

Topock Project Executive Abstract

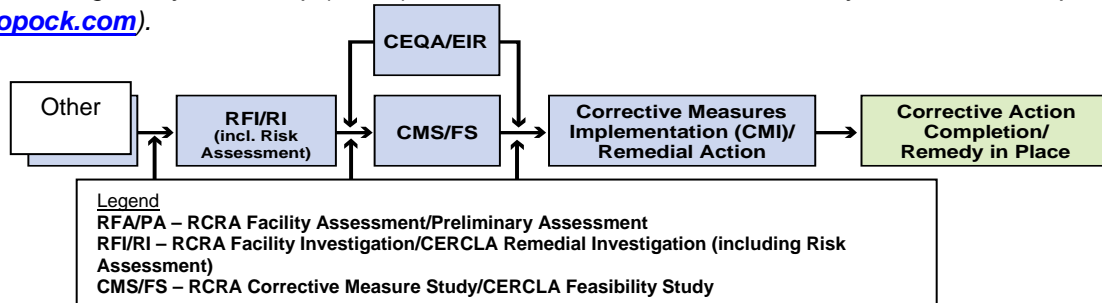
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<p>What is the consequence of NOT doing this item? What is the consequence of DOING this item? Submittal of this report is a compliance requirement of the ARARs for waste discharge as documented in Attachment A to the Letter Agreement issued July 26, 2011.</p>	<p>Is this a Regulatory Requirement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, why is the document needed? Other Justification/s: <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 Second 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. This report also covers the IM-3 operation and maintenance activities during the January – June 2012 semiannual period.</p> <p>Written by: PG&E</p>	
<p>Recommendations: 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 Second 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>	

Other requirements of this information?

None.

Related Reports and Documents:

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



Version 9



**Pacific Gas and
Electric Company**

Curt Russell
Topock Site Manager
GT&D Remediation

Topock Compressor Station
145453 National Trails Hwy
Needles, CA 92363

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

760.326.5582
Fax: 760.326.5542
Email: gcr4@pge.com

July 13, 2012

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

Robert Perdue
Executive Officer
California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

**Subject: Topock IM-3 Combined Second Quarter 2012 Monitoring and Semiannual
January - June 2012 Operation and Maintenance Report
PG&E Topock Compressor Station, Needles, California
Interim Measure No. 3 Groundwater Treatment System
(Document ID: PGE20120713A)**

Dear Ms. Innis and Mr. Perdue:

Enclosed is the Second Quarter 2012 Monitoring and Semiannual January - June 2012 Operation and Maintenance 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.

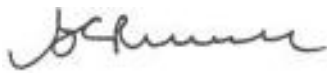
Pamela S. Innis
Robert Perdue
July 13, 2012
Page 2

Since initial operation in July 2005, the IM-3 groundwater treatment system has treated approximately 491,240,485 gallons of water and removed 5,401 pounds of total chromium through June 30, 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,



Curt Russell
Topock Site Manager

Enclosures:

Topock IM-3 Combined Second Quarter 2012 Monitoring and January – June 2012 Operation and Maintenance Report

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

Combined Second Quarter 2012 Monitoring and Semiannual January – June 2012 Operation and Maintenance Report

Interim Measure No. 3 Groundwater Treatment System

Document ID: PGE20120713A

**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

July 13, 2012

CH2MHILL
155 Grand Avenue, Suite 800
Oakland, CA 94612

**Combined Second Quarter 2012 Monitoring and January – June 2012
Operation and Maintenance Report
for Interim Measure No. 3 Groundwater Treatment System**

