	Copper	ND	ug/L	5.0
800349-002	SC-100B-WDR-351	E200.8	NONE-digested	3/6/2012	13:02	Lead	ND	ug/L	10.0
800349-002	SC-100B-WDR-351	E200.8	LABFLT-digested	3/6/2012	13:02	Manganese	6.4	ug/L	1.0
800349-002	SC-100B-WDR-351	E200.8	NONE-digested	3/6/2012	13:02	Manganese	6.4	ug/L	1.0
800349-002	SC-100B-WDR-351	E200.8	NONE-digested	3/6/2012	13:02	Nickel	ND	ug/L	10.0
800349-002	SC-100B-WDR-351	E218.6	LABFLT	3/6/2012	13:02	Chromium, hexavalent	805	ug/L	10.5
800349-002	SC-100B-WDR-351	E300	NONE	3/6/2012	13:02	Fluoride	2.48	mg/L	0.500
800349-002	SC-100B-WDR-351	E300	NONE	3/6/2012	13:02	Nitrate as N	3.28	mg/L	1.00
800349-002	SC-100B-WDR-351	E300	NONE	3/6/2012	13:02	Sulfate	560	mg/L	25.0
800349-002	SC-100B-WDR-351	SM2130B	NONE	3/6/2012	13:02	Turbidity	ND	NTU	0.100
800349-002	SC-100B-WDR-351	SM2320B	NONE	3/6/2012	13:02	Alkalinity	148	mg/L	5.00
800349-002	SC-100B-WDR-351	SM2320B	NONE	3/6/2012	13:02	Bicarbonate	148	mg/L	5.00
800349-002	SC-100B-WDR-351	SM2320B	NONE	3/6/2012	13:02	Carbonate	ND	mg/L	5.00
800349-002	SC-100B-WDR-351	SM2540C	NONE	3/6/2012	13:02	Total Dissolved Solids	4710	mg/L	250
800349-002	SC-100B-WDR-351	SM4500NH3D	NONE	3/6/2012	13:02	Ammonia-N	ND	mg/L	0.500
800349-002	SC-100B-WDR-351	SM4500NO2B	NONE	3/6/2012	13:02	Nitrite as N	ND	mg/L	0.0050
800349-002	SC-100B-WDR-351	SM4500-PB_E	NONE	3/6/2012	13:02	Total Phosphorous-P	ND	mg/L	0.0200
800349-002	SC-100B-WDR-351	SM4500SI	NONE	3/6/2012	13:02	Soluble Silica	20.2	mg/L	1.00
800349-002	SC-100B-WDR-351	SM5310C	NONE	3/6/2012	13:02	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.

EXCELLENCE IN INDEPENDENT TESTING



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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

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 800349

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Printed 3/21/2012

Samples Received on 3/6/2012 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-351	800349-001	03/06/2012 13:31	Water
SC-100B-WDR-351	800349-002	03/06/2012 13:02	Water

Anions By I.C. - EPA 300.0

Batch 03AN12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-001 Fluoride	mg/L	03/07/2012 11:27	5.00	0.155	0.500	2.12
Nitrate as Nitrogen	mg/L	03/07/2012 11:27	5.00	0.135	1.00	3.14
Sulfate	mg/L	03/07/2012 15:02	50.0	5.70	25.0	523.
800349-002 Fluoride	mg/L	03/07/2012 11:39	5.00	0.155	0.500	2.48
Nitrate as Nitrogen	mg/L	03/07/2012 11:39	5.00	0.135	1.00	3.28
Sulfate	mg/L	03/07/2012 15:13	50.0	5.70	25.0	560.

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 = 800002-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Sulfate	mg/L	50.0	254.	255	0.461	0 - 20

Duplicate

Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	5.00	2.47	2.48	0.404	0 - 20
Nitrate as Nitrogen	mg/L	5.00	3.30	3.28	0.487	0 - 20

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/21/2012

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.12	4.00	103.	90 - 110
Sulfate	mg/L	1.00	20.1	20.0	101.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.04	4.00	101.	90 - 110

Matrix Spike

Lab ID = 800002-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Sulfate	mg/L	50.0	780.	755(500.)	105.	85 - 115

Matrix Spike

Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	5.00	22.7	22.5(20.0)	101.	85 - 115
Nitrate as Nitrogen	mg/L	5.00	23.9	23.3(20.0)	103.	85 - 115

MRCCS - Secondary

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	20.1	20.0	100.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.02	4.00	100.	90 - 110

MRCVS - Primary

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

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	14.9	15.0	99.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	14.9	15.0	99.2	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

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

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Project Number: 424973.01.DM

Printed 3/21/2012

Nitrite SM 4500-NO2 B

Batch 03NO212C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-001 Nitrite as Nitrogen	mg/L	03/07/2012 14:10	1.00	0.000360	0.0050	ND
800349-002 Nitrite as Nitrogen	mg/L	03/07/2012 13:57	1.00	0.000360	0.0050	ND

Method Blank

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

Duplicate

Lab ID = 800320-010

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	0.0404	0.0400	101	90 - 110

Matrix Spike

Lab ID = 800320-010

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0181	0.0200(0.0200)	90.5	80 - 120

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0205	0.0200	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0209	0.0200	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0209	0.0200	104.	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/21/2012

Alkalinity by SM 2320B

Batch: 03ALK12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-002 Alkalinity as CaCO ₃	mg/L	03/13/2012	1.00	1.68	5.00	148
Bicarbonate (Calculated)	mg/L	03/13/2012	1.00	1.68	5.00	148
Carbonate (Calculated)	mg/L	03/13/2012	1.00	1.68	5.00	ND

Method Blank

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

Duplicate

Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	149	148	0.673	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	107	100.	107	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	103	100.	103	90 - 110

Matrix Spike

Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	240.	248(100.)	92.0	75 - 125



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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/21/2012

Specific Conductivity - EPA 120.1

Batch 03EC12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-001 Specific Conductivity	umhos/cm	03/09/2012	1.00	0.0950	2.00	7500
800349-002 Specific Conductivity	umhos/cm	03/09/2012	1.00	0.0950	2.00	7830

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7830	7830	0.00	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	698	706	98.9	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	699	706	99.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	1000	998	100.	90 - 110


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
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Project Number: 424973.01.DM
Printed 3/21/2012
Chrome VI by EPA 218.6

Batch 03CrH12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-001 Chromium, Hexavalent	ug/L	03/07/2012 14:48	5.25	0.136	1.0	ND
800349-002 Chromium, Hexavalent	ug/L	03/07/2012 14:01	52.5	1.36	10.5	805.

Method Blank

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

Duplicate

Lab ID = 800332-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	1.12	1.13	0.577	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.213	0.200	106.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.84	5.00	96.7	90 - 110

Matrix Spike

Lab ID = 800332-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	6.55	6.43(5.30)	102.	90 - 110

Matrix Spike

Lab ID = 800348-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	18.2	18.5(10.6)	97.8	90 - 110

Matrix Spike

Lab ID = 800349-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.16	5.42(5.25)	95.2	90 - 110

Matrix Spike

Lab ID = 800349-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.10	1.19(1.06)	91.7	90 - 110

Matrix Spike

Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	52.5	1800	1860(1050)	94.7	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.84	5.00	96.8	90 - 110



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/21/2012

Metals by EPA 200.7, Total

Batch 031912B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-001 Aluminum	ug/L	03/19/2012 15:30	1.00	2.83	50.0	ND
Boron	ug/L	03/19/2012 15:30	1.00	1.50	200.	990.
Iron	ug/L	03/19/2012 15:30	1.00	1.34	20.0	ND
Molybdenum	ug/L	03/19/2012 15:30	1.00	4.02	10.0	17.8
Zinc	ug/L	03/19/2012 15:30	1.00	3.89	10.0	ND
800349-002 Aluminum	ug/L	03/19/2012 15:49	1.00	2.83	50.0	ND
Boron	ug/L	03/19/2012 15:49	1.00	1.50	200.	1030
Iron	ug/L	03/19/2012 15:49	1.00	1.34	20.0	ND
Molybdenum	ug/L	03/19/2012 15:49	1.00	4.02	10.0	19.6
Zinc	ug/L	03/19/2012 15:49	1.00	3.89	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Aluminum	ug/L	1.00	ND
Iron	ug/L	1.00	ND
Zinc	ug/L	1.00	ND
Boron	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

Duplicate

Lab ID = 800349-001

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
Zinc	ug/L	1.00	ND	0.00	0	0 - 20
Boron	ug/L	1.00	984.	990.	0.577	0 - 20
Molybdenum	ug/L	1.00	17.3	17.8	2.85	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	114.	100.	114.	85 - 115
Iron	ug/L	1.00	101.	100.	101.	85 - 115
Zinc	ug/L	1.00	96.7	100.	96.7	85 - 115
Boron	ug/L	1.00	95.4	100.	95.4	85 - 115
Molybdenum	ug/L	1.00	95.2	100.	95.2	85 - 115

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

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Matrix Spike

Lab ID = 800349-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	1.00	871.	1000(1000)	87.1	75 - 125
Iron	ug/L	1.00	900.	1000(1000)	90.0	75 - 125
Zinc	ug/L	1.00	1070	1000(1000)	107.	75 - 125
Boron	ug/L	1.00	1970	1990(1000)	97.8	75 - 125
Molybdenum	ug/L	1.00	979.	1020(1000)	96.1	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	4930	5000	98.7	90 - 110
Iron	ug/L	1.00	4970	5000	99.3	90 - 110
Zinc	ug/L	1.00	5160	5000	103.	90 - 110
Boron	ug/L	1.00	4800	5000	96.0	90 - 110
Molybdenum	ug/L	1.00	4930	5000	98.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5000	5000	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5040	5000	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4980	5000	99.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5000	5000	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5120	5000	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5250	5000	105.	90 - 110
Boron	ug/L	1.00	4800	5000	96.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Boron	ug/L	1.00	4750	5000	94.9	90 - 110

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

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Metals by EPA 200.8, Total

Batch 031312A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-001 Antimony	ug/L	03/13/2012 17:40	5.00	0.120	10.0	ND
Barium	ug/L	03/13/2012 17:40	5.00	0.200	10.0	14.6
Copper	ug/L	03/13/2012 17:40	5.00	0.125	5.0	ND
Lead	ug/L	03/13/2012 17:40	5.00	0.110	10.0	ND
Manganese	ug/L	03/13/2012 17:40	5.00	0.285	1.0	5.6
Nickel	ug/L	03/13/2012 17:40	5.00	0.0750	10.0	ND
800349-002 Antimony	ug/L	03/13/2012 18:16	5.00	0.120	10.0	ND
Barium	ug/L	03/13/2012 18:16	5.00	0.200	10.0	25.6
Chromium	ug/L	03/13/2012 18:16	5.00	0.110	1.0	811.
Copper	ug/L	03/13/2012 18:16	5.00	0.125	5.0	ND
Lead	ug/L	03/13/2012 18:16	5.00	0.110	10.0	ND
Manganese	ug/L	03/13/2012 18:16	5.00	0.285	1.0	6.4
Nickel	ug/L	03/13/2012 18:16	5.00	0.0750	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Barium	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Nickel	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

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	1.02	1.00	102.	70 - 130
Chromium	ug/L	1.00	0.229	0.200	114.	70 - 130
Nickel	ug/L	1.00	1.02	1.00	102	70 - 130
Antimony	ug/L	1.00	1.04	1.00	104.	70 - 130
Copper	ug/L	1.00	1.02	1.00	102.	70 - 130
Lead	ug/L	1.00	1.03	1.00	103.	70 - 130
Manganese	ug/L	1.00	0.214	0.200	107.	70 - 130

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Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	5.00	97.6	100.	97.6	85 - 115
Chromium	ug/L	5.00	97.7	100.	97.7	85 - 115
Nickel	ug/L	5.00	96.9	100.	96.9	85 - 115
Antimony	ug/L	5.00	99.7	100.	99.7	85 - 115
Copper	ug/L	5.00	101.	100.	101	85 - 115
Lead	ug/L	5.00	94.8	100.	94.8	85 - 115
Manganese	ug/L	5.00	93.2	100.	93.2	85 - 115

Matrix Spike

Lab ID = 800349-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	5.00	115.	115.(100.)	100.	75 - 125
Chromium	ug/L	5.00	103.	102.(100.)	101.	75 - 125
Nickel	ug/L	5.00	96.9	100.(100.)	96.9	75 - 125
Antimony	ug/L	5.00	100.	100.(100.)	100.	75 - 125
Copper	ug/L	5.00	94.2	100.(100.)	94.2	75 - 125
Lead	ug/L	5.00	92.1	100.(100.)	92.1	75 - 125
Manganese	ug/L	5.00	99.2	106.(100.)	93.6	75 - 125

Matrix Spike Duplicate

Lab ID = 800349-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	5.00	112.	115.(100.)	97.5	75 - 125
Chromium	ug/L	5.00	97.3	102.(100.)	95.4	75 - 125
Nickel	ug/L	5.00	92.3	100.(100.)	92.3	75 - 125
Antimony	ug/L	5.00	97.4	100.(100.)	97.4	75 - 125
Copper	ug/L	5.00	90.8	100.(100.)	90.8	75 - 125
Lead	ug/L	5.00	90.7	100.(100.)	90.7	75 - 125
Manganese	ug/L	5.00	96.8	106.(100.)	91.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	10.0	10.0	100.	90 - 110
Chromium	ug/L	1.00	9.88	10.0	98.8	90 - 110
Nickel	ug/L	1.00	9.67	10.0	96.7	90 - 110
Antimony	ug/L	1.00	9.17	10.0	91.7	90 - 110
Copper	ug/L	1.00	10.0	10.0	100.	90 - 110
Lead	ug/L	1.00	9.51	10.0	95.1	90 - 110
Manganese	ug/L	1.00	9.56	10.0	95.6	90 - 110



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Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.59	10.0	95.9	80 - 120
Nickel	ug/L	1.00	9.43	10.0	94.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	9.48	10.0	94.8	80 - 120
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		
Copper	ug/L	1.00	9.93	10.0	99.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	10.0	10.0	100.	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		
Manganese	ug/L	1.00	9.64	10.0	96.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.70	10.0	97.0	80 - 120

Serial Dilution

Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	25.0	26.8	25.6	4.39	0 - 10
Chromium	ug/L	25.0	802.	811	1.09	0 - 10



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Metals by EPA 200.8, Total

Batch 031412B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-001 Arsenic	ug/L	03/15/2012 02:57	5.00	0.285	1.0	ND
800349-002 Arsenic	ug/L	03/15/2012 03:47	5.00	0.285	1.0	3.7