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

Prepared for

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

on behalf of

Pacific Gas and Electric Company

July 13, 2012

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





Dennis Fink, P.E.
Project Engineer

Contents

	Page
1.0 Introduction.....	1-1
2.0 Sampling Station Locations.....	2-1
3.0 Description of Activities	3-1
3.1 Groundwater Treatment System.....	3-1
3.2 Groundwater Treatment System Flow Rates for Second Quarter 2012.....	3-2
3.3 Sampling and Analytical Procedures	3-3
4.0 Analytical Results.....	4-1
5.0 Semiannual Operation and Maintenance.....	5-1
5.1 Flowmeter Calibration Records.....	5-1
5.2 Volumes of Groundwater Treated	5-1
5.3 Residual Solids Generated (Sludge)	5-2
5.4 Reverse Osmosis Concentrate Generated	5-2
5.5 Summary of ARARs Compliance.....	5-3
5.6 Operation and Maintenance – Required Shutdowns	5-3
5.7 Treatment Plant Modifications	5-3
6.0 Conclusions	6-1
7.0 Certification.....	7-1

Tables

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

Figures

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

Appendixes

A	Semiannual Operations and Maintenance Log, January 1, 2012 through June 30, 2012
B	Daily Volumes of Groundwater Treated
C	Flowmeter Calibration Records
D	Second Quarter 2012 Laboratory Analytical Reports

Acronyms and Abbreviations

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

1.0 Introduction

Pacific Gas and Electric Company (PG&E) is implementing an Interim Measure (IM) to address chromium concentrations in groundwater at the Topock Compressor Station near Needles, California. The IM consists of groundwater extraction 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 Second Quarter 2012 and the operation and maintenance activities during the January 1, 2012 to June 30, 2012 semiannual period (First and Second Quarters 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 491,240,485 gallons of water and removed 5,401 pounds of total chromium through June 30, 2012.

This report describes Second Quarter 2012 monitoring activities and the January 1, 2012 through June 30, 2012 (First and Second Quarters) operation and maintenance activities related to the IM-3 groundwater treatment system. IM-3 monitoring activities from January 1, 2012 through March 31, 2012 (First Quarter monitoring) was presented in the following monitoring report:

- *Topock IM-3 First Quarter 2012 Monitoring Report*, submitted to the DOI and Regional Water Board April 13, 2012.

The present report therefore also serves as the semiannual January through June 2012 Operation and Maintenance Report for IM-3.

3.1 Groundwater Treatment System

The treatment system was initially operated between July 25 and July 28, 2005 for the WDR-mandated startup phase. Discharge to the injection wells was initiated July 31, 2005 after successfully completing the startup phase in accordance with Order R7-2004-0103. Full-time operation of the treatment system commenced in August 2005.

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

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

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

- **Treated Effluent:** Treated water that is discharged to the injection well(s).
- **Reverse Osmosis (RO) Concentrate (brine):** Treatment byproduct that is transported and disposed of offsite at a permitted facility.

- **Sludge:** Treatment byproduct that is transported offsite for disposal at a permitted facility, which occurs either when a sludge waste storage bin reaches capacity, or within 90 days of the start date for accumulation in the storage container, whichever occurs first.

3.2 Groundwater Treatment System Flow Rates for Second Quarter 2012

Downtime is defined as any periods when all extraction wells are not operating so that no groundwater is being extracted and piped into IM-3 as influent. Periods of planned and unplanned extraction system downtime (that together resulted in approximately 5.1 percent downtime during Second Quarter 2012) are summarized in the Semiannual Operations and Maintenance Log provided in Appendix A. The times shown are in Pacific Standard Time to be consistent with other data collected (e.g., water level data) at the site. Periods of planned and unplanned extraction system downtime during the months January 2012 – March 2012 were originally reported in the *First Quarter 2012 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System, PG&E Topock Compressor Station, Needles, CA*, published April 13, 2012, and are also included in Appendix A of this report.

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

3.2.1 Treatment System Influent

During the Second 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 Second Quarter 2012. The operational run time for the IM groundwater extraction system (combined or individual pumping), by month, was approximately:

- 86.1 percent during April 2012
- 98.6 percent during May 2012
- 99.9 percent during June 2012

The Second Quarter 2012 treatment system monthly average flow rates (influent, effluent, and RO concentrate) are presented in Table 2. The system influent flow rate was measured by flow meters at groundwater extraction wells TW-2S, TW-2D, TW-3D, and PE-1 (Figure TP-PR-10-10-03).