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND

Duplicate

Lab ID = 800349-001

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

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.218	0.200	109.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	97.3	100.	97.3	85 - 115

Matrix Spike

Lab ID = 800349-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	102.	100.(100.)	102.	75 - 125

Matrix Spike Duplicate

Lab ID = 800349-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	100.	100.(100.)	100.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.16	10.0	91.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.85	10.0	98.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.44	10.0	94.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.04	10.0	90.4	90 - 110

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Metals by EPA 200.8, Total

Batch 031412B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-001 Chromium	ug/L	03/15/2012 07:53	5.00	0.110	1.0	ND

Method Blank

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

Duplicate

Lab ID = 800460-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	7.29	7.38	1.23	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.202	0.200	101.	70 - 130
Manganese	ug/L	1.00	0.229	0.200	115.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	113.	100.	113.	85 - 115
Manganese	ug/L	5.00	98.3	100.	98.3	85 - 115

Matrix Spike

Lab ID = 800460-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	97.1	100.(100.)	97.1	75 - 125
Manganese	ug/L	5.00	102.	107.(100.)	94.5	75 - 125

Matrix Spike Duplicate

Lab ID = 800460-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.6	100.(100.)	99.6	75 - 125
Manganese	ug/L	5.00	100.	107.(100.)	92.8	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.41	10.0	94.1	90 - 110
Manganese	ug/L	1.00	9.56	10.0	95.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.82	10.0	98.2	90 - 110

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Reactive Silica by SM4500-Si D

Batch 03Si12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-002 Silica	mg/L	03/09/2012	25.0	0.532	1.00	20.2

Method Blank

Parameter	Unit	DF	Result
Silica	mg/L	1.00	ND

Duplicate

Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Silica	mg/L	25.0	20.2	20.2	0.152	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.204	0.220	92.7	90 - 110

Matrix Spike

Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Silica	mg/L	25.0	30.0	30.2(10.0)	98.5	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.106	0.110	96.1	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

Total Dissolved Solids by SM 2540 C

Batch 03TDS12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-001 Total Dissolved Solids	mg/L	03/07/2012	1.00	0.400	250.	4460
800349-002 Total Dissolved Solids	mg/L	03/07/2012	1.00	0.400	250.	4710

Method Blank

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

Duplicate

Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4620	4710	1.93	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

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Total Organic Carbon (T/DOC) SM 5310 C

Batch 03TOC12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-002 Total Organic Carbon	mg/L	03/07/2012 13:17	1.00	0.0103	0.300	ND

Method Blank

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

Duplicate

Lab ID = 800349-002

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	19.7	20.0	98.6	90 - 110

Matrix Spike

Lab ID = 800320-020

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	11.9	12.3(10.0)	95.9	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.87	10.0	98.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.49	10.0	94.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	10.1	10.0	101.	90 - 110



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Total Phosphate, SM 4500-PB,E

Batch: 03TP12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-002 Phosphate, Total As P	mg/L	03/08/2012	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 = 800349-002

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	0.0998	0.100	99.8	90 - 110

Matrix Spike

Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0586	0.0650(0.0650)	90.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0583	0.0600	97.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0612	0.0650	94.2	90 - 110



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Ammonia Nitrogen by SM4500-NH3D

Batch 03NH3-E12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-001 Ammonia as N	mg/L	03/07/2012	1.00	0.00120	0.500	ND
800349-002 Ammonia as N	mg/L	03/07/2012	1.00	0.00120	0.500	ND

Method Blank

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

Duplicate

Lab ID = 800349-001

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	9.44	10.0	94.4	90 - 110

Matrix Spike

Lab ID = 800349-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.03	6.00(6.00)	100.	75 - 125

Matrix Spike Duplicate

Lab ID = 800349-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.92	6.00(6.00)	98.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.92	6.00	98.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.50	6.00	108.	90 - 110


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Metals by EPA 200.8, Dissolved

Batch 031312A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-002 Manganese	ug/L	03/13/2012 17:26	5.00	0.285	1.0	6.4

Method Blank

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

Duplicate

Lab ID = 800348-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	8.92	9.00	0.915	0 - 20
Manganese	ug/L	5.00	40.1	39.5	1.58	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.229	0.200	114.	70 - 130
Manganese	ug/L	1.00	0.214	0.200	107.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	97.7	100.	97.7	85 - 115
Manganese	ug/L	5.00	93.2	100.	93.2	85 - 115

Matrix Spike

Lab ID = 800348-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	108.	109(100.)	99.5	75 - 125
Manganese	ug/L	5.00	133.	140.(100.)	93.5	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.88	10.0	98.8	90 - 110
Manganese	ug/L	1.00	9.56	10.0	95.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.52	10.0	95.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.26	10.0	92.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.98	10.0	99.8	90 - 110



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MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.15	10.0	91.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.53	10.0	95.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.24	10.0	92.4	90 - 110

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard 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	9.59	10.0	95.9	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.96	10.0	99.6	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.64	10.0	96.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.70	10.0	97.0	80 - 120

Serial Dilution

Lab ID = 800349-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	802.	811	1.09	0 - 10

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Metals by 200.7, Dissolved

Batch 031912B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-002 Iron	ug/L	03/19/2012 16:30	1.00	1.34	20.0	ND

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate

Lab ID = 800348-001

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	101.	100.	101.	85 - 115

Matrix Spike

Lab ID = 800348-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	98.0	100.(100.)	98.0	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4970	5000	99.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4980	5000	99.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5000	5000	100.	90 - 110

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2100	2000	105.	80 - 120

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2170	2000	108.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2110	2000	106.	80 - 120



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Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2120	2000	106.	80 - 120

Turbidity by SM 2130 B

Batch 03TUC12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800349-001 Turbidity	NTU	03/07/2012	1.00	0.0140	0.100	ND
800349-002 Turbidity	NTU	03/07/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 800349-001

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

Lab Control Sample


Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.41	8.00	105.	90 - 110

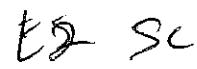
Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.20	8.00	102.	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


Mona Nassimi
Manager, Analytical Services



Calculations

Batch: 03TDS12C

Date Calculated: 3/9/12

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: 3/9/12

[illegible]

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Alkalinity by SM 2320B Calculations

Date of Analysis: 3/13/12

Analytical Batch: 03ALK12C
Matrix: Water
Date Calculated: 3/13/12

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrat Volume to reach pH 8.3	P Alkalinity as CaCO ₃	Titrat Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO ₃	RL, ppm	Total Alkalinity Reported Value	HCO ₃ Conc. as CaCO ₃ (ppm)	CO ₃ Alkalinity as CaCO ₃ (ppm)	OH Alkalinity as CaCO ₃ (ppm)	Low Alkalinity as CaCO ₃ (<20ppm)
BLANK	6.99	50	0.02		0.0	0.05		1.0	5	ND	ND	ND	ND	
800349-2	7.94	50	0.02		0.0	7.40		148.0	5	148.0	148.0	ND	ND	
800349-2 D	7.95	50	0.02		0.0	7.45		149.0	5	149.0	149.0	ND	ND	
800349-2 MS	9.89	50	0.02	2.30	46.0	12.00		240.0	5	240.0	148.0	92	ND	
LCS	10.25	50	0.02	2.2	44.0	5.35		107.0	5	107.0	19.0	88	ND	
LCSD	10.16	50	0.02	2.5	50.0	5.15		103.0	5	103.0	3.0	100	ND	

Calculations as follows:

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

$$\text{Low Alkalinity:} = \frac{(2 \times B - C) \times N \times 50000}{\text{mL sample}}$$

Where: B = mL titrant to first recorded pH
C = Total mL titrant to reach pH 0.3 unit lower

N = Normality of standard acid

LCS = Laboratory Control Standard/Duplicate

MS/MSD = Matrix Spike/Duplicate

ND = Not Detected (below the reporting limit)

Where:

T = Total Alkalinity, mg CaCO₃/L

P = Phenolphthalein Alkalinity, mg CaCO₃/L

A = mL standard acid used

N = normality of standard acid

Blank Summary

Reporting Limit, RL	Measured Value, ppm	Accept Limit	QC Within Control?
5 ppm	2	<5	Yes

Laboratory Control Sample (LCS/LCSD) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	% Recovery	Acceptance Limit	QC Within Control?
LCS	107	100	107.0%	90-110	Yes
LCSD	103	100	103.0%	90-110	Yes

Sample Matrix Spike (MS/MSD) Summary

Lab Number	Conc of Unspk spl	Dil Factor	Added Spk Conc	MS/MSD Amt	Measrd Conc of Spk Spl	Theor Conc of Spk Spl	MS/MSD % Rec	MS Accept Limit	QC Within Control?	RPD Accept Limit	QC Within Control?
800349-2	148	1	100	100	240	248.00	92%	75-125	Yes		

BITA

Analyst Printed Name
ALK_3-13-2012

Analyst Signature

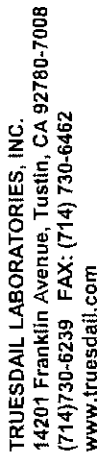
Hope T.

Reviewer Printed Name

Reviewer Signature

Duplicate Determination Difference Summary

QC Std I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Acceptance Limit	QC Within Control?
800349-2	148	149	0.7%	≤20%	Yes



COC Number

TURNAROUND TIME

[מסמך מס' 1000]

PAGE 1 OF 1

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[illegible]

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"/>	3.8 °C
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				

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
3/1/12	800258-1	9.5	N/A	N/A	N/A	GW
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
↓	↓ -8	↓	↓	↓	↓	↓
↓	↓ -9	↓	↓	↓	↓	↓
↓	↓ -10	↓	↓	↓	↓	↓
↓	↓ -11	↓	↓	↓	↓	↓
3/2/12	800290-1	7	5 mL	9.5	3:30 pm	GW
3/6/12	800332-1	7	5 mL	9.5	4:00 pm	GW
↓	↓ -3	↓	↓	↓	4:10 pm	↓
↓	↓ -4	↓	↓	↓	4:15 pm	↓
↓	↓ -5	↓	↓	↓	4:25 pm	↓
3/7/12	800348-1	7	5 mL	9.5	9:30 Am	GW
↓	↓ -2	↓	↓	↓	9:40 Am	↓
3/7/12	800349-1	7	5 mL	9.5	11:30 Am	GW
↓	↓ -2	↓	↓	↓	11:40 Am	↓
3/7/12	800374-1	7	5 mL	9.5	4:30 pm	GW
↓	↓ -3	↓	↓	↓	4:40 pm	↓
3/8/12	800396-1	7	5 mL	9.5	3:30 pm	GW
3/9/12	800421-1	9.5	N/A	N/A	N/A	GW
↓	↓ -2	↓	↓	↓	↓	↓
3/13/12	800443-1	7	5 mL	9.5	3:55 pm	GW
↓	↓ -3	↓	↓	↓	4:05 pm	↓
3/14/12	800460	7	5 mL	9.5	9 Am	GW

GW

Turbidity/pH Check

	Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
OD	800239 (1-2)	<1	<2	2/29/12	ES	yes	3010 A
T	800240 (1-12)	<1	<2	↓	↓	↓	↓
D	800240 (1-14)	↓	↓	↓	↓	↓	↓
	800257	<1	<2	3/2/12		NO	-
	800284	↓	↓	↓	↓	↓	-
	800286	↓	↓	↓	↓	↓	-
	800287 (1-3)	>1	>2	3/2/12		yes	3010 A
	800285	↓	↓	↓	↓	↓	↓
	800262	↓	↓	↓	↓	↓	↓
	800275	↓	↓	↓	↓	↓	↓
	800289	<1	>2	3/2/12	ES	NO	-
	800294 (1,4)	<1	>2	3/5/12	BE	NO	yes 15:35
	800186	Sol'd	-	3/6/12	M.M	yes	TTLC
	800303	↓	-	↓	↓	↓	↓
4/8/12 M.M	800348 (1-2)	<1	>2	3/8/12	M.M	yes	3010 A
#T	800349 (1-2)	<1	<2	3/8/12	M.M	yes	3010 A
	800298	>1	<2	3/8/12	M.M	yes	3010 A
	800321	↓	↓	↓	↓	↓	↓
	800377	↓	↓	↓	↓	↓	↓
	800376	>1	<2	3/8/12	ES	yes	3010 A
	800358-13	↓	↓	↓	↓	↓	↓
	800394	>1	<2	3/8/12	M.M	yes	3010 A
	800320-10, -23	<1	>2	3/9/12	KK	NO	yes @ 11:25 am
	800357	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800339 (1-3)	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800351 (7-9)	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800358-2	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800372 (1-10)	KK 3/12					
	800372 (10-12)	<1	>2	3/9/12	KK	NO	yes @ 11:35 am
	800391 (1-10)	<1	>2	3/9/12	KK	NO	yes @ 11:40 am
	800392 (1-10)	<1	>2	3/9/12	KK	NO	yes @ 12 pm
	800395	<1	>2	3/9/12	KK	NO	yes @ 12 pm
	800411 (1-4)	<1	>2	3/9/12	KK	NO	yes @ 12 pm
	800419 (1-20)	<1	>2	3/12/12	BE	NO	yes 12:35 PM
	800419 (1-3)	<1	>2	↓	↓	↓	↓
	800421 (1-1)	<1	<2	3/11/12	M.M	yes	3010 A
	800427 (1-4)	<1	>2	3/12/12	BE	NO	yes 13:35
T	8002580-11	<1	>2	3/12/12	BE	yes	3010 A
D	8002580-11	<1	<2	↓	↓	↓	↓
	800458 (1-6)	<1	<2	3/14/12	BE	↓	↓
T	800460	<1	<2	↓	↓	↓	↓
	800476-5	<1	>2	3/14/12	ES	NO	-
	800462	<1	<2	↓	↓	↓	↓
	800463	>1	↓	↓	↓	yes	3010 A
	800465	↓	↓	↓	↓	↓	↓
	800486 (1-11)	<1	>2	3/14/12	BE	NO	yes 15 PM
(A)	800497 (1-5)	>1	<2	3/15/12	BE	yes	3010 A
	800498 (1)	↓	↓	↓	↓	↓	↓
	800491 (1)	↓	↓	↓	↓	↓	↓
	* 800349 (1-2) (T&D)	<1	>2	3/8/12	M.M	yes	3010 A



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 800349

Date Delivered: 03/06/12 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)? 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: L. Shabunova

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

April 10, 2012

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

Revision 1: 04/10/12

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-352 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 800460

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-352 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 March 13, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

For Mona Nassimi
Manager, Analytical Services

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

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

Laboratory No.: 800460

Date: March 26, 2012

Collected: March 13, 2012

Received: March 13, 2012

ANALYST LIST

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



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.: 800460
Date Received: March 13, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800460-001	SC-700B-WDR-352	E120.1	NONE	3/13/2012	13:00	EC	7540	umhos/cm	2.00
800460-001	SC-700B-WDR-352	E200.8	NONE-digested	3/13/2012	13:00	Chromium	ND	ug/L	1.0
800460-001	SC-700B-WDR-352	E200.8	NONE-digested	3/13/2012	13:00	Manganese	7.4	ug/L	1.0
800460-001	SC-700B-WDR-352	E218.6	LABFLT	3/13/2012	13:00	Chromium, hexavalent	ND	ug/L	0.20
800460-001	SC-700B-WDR-352	SM2130B	NONE	3/13/2012	13:00	Turbidity	ND	NTU	0.100
800460-001	SC-700B-WDR-352	SM2540C	NONE	3/13/2012	13:00	Total Dissolved Solids	4380	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:

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

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

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

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 800460

Page 1 of 8

Printed 3/26/2012

Samples Received on 3/13/2012 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-352	800460-001	03/13/2012 13:00	Water

Specific Conductivity - EPA 120.1

Batch 03EC12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800460-001 Specific Conductivity	umhos/cm	03/15/2012	1.00	0.0950	2.00	7540

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7550	7540	0.132	0 - 10

Lab ID = 800460-001

Lab Control Sample

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

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	700	706	99.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	965	998	96.7	90 - 110

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

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 8

Project Number: 424973.01.DM

Printed 3/26/2012

Chrome VI by EPA 218.6

Batch 03CrH12J

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800460-001 Chromium, Hexavalent	ug/L	03/16/2012 11:39	1.05	0.0260	0.20	ND

Method Blank

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

Duplicate

Lab ID = 800517-006

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.41	6.36	0.722	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.192	0.200	96.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.79	5.00	95.8	90 - 110

Matrix Spike

Lab ID = 800460-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.24	5.40(5.25)	96.9	90 - 110

Matrix Spike

Lab ID = 800460-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.15	1.22(1.06)	92.9	90 - 110

Matrix Spike

Lab ID = 800517-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.28	6.46(5.00)	96.4	90 - 110

Matrix Spike

Lab ID = 800517-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.985	1.04(1.00)	93.9	90 - 110

Matrix Spike

Lab ID = 800517-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.56	1.58(1.00)	97.6	90 - 110

Matrix Spike

Lab ID = 800517-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.95	9.27(5.00)	93.7	90 - 110

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

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Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
Page 5 of 8
Project Number: 424973.01.DM
Printed 3/26/2012
Metals by EPA 200.8, Total

Batch 031412B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800460-001 Chromium	ug/L	03/15/2012 07:24	5.00	0.110	1.0	ND
Manganese	ug/L	03/15/2012 07:24	5.00	0.285	1.0	7.4

Method Blank

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

Duplicate

Lab ID = 800460-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	7.29	7.38	1.23	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.202	0.200	101.	70 - 130
Manganese	ug/L	1.00	0.229	0.200	115.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	113.	100.	113.	85 - 115
Manganese	ug/L	5.00	98.3	100.	98.3	85 - 115

Matrix Spike

Lab ID = 800460-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	97.1	100.(100.)	97.1	75 - 125
Manganese	ug/L	5.00	102.	107.(100.)	94.5	75 - 125

Matrix Spike Duplicate

Lab ID = 800460-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.6	100.(100.)	99.6	75 - 125
Manganese	ug/L	5.00	100.	107.(100.)	92.8	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.41	10.0	94.1	90 - 110
Manganese	ug/L	1.00	9.56	10.0	95.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.82	10.0	98.2	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 424973.01.DM

Printed 3/26/2012

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	10.2	10.0	102.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	10.1	10.0	101.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	10.1	10.0	101	80 - 120

Total Dissolved Solids by SM 2540 C

Batch 03TDS12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800460-001 Total Dissolved Solids	mg/L	03/14/2012	1.00	0.400	250.	4380

Method Blank

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

Duplicate

Lab ID = 800427-004

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	208	205	1.45	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	501	500.	100.	90 - 110

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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 3/26/2012

Turbidity by SM 2130 B

Batch 03TUC12H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800460-001 Turbidity	NTU	03/14/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 800460-001

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.40	8.00	105	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.23	8.00	103.	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for Mona Nassimi
Mona Nassimi
Manager, Analytical Services

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 03TDS12D

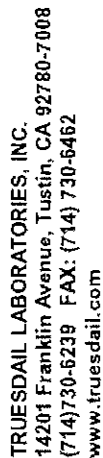
Date Calculated: 3/15/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
800420-1	950	0.57	617.5	0.87
800420-2	938	0.59	609.7	0.90
800420-3	1015	0.57	659.75	0.88
800427-2	158	0.49	102.7	0.76
800427-4	374	0.55	243.1	0.84
800459-1	5600	0.73	3640	1.12
800459-2	3290	0.66	2138.5	1.02
800459-3	802	0.60	521.3	0.93
800459-4	807	0.59	524.55	0.92
800459-5	1270	0.60	825.5	0.92
800427-4D	374	0.56	243.1	0.86
LCS				
800459-6	622	0.60	404.3	0.93
800460	7520	0.58	4888	0.90
800469	6.41	ND	4.1665	ND
800487-1	364	0.56	236.6	0.86

} BH







CHAIN OF CUSTODY RECORD

MIM3Plant-WDR-352I

COC Number

10 Days

TURNAROUND TIME

DATE 03/13/12 PAGE

09408

COMPANY	PROJECT NAME	PHONE	FAX	ADDRESS	P.O. NUMBER	SAMPLERS (SIGNATURE)	TEAM	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	COMMENTS
E2	PG&E Topock	(530) 229-3303	(530) 339-3303	155 Grand Ave Site 1000 Oakland, CA 94612	424973.01.DM	[Signature]	1	03/13/12	1300	Water	X	X	X	X	X	3	PH=6 (200.7) TOTAL NUMBER OF CONTAINERS 3

ALERT III
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"/>	3.7 °C
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	
SPECIAL REQUIREMENTS:							
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
3/1/12	800258-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
3/2/12	800290-1	7	5 mL	9.5	3:30 pm	GW
3/6/12	800332-1	7	5 mL	9.5	4:00 pm	GW
	-3				4:10 pm	
	-4				4:15 pm	
	-5				4:25 pm	
3/7/12	800348-1	7	5 mL	9.5	9:30 AM	GW
	-2				9:40 AM	
3/7/12	800349-1	7	5 mL	9.5	11:30 AM	GW
	-2				11:40 AM	
3/7/12	800374-1	7	5 mL	9.5	4:30 pm	GW
	-3				4:40 pm	
3/8/12	800396-1	7	5 mL	9.5	3:30 pm	GW
3/9/12	800421-1	9.5	N/A	N/A	N/A	GW
	-2					
3/13/12	800443-1	7	5 mL	9.5	3:55 pm	GW
	-3				4:05 pm	
3/14/12	800460	7	5 mL	9.5	9 AM	GW