The IM-3 facility treated approximately 16,670,880 gallons of extracted groundwater during Second Quarter 2012.

In addition to extracted groundwater, during Second Quarter 2012 the IM-3 facility treated 2,340 gallons of water generated from the groundwater monitoring program and 92,100 gallons of injection well development water.

3.2.2 Effluent Streams

The treatment system effluent flow rate was measured by flow meters in the piping leading to injection wells IW-2 and IW-3 (Figure TP-PR-10-10-11) and in the piping running from the treated water tank T-700 to the injection wells (Figure TP-PR-10-10-04). The IM-3 facility injected 16,722,554 gallons of treatment system effluent during Second Quarter 2012. The monthly average flow rate to injection wells is shown in Table 2.

The reverse osmosis concentrate flow rate was measured by a flow meter at the piping carrying water from RO concentrate tank T-701 to the truck load-out station (Figure PR-10-04). The IM-3 facility generated 236,253 gallons of RO concentrate during Second Quarter 2012. The monthly average RO concentrate flow rate is shown in Table 2.

The sludge flow rate is measured by the size and weight of containers shipped offsite. Eight sludge containers were shipped offsite from the IM-3 facility during Second Quarter 2012. The shipment dates and approximate weights are provided in Section 5.3.

3.3 Sampling and Analytical Procedures

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

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

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

During the Second 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. The Second Quarter 2012 sample collection schedule is shown in Table 3.

Groundwater quality is being monitored in observation and compliance wells according to Attachment A, Waste Discharge ARARs, to the Letter Agreement issued July 26, 2011, and the procedures and schedules approved in the *Groundwater Compliance Monitoring Plan for Interim Measures No. 3 Injection Area* submitted to the Regional Water Board on June 17, 2005. Quarterly groundwater monitoring analytical results for the injection area (wells

OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D) are reported in a separate document, in conjunction with groundwater level maps of the same monitoring wells.

4.0 Analytical Results

The analytical results and laboratory reports for the IM-3 groundwater treatment system monitoring program between January 1, 2012 and March 31, 2012 were included in the First Quarter 2012 Monitoring Report submitted to the DOI and Regional Water Board.

Laboratory reports for samples collected in Second Quarter 2012 were prepared by certified analytical laboratories, and are presented in Appendix D. The Second Quarter 2012 analytical results are presented in Tables 4, 5, 6, and 7:

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

The sludge is required to have an aquatic bioassay test annually. The most recent aquatic bioassay test was conducted on a September 2011 sample, and the results were presented in the Third Quarter Monitoring Report submitted to the DOI and the Regional Water Board on October 14, 2011. IM-3 will conduct the 2012 sludge aquatic bioassay test in the second half of the year.

Table 8 identifies the following information for each analysis:

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

5.0 Semiannual Operation and Maintenance

This section includes the Semiannual Operation and Maintenance Report for the IM-3 groundwater treatment system for the period January 1, 2012 through June 30, 2012.

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

5.1 Flowmeter Calibration Records

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

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

Notes:

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

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

5.2 Volumes of Groundwater Treated

Data regarding daily volumes of groundwater treated between January 1, 2012 and June 30, 2012 are provided in Appendix B. The daily volumes of groundwater treated from January 1, 2012 through March 31, 2012 were reported in the First Quarter 2012 Monitoring Report, submitted April 13, 2012.

Approximately 33,836,772 gallons of groundwater were extracted and treated between January 1, 2012 and June 30, 2012. Treatment of this water at the IM-3 facility is being performed in accordance with the conditions of ARARs.

Additionally, approximately 5,695 gallons of well purge water (generated during well development, monitoring well sampling, and/or aquifer testing) and 109,200 gallons of injection well re-development water were treated at the IM-3 facility during the January 1, 2012 through June 30, 2012 semiannual period.

A total of approximately 33,740,535 gallons of treated groundwater was injected back into the Alluvial Aquifer between January 1, 2012 and June 30, 2012.

5.3 Residual Solids Generated (Sludge)

During the January 1, 2012 through June 30, 2012 reporting period, twelve containers of sludge were shipped offsite for disposal. The sludge was shipped to U.S. Ecology in Beatty, Nevada for disposal. A listing of each shipment during the January 1, 2012 through June 30, 2012 reporting period is provided below.

Date Sludge Bin Removed from Site	Approximate Quantity from Waste Manifests (cubic yards)	Approximate Wet Weight (lbs)	Type of Shipment
1/10/2012	8	14,200	non-RCRA hazardous waste
1/10/2012	8	14,800	non-RCRA hazardous waste
2/22/2012	8	11,880	non-RCRA hazardous waste
2/22/2012	8	14,240	non-RCRA hazardous waste
4/11/2012	8	14,000	non-RCRA hazardous waste
4/11/2012	8	13,260	non-RCRA hazardous waste
5/9/2012	7	12,500	non-RCRA hazardous waste
5/9/2012	7	9,700	non-RCRA hazardous waste
5/16/2012	8	13,500	non-RCRA hazardous waste
5/16/2012	8	16,000	non-RCRA hazardous waste
6/11/2012	7	12,700	non-RCRA hazardous waste
6/11/2012	7	11,100	non-RCRA hazardous waste

Notes:

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

RCRA = Resource Conservation and Recovery Act.

5.4 Reverse Osmosis Concentrate Generated

Data regarding daily volumes of reverse osmosis concentrate generated are provided in Appendix B, as measured by flowmeter FIT-701 (Figures PR-10-03 and PR-10-04). From January 1, 2012 through June 30, 2012, approximately 483,514 gallons of RO concentrate were transported to Liquid Environmental Solutions in Phoenix, Arizona for disposal.

5.5 Summary of ARARs Compliance

No ARARs violations were identified during the January 1, 2012 through June 30, 2012 semiannual reporting period.

5.6 Operation and Maintenance – Required Shutdowns

Records of routine maintenance are kept onsite.

Appendix A contains a summary of the operation or maintenance issues that required the groundwater extraction system to be shut down during the January 1, 2012 through June 30, 2012 semiannual reporting period.

Activities during the Second Quarter 2012 included one extended shutdown. The extraction system downtime was 4 days, 1 hour and 52 minutes, and it occurred April 16 – 20, 2012 due to scheduled bi-annual plant maintenance.

5.7 Treatment Plant Modifications

No major IM-3 treatment plant modifications that affected the quality or quantity of treated effluent were performed during the January 1, 2012 through June 30, 2012 semiannual period.

6.0 Conclusions

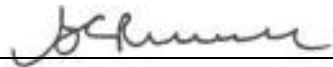
There were no exceedances of effluent limitations during the reporting period.

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

7.0 Certification

Certification Statement:

I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Signature: 

Name: Curt Russell

Company: Pacific Gas and Electric Company

Title: Topock Site Manager

Date: July 13, 2012

Tables

TABLE 1
 Sampling Station Descriptions
Second 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
Second 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)
April 2012 Average Monthly Flowrate	115.5	115.2	1.1
May 2012 Average Monthly Flowrate	132.2	133.3	1.2
June 2012 Average Monthly Flowrate	133.8	134.2	3.2

Notes:

gpm: gallons per minute

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

^b The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during the Second Quarter 2012 is approximately 1.68 percent.

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

Parameter	Sample Collection Dates	Results
Influent	April 3, 2012	See Table 4
	May 1, 2012	
	June 5, 2012	
Effluent	April 3, 2012	See Table 5
	April 10, 2012	
	April 16, 2012	
	April 20, 2012	
	April 24, 2012	
	May 1, 2012	
	May 8, 2012	
	May 15, 2012	
	May 22, 2012	
	May 29, 2012	
	June 5, 2012	
	June 12, 2012	
	June 19, 2012	
	June 26, 2012	
Reverse Osmosis Concentrate	April 3, 2012	See Table 6
Sludge ^a	April 11, 2012	See Table 7
	May 9, 2012	
	May 16, 2012	
	June 11, 2012	