GW

Turbidity/pH Check

	Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
D	800239 (1-2)	<1	<2	2/29/12	ES	yes	300 A
T	800240 (1-12)	<1	<2	↓	↓	↓	↓
D	800240 (1-14)	↓	↓	↓	↓	↓	↓
	800257	<1	<2	3/2/12		NO	-
	800284	↓	↓	↓	↓	↓	-
	800286	↓	↓	↓	↓	↓	-
	800287 (1-3)	>1	>2	3/2/12		yes	3010A
	800285	↓	↓	↓	↓	↓	↓
	800262	↓	↓	↓	↓	↓	↓
	800275	↓	↓	↓	↓	↓	↓
	800289	<1	>2	3/2/12	ES	NO	-
	800294 (1,2,4)	<1	>2	3/5/12	BE	NO	yes 15:35
	800186	Sol'd	-	3/6/12	M.M	yes	TTLC
	800303	↓	-	↓	↓	↓	↓
D	800348 (1-2)	<1	>2	3/8/12	M.M	yes	3010A
*T	800349 (1-2)	<1	<2	3/8/12	M.M	yes	3010A
	800298	>1	<2	3/8/12	M.M	yes	3010A
	800321	↓	↓	↓	↓	↓	↓
	800377	↓	↓	↓	↓	↓	↓
	800376	>1	<2	3/8/12	ES	yes	3010A
	800358-13	↓	↓	↓	↓	↓	↓
	800394	>1	<2	3/8/12	M.M	yes	3010A
	800390-10, -23	<1	>2	3/9/12	KK	NO	yes @ 11:25 am
	800357	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800339 (1-3)	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800351 (7-9)	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800358-2	<1	>2	3/9/12	KK	NO	yes @ 11:30 am
	800372 (10-12)	KK 3/9/12					
	800372 (10-12)	<1	>2	3/9/12	KK	NO	yes @ 11:35 am
	800391 (1-10)	<1	>2	3/9/12	KK	NO	yes @ 11:40 am
	800392 (1-10)	<1	>2	3/9/12	KK	NO	yes @ 12 pm
	800395	<1	>2	3/9/12	KK	NO	yes @ 12 pm
	800411 (1-4)	<1	>2	3/9/12	KK	NO	yes @ 12 pm
	800419 (1-20)	<1	>2	3/12/12	BE	NO	yes 12:35 PM
	800419 (1-3)	<1	>2	↓	↓	↓	↓
	800421 (1-1)	<1	<2	3/11/12	M.M	yes	3010A
	800427 (1-2,4)	<1	>2	3/12/12	BE	NO	yes 13:35
T	800258 (1-11)	<1	<2	3/2/12	BE	yes	3010A
D	800258 (1-11)	<1	<2	↓	↓	↓	↓
	800458 (1-6)	<1	<2	3/14/12	B.E	↓	↓
T	800460	<1	>2	↓	↓	↓	yes
	800476-5	<1	>2	3/14/12	ES	NO	-
	800462	<1	<2	↓	↓	↓	-
	800463	>1	↓	↓	↓	yes	3010A
	800465	↓	↓	↓	↓	↓	↓
	800486 (1-11)	<1	>2	3/14/12	BE	NO	yes 15 PM
(A)	800497 (1-5)	>1	<2	3/15/12	BE	yes	3010A
	800498 (1)	↓	↓	↓	↓	↓	↓
	800491 (1)	↓	↓	↓	↓	↓	↓
*	800349 (1-2) (TxD)	<1	>2	3/8/12	M.M	yes	3010A



TRUESDAIL LABORATORIES, INC.



Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 800460

Date Delivered: 03/13/12 Time: 21:00 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)? 3.7 °C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☐ Yes ☐ No ☒ N/A
12. Were samples pH checked? pH = see c.o.c. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Stabning

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

April 10, 2012

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

Revision 1: 04/10/12

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-353 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 800584

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-353 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 March 20, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

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

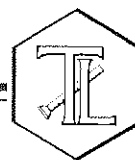
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

For Mona Nassimi
Manager, Analytical Services

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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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

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

Laboratory No.: 800584

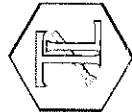
Date: April 2, 2012

Collected: March 20, 2012

Received: March 20, 2012

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	George Wahba / Melissa Scharfe



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.: 800584
Date Received: March 20, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800584-001	SC-700B-WDR-353	E120.1	NONE	3/20/2012	11:30	EC	7380	umhos/cm	2.00
800584-001	SC-700B-WDR-353	E200.8	NONE-digested	3/20/2012	11:30	Chromium	ND	ug/L	1.0
800584-001	SC-700B-WDR-353	E200.8	NONE-digested	3/20/2012	11:30	Manganese	1.4	ug/L	1.0
800584-001	SC-700B-WDR-353	E218.6	LABFLT	3/20/2012	11:30	Chromium, hexavalent	ND	ug/L	1.0
800584-001	SC-700B-WDR-353	SM2130B	NONE	3/20/2012	11:30	Turbidity	0.110	NTU	0.100
800584-001	SC-700B-WDR-353	SM2540C	NONE	3/20/2012	11:30	Total Dissolved Solids	4340	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:

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

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

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

TRUESDAIL LABORATORIES, INC.

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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

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 800584

Page 1 of 6

Printed 4/2/2012

Samples Received on 3/20/2012 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-353	800584-001	03/20/2012 11:30	Water

Specific Conductivity - EPA 120.1

Batch 03EC12F

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800584-001 Specific Conductivity	umhos/cm	03/21/2012	1.00	0.0950	2.00	7380

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 800584-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7390	7380	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

Lab Control Sample Duplicate

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	695	706	98.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	970	998	97.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	972	998	97.4	90 - 110

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**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 4/2/2012****Chrome VI by EPA 218.6**

Batch 03CrH12M

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800584-001 Chromium, Hexavalent	ug/L	03/21/2012 11:20	5.25	0.136	1.0	ND

Method Blank

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

Duplicate

Lab ID = 800584-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	0.154	0.161	4.64	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.199	0.200	99.4	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.87	5.00	97.4	90 - 110

Matrix Spike

Lab ID = 800584-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	4.98	5.41(5.25)	91.7	90 - 110

Matrix Spike

Lab ID = 800584-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.12	1.18(1.06)	94.8	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.82	5.00	96.3	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 4/2/2012

Metals by EPA 200.8, Total

Batch 032712A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800584-001 Chromium	ug/L	03/27/2012 15:42	5.00	0.110	1.0	ND
Manganese	ug/L	03/27/2012 15:42	5.00	0.285	1.0	1.4

Method Blank

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

Duplicate

Lab ID = 800584-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	1.31	1.35	2.78	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.215	0.200	107.	70 - 130
Manganese	ug/L	1.00	0.218	0.200	109.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	100.	100.	100.	85 - 115
Manganese	ug/L	5.00	99.4	100.	99.4	85 - 115

Matrix Spike

Lab ID = 800584-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	94.2	100.(100.)	94.2	75 - 125
Manganese	ug/L	5.00	91.0	101.(100.)	89.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	90 - 110
Manganese	ug/L	1.00	10.2	10.0	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.59	10.0	95.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.40	10.0	94.0	90 - 110

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 6

Project Number: 424973.01.DM

Printed 4/2/2012

Total Dissolved Solids by SM 2540 C

Batch 03TDS12F

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800584-001 Total Dissolved Solids	mg/L	03/21/2012	1.00	0.400	250.	4340

Method Blank

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

Duplicate

Lab ID = 800535-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	260.	262	0.766	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	512	500.	102.	90 - 110

Turbidity by SM 2130 B

Batch 03TUC12K

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800584-001 Turbidity	NTU	03/21/2012	1.00	0.0140	0.100	0.110

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 800584-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.112	0.110	1.80	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.02	8.00	100.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.95	8.00	99.4	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project