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
Second 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 Conductance	Field ^c pH	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate (as N)	Nitrite (as N)	Sulfate	Iron	Zinc	
		mg/L	NTU	µmhos/cm	pH units	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L
		0.400	0.0140	0.0950	---	0.110	1.20	2.80	0.0012	0.120	0.260	0.200	0.0015	0.120	0.155	0.110	0.270	0.150	0.0750	0.135	0.00036	11.4	1.30	3.90	
SC-100B-WDR-355	4/3/2012	4440	0.134	7760	7.2	804	768	ND (50.0)	ND (0.500)	ND (10.0)	3.40	26.0	1.07	ND (5.00)	2.59	ND (10.0)	6.00	20.4	ND (10.0)	3.20	ND (0.0050)	543	ND (20.0)	ND (10.0)	
RL		250	0.100	2.00	---	1.00	10.0	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	50.0	20.0	10.0	
SC-100B-WDR-359	5/1/2012	4750	ND (0.100)	7770	7.4	798	777	ND (50.0)	ND (0.500)	ND (5.00)	5.00	25.2	1.07	ND (5.00)	2.61	ND (10.0)	5.50	20.4	ND (10.0)	3.04	ND (0.0050)	566	ND (20.0)	ND (10.0)	
RL		250	0.100	2.00	---	1.00	10.0	50.0	0.500	5.00	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	50.0	20.0	10.0	
SC-100B-WDR-364	6/5/2012	4490	ND (0.100)	7700	7.4	747	752	ND (50.0)	ND (0.500)	ND (5.00)	3.40	25.7	0.997	ND (5.00)	2.64	ND (10.0)	4.90	24.2	ND (10.0)	2.99	ND (0.0050)	531	ND (20.0)	ND (10.0)	
RL		250	0.100	2.00	---	1.00	10.0	50.0	0.500	5.00	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
Second Quarter 2012 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Effluent Limits ^b	Ave. Monthly	NA	NA	NA	6.5-8.4	6.5-8.4	25	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Max Daily	NA	NA	NA	6.5-8.4	6.5-8.4	50	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sampling Frequency		Weekly							Monthly																
<div>Analyses Units^c MDL^d</div>	Date	TDS	Turbidity	Specific Conductance	Field pH ^e	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate (as N)	Nitrite (as N)	Sulfate	Iron	Zinc	
		mg/L	NTU	µmhos/cm	pH units	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	
		0.400	0.0140	0.0950	---	0.110	0.0250	14.2	0.0012	0.120	0.260	0.200	0.0015	0.120	0.155	0.110	0.270	0.150	0.0750	0.135	0.00036	5.70	1.30	3.90	
Sample ID																									
SC-700B-WDR-355	4/3/2012	4430	0.108	7510	7.00	ND (1.00)	ND (0.200)	ND (250)	ND (0.500)	ND (10.0)	ND (1.00)	11.8	1.03	ND (5.00)	2.11	ND (10.0)	3.10	18.9	ND (10.0)	3.06	ND (0.0050)	564	ND (20.0)	ND (10.0)	
	RL	250	0.100	2.00	---	1.00	0.200	50.0	0.500	10.0	1.00	10.0	0.200	5.00	0.500	10.0	1.00	10.0	10.0	1.00	0.0050	25.0	20.0	10.0	
SC-700B-WDR-356	4/10/2012	4290	ND (0.100)	7350	7.00	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	2.40	---	---	---	---	---	---	---	
	RL	250	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-357a	4/16/2012	4110	ND (0.100)	7500	7.10	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	2.20	---	---	---	---	---	---	---	
	RL	250	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-357b	4/20/2012	4390	0.100	7870	7.10	4.00	2.60	---	---	---	---	---	---	---	---	---	22.2	---	---	---	---	---	---	---	
	RL	250	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-358	4/24/2012	4200	ND (0.100)	7370	7.40	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	7.90	---	---	---	---	---	---	---	
	RL	250	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-359	5/1/2012	4570	ND (0.100)	7460	7.80	1.20	ND (0.200)	ND (50.0)	ND (0.500)	ND (5.00)	ND (1.00)	12.9	1.06	ND (5.00)	2.10	ND (10.0)	4.40	21.6	ND (10.0)	2.84	ND (0.0050)	534	ND (20.0)	ND (10.0)	
	RL	250	0.100	2.00	---	1.00	0.200	50.0	0.500	5.00	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-360	5/8/2012	4180	0.130	7430	7.30	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	4.60	---	---	---	---	---	---	---	
	RL	250	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-361	5/15/2012	4070	ND (0.100)	7320	7.30	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	6.20	---	---	---	---	---	---	---	
	RL	250	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-362	5/22/2012	4230	ND (0.100)	7420	7.20	ND (1.00)	ND (1.00)	---	---	---	---	---	---	---	---	---	3.10	---	---	---	---	---	---	---	
	RL	250	0.100	2.00	---	1.00	1.00	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-363	5/29/2012	4530	ND (0.100)	7830	7.30	ND (1.00)	0.270	---	---	---	---	---	---	---	---	---	3.00	---	---	---	---	---	---	---	
	RL	250	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-364	6/5/2012	4090	ND (0.100)	7440	7.40	ND (1.00)	ND (0.200)	ND (50.0)	ND (0.500)	ND (5.00)	ND (1.00)	11.4	0.978	ND (5.00)	2.19	ND (10.0)	1.70	19.3	ND (10.0)	3.17	ND (0.0050)	506	ND (20.0)	ND (10.0)	
	RL	250	0.100	2.00	---	1.00	0.200	50.0	0.500	5.00	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-365	6/12/2012	4080	ND (0.100)	7310	7.10	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	1.20	---	---	---	---	---	---	---	
	RL	250	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-366	6/19/2012	4050	ND (0.100)	7350	7.10	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	4.20	---	---	---	---	---	---	---	
	RL	250	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	
SC-700B-WDR-367	6/26/2012	4200	ND (0.100)	7320	7.10	ND (1.00)	ND (0.200)	---	---	---	---	---	---	---	---	---	1.20	---	---	---	---	---	---	---	
	RL	250	0.100	2.00	---	1.00	0.200	---	---	---	---	---	---	---	---	---	1.00	---	---	---	---	---	---	---	