Page 6 of 6

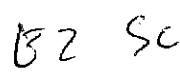
Project Number: 424973.01.DM

Printed 4/2/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for - 
Mona Nassimi
Manager, Analytical Services



Calculations

Batch: 03TDS12F

Date Calculated: 3/22/12

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: 3/22/12

[illegible]

020 026



TRUESDAIL LABORATORIES, INC.
14201 Franklin Avenue, Tustin, CA 92780-7008
(714) 730-6239 FAX: (714) 730-6462
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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-353]

COC Number

TURNAROUND TIME

DATE 03/20/12

PAGE 1 OF 1

800584

COMPANY	E2	PROJECT NAME	PG&E Topock	PHONE	(530) 229-3303	FAX	(530) 339-3303	ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612	P.O. NUMBER	424973.01.DM	TEAM	1	SAMPLERS (SIGNATURE)	<i>[Signature]</i>	DATE	03/20/12	TIME	11:30	DESCRIPTION	Water	Cr6 (218.6) Lab Filtered	X	Total Metals (200.7) Cr, Mn	X	Specific Conductance (120.1)	X	TDS (SM2540C)	X	Turbidity (SM2130)	X	COMMENTS	Rec'd 03/20/12 c/c 800584	NUMBER OF CONTAINERS	3	TOTAL NUMBER OF CONTAINERS	3
---------	----	--------------	-------------	-------	----------------	-----	----------------	---------	---	-------------	--------------	------	---	----------------------	--------------------	------	----------	------	-------	-------------	-------	--------------------------	---	-----------------------------	---	------------------------------	---	---------------	---	--------------------	---	----------	------------------------------	----------------------	---	----------------------------	---

DM = 6 (200.7)

ALERT!!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	<i>[Signature]</i>	Printed Name	Gregory Glorin	Company/ Agency	OMI	Date/ Time	3-20-12
Signature (Received)	<i>[Signature]</i>	Printed Name	H. Polito	Company/ Agency	TLI	Date/ Time	3-20-12 15:20
Signature (Relinquished)	<i>[Signature]</i>	Printed Name	H. Polito	Company/ Agency	TLI	Date/ Time	3-20-12 21:00
Signature (Received)	<i>[Signature]</i>	Printed Name	H. Polito	Company/ Agency	TLI	Date/ Time	3/20/12 21:00
Signature (Relinquished)	<i>[Signature]</i>	Printed Name		Company/ Agency		Date/ Time	
Signature (Received)	<i>[Signature]</i>	Printed Name		Company/ Agency		Date/ Time	

SAMPLE CONDITIONS

RECEIVED ☒ COOL ☐ WARM ☐

CUSTODY SEALED YES ☐ NO ☒

SPECIAL REQUIREMENTS:

046 035

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)
800504(1-3)	<1	>2	3/16/12	ES	NO	yes @ 10:00 am
800509	↓	<2	↓	↓	↓	—
800510	↓	↓	↓	↓	↓	—
800512(1-2)	>1	>2	↓	↓	yes	3010A
800517(1-9)	<1 > BE	<2	3/19/12	BE	yes	3010A
800518(1-5)	<1 > BE	<2	↓	↓	↓	3010A
800534(1-5)	<1 > BE	<2	↓	↓	↓	3010A
800533(1-33)	<1 > BE	<2	↓	↓	↓	3010A
800540	<1	<2	3-20-12	BE	NO	NO
800541	<1	<2	↓	↓	↓	↓
800547(1-2)	<1	<2	↓	↓	↓	3010A
800550	>1	<2	3-20-12	BE	yes	3010A
800546	↓	↓	↓	↓	↓	↓
800551	↓	↓	↓	↓	↓	↓
800552(1-9)	↓	↓	↓	↓	↓	↓
800554	↓	↓	↓	↓	↓	↓
800559(1-10)	<1	>2	3-21-12	↓	NO	yes 12:00
800560(1-10)	<1	>2	↓	↓	↓	12:00
800504(1-3)	<1	>2	3-21-12	↓	NO	yes
800540	<1	<2	↓	BE	↓	NO
800547(1-2)	<1	↓	3-22-12	↓	NO	NO
800541	<1	↓	↓	↓	↓	↓
800565	↓	↓	↓	↓	↓	↓
800562	↓	↓	↓	↓	↓	↓
800563	↓	↓	↓	↓	↓	↓
800564	↓	↓	↓	↓	↓	↓
800609(1-3)	<1	<2	3-22-12	↓	NO	NO
800601	↓	↓	↓	↓	↓	↓
800615(1-30)	<1	>2	↓	↓	NO	yes 8:30 am
800613(1-39)	↓	↓	↓	↓	↓	↓
800612(1-24)	↓	↓	↓	↓	↓	↓
800611(1-18)	↓	↓	↓	↓	↓	↓
800566	>1	<2	3-22-12	BE	yes	3010A
800584	<1 > BE	>2	↓	↓	yes	yes 9:30 am
800609-1	↓	>2	↓	↓	NO	3010A yes 9:30 am
800609(2-3)	<1	↓	↓	↓	NO	yes 9:30 am
800582	<1	>2	↓	↓	↓	↓
800573(1-3)	↓	↓	↓	↓	↓	↓
800607(1-12)	<1	>2	↓	↓	↓	yes 11:30 am
800610(1-6)	<1	>2	3-22-12	BE	NO	11:30 am
800628	<1	<2	↓	↓	↓	↓
800630	↓	↓	↓	↓	↓	↓
800672	<1	<2	3/26/12	KK	NO	NO
800674(1-10)	<1	>2	↓	↓	↓	yes @ 8:15 am
800675(1-10)	<1	>2	↓	↓	↓	↓
800676(1-10)	<1	>2	↓	↓	↓	↓
800649	<1	<2	3/26/12	KK	NO	NO
800650	<1	<2	↓	↓	↓	↓
800639	>1 > KK	<2	3/26/12	KK	yes	yes 3010A



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 80084

Date Delivered: 03/20/12 Time: 21:00 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)? 4.8°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: Lucia Shaburina

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

April 10, 2012

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

Revision 1: 04/10/12

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-354 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 800732

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-354 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 March 27, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

For Mona Nassimi
Manager, Analytical Services

Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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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

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

Laboratory No.: 800732

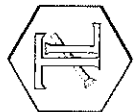
Date: April 5, 2012

Collected: March 27, 2012

Received: March 27, 2012

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	Melissa Scharfe / Maksim Gorbunov



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

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

Laboratory No.: 800732
Date Received: March 27, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800732-001	SC-700B-WDR-354	E120.1	NONE	3/27/2012	10:00	EC	7620	umhos/cm	2.00
800732-001	SC-700B-WDR-354	E200.8	NONE-digested	3/27/2012	10:00	Chromium	ND	ug/L	1.0
800732-001	SC-700B-WDR-354	E200.8	NONE-digested	3/27/2012	10:00	Manganese	4.3	ug/L	1.0
800732-001	SC-700B-WDR-354	E218.6	LABFLT	3/27/2012	10:00	Chromium, hexavalent	ND	ug/L	1.0
800732-001	SC-700B-WDR-354	SM2130B	NONE	3/27/2012	10:00	Turbidity	ND	NTU	0.100
800732-001	SC-700B-WDR-354	SM2540C	NONE	3/27/2012	10:00	Total Dissolved Solids	4480	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

Note: The following "Significant Figures" rule has been applied to all results:

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

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

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

TRUESDAIL LABORATORIES, INC.

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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

Project Number: 424973.01.DM

P.O. Number: 424973.01.DM

Release Number:

Laboratory No. 800732

Page 1 of 6

Printed 4/5/2012

Samples Received on 3/27/2012 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-354	800732-001	03/27/2012 10:00	Water

Specific Conductivity - EPA 120.1

Batch 03EC12G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800732-001 Specific Conductivity	umhos/cm	03/28/2012	1.00	0.0950	2.00	7620

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 800732-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7620	7620	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

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	974	998	97.6	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 4/5/2012

Chrome VI by EPA 218.6

Batch 03CrH12P

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800732-001 Chromium, Hexavalent	ug/L	03/28/2012 13:45	5.25	0.136	1.0	ND

Method Blank

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

Duplicate

Lab ID = 800742-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.05	1.18	1.19	0.818	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.234	0.200	117.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.75	5.00	95.0	90 - 110

Matrix Spike

Lab ID = 800732-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.25	5.14	5.44(5.25)	94.3	90 - 110

Matrix Spike

Lab ID = 800732-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.06	1.18	1.23(1.06)	95.2	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.77	5.00	95.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.96	10.0	99.6	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 4/5/2012

Metals by EPA 200.8, Total

Batch 040412B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800732-001 Chromium	ug/L	04/05/2012 12:38	5.00	0.110	1.0	ND
Manganese	ug/L	04/05/2012 12:38	5.00	0.285	1.0	4.3

Method Blank

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

Duplicate

Lab ID = 800732-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	4.32	4.29	0.581	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.239	0.200	120.	70 - 130
Manganese	ug/L	1.00	0.241	0.200	120.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	103.	100.	103.	85 - 115
Manganese	ug/L	5.00	101	100.	101	85 - 115

Matrix Spike

Lab ID = 800732-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	108.	100.(100.)	108.	75 - 115
Manganese	ug/L	5.00	108.	104.(100.)	104.	75 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.67	10.0	96.7	90 - 110
Manganese	ug/L	1.00	9.36	10.0	93.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.52	10.0	95.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.15	10.0	91.5	90 - 110



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 4/5/2012

Total Dissolved Solids by SM 2540 C

Batch 03TDS12H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800732-001 Total Dissolved Solids	mg/L	03/29/2012	1.00	0.400	250.	4480

Method Blank

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

Duplicate

Lab ID = 800732-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4350	4480	2.94	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	509	500.	102.	90 - 110

Turbidity by SM 2130 B

Batch 03TUC12P

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800732-001 Turbidity	NTU	03/28/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 800732-001

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	7.47	8.00	93.4	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.63	8.00	95.4	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 4/5/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 

Mona Nassimi

Manager, Analytical Services

Calculations

Batch: 03TDS12H

Date Calculated: 3/30/12

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

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: 3/30/12

[illegible]

[Signature]

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"/>	4.2 °F
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
SPECIAL REQUIREMENTS:							
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

[illegible]

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
800646	>2	<2	3/20/12	KK	YES	3010A
800648	↓	↓	↓	↓	↓	↓
800679	↓	↓	↓	↓	↓	↓
800680	<1	<2	3-27-12	BE	NO	NO
800691	<1	<2	↓	↓	↓	↓
800692	↓	↓	↓	↓	↓	↓
800700	<1	>2	↓	↓	↓	YES 14:00
800701	↓	↓	↓	↓	↓	↓
800707(1-5)	<1	1-4 <2 -5 >2	3-28-12	BE	NO	5 → YES 9:45
800709	↓	<2	↓	↓	↓	NO
800708(1-5)	↓	.5 >2	↓	↓	↓	5 → YES 9:45 AM
800710(1-5)	↓	-5 >2	↓	↓	↓	5 → YES 9:45 "
800711(1-8)	↓	-8 >2	↓	↓	↓	-8 → YES 9:45 "
800712(1-8)	↓	7.8 >2	↓	↓	↓	7.8 → YES 9:45 "
800713(1-8)	↓	7.8 >2	↓	↓	↓	7.8 → YES 9:45 "
800714(1-8)	↓	7.8 >2	↓	↓	↓	7.8 → YES 9:45 "
800715(1-10)	↓	>2	↓	↓	↓	YES 9:45 AM
800722(1-8)	↓	7.8 >2	↓	↓	↓	7.8 → YES 9:45 "
800720	↓	<2	BE 3-28-12	↓	↓	NO
800721	↓	<2	BE 3-28-12	↓	↓	↓
800717	>1	<2	BE 3-28-12	↓	YES	3010A
800718	↓	↓	↓	↓	↓	↓
800719	↓	↓	↓	↓	↓	↓
800B2	BE <1	>2	↓	↓	YES	3010A YES 10:00 AM
800742	<1	BE <2 >2	3/29/12	BE	NO	YES 7:15 AM
800747	>1	↓	↓	↓	YES	3010A ↓
800750(1-12)	<1	>2	↓	↓	NO	YES 7:15
800751	<1	<2	3-27-12	↓	NO	NO
800756	<1	<2	↓	↓	YES	3010A YES 7:15
800770(1-2)	<1	<2	3-30-12	BE	YES	3010A YES 7:15
800778(1-2)	<1	>2	4-2-12	BE	NO	3010A YES 7:35 AM
800781	<1	<2	↓	↓	NO	NO
800788	<1	<2	4-3-12	BE	NO	NO
800789	<1	<2	↓	↓	↓	↓
800797	<1	>2	↓	↓	↓	YES 12:45 PM
800804	<1	>2	↓	↓	↓	YES 15: PM
800830(1-2)	<1	>2	4-4-12	BE	YES	3010A YES 7:45 AM
800831(1-3)	<1	-2 >2	↓	↓	↓	2 → YES 7:45
800837	>1	<2	↓	↓	↓	3010
800808	↓	↓	↓	↓	↓	↓
800811	↓	↓	↓	↓	↓	↓
800809	<1	↓	↓	↓	NO	NO
800810	↓	↓	↓	↓	↓	↓
800812	↓	↓	↓	↓	↓	↓
800816	↓	↓	↓	↓	↓	↓
800826-4	↓	↓	↓	↓	↓	↓
800877	↓	↓	↓	↓	↓	↓
800823	↓	>2	↓	↓	↓	YES 10:00 AM
800824(1-3)	↓	↓	↓	↓	↓	↓



TRUESDAIL LABORATORIES, INC.

ALERT !!
Level III QC

Sample Integrity & Analysis Discrepancy Form

Client: EZ

Lab # 800732

Date Delivered: 3/27/12 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)? 4.2°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☒ No ☐ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☐ 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 water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: [Signature]

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	3-6-12	13:31	3-6-12	13:39	METER #1	3-6-12	01:00	-55.6	C. Knight	7.0

Notes:

SC100B	3-6-12	13:02	3-6-12	13:11	METER #1	3-6-12	01:00	-55.6	C. Knight	7.3
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Notes:

SC-700B	3-13-12	13:00	3-13-12	13:06	METER #1	3-13-12	1:00	-56.5	Don Phelps	7.1
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Notes:

SC-700B	3-20-12	11:30	3-20-12	11:36	METER #1	3-20-12	01:00	-56.1	Don Phelps	7.0
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Notes:

SC-700B	3-27-12	10:00	3-27-12	10:05	METER #1	3-27-12	1:00	-56.0	Don Phelps	7.0
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Notes:

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