TABLE 5
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Effluent Monitoring Results^a
Second 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
Second 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	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	---	0.00011	0.00026	0.00012	0.00028	0.00020	0.00014	0.00047	0.00048	0.00012	0.155	0.00011	0.0040	0.000075	0.000075	0.00034	0.00018	0.00012	0.00037	0.0039
SC-701-WDR-355	4/3/2012		31200	40300	7.6	0.00350	ND (0.0020)	ND (0.0100)	ND (0.0010)	0.0685	ND (0.0010)	ND (0.0030)	ND (0.0050)	ND (0.0050)	13.8	ND (0.0100)	0.113	ND (0.0010)	ND (0.0100)	0.0194	ND (0.0050)	ND (0.0010)	ND (0.0050)	ND (0.0100)
RL			1250	2.00	---	0.0010	0.0020	0.0100	0.0010	0.0100	0.0010	0.0030	0.0050	0.0050	0.500	0.0100	0.0100	0.0010	0.0100	0.0100	0.0050	0.0010	0.0050	0.0100

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

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

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

Sampling Frequency		Quarterly																		
<div>Sample ID</div>	<div>Analytes Units^b MDL^c Date</div>	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		0.0117	0.155	0.0146	0.0196	0.0112	0.00072	0.0136	0.0133	0.0055	0.0310	0.0236	0.0402	0.00015	0.0128	0.0161	0.0222	0.0067	0.0088	0.0194
SC-Sludge-WDR-355	4/3/2012	7670	60.0	114	ND (6.70)	76.3	ND (2.31)	16.0	ND (6.70)	11.6	30.4	7.52	15.1	0.238	25.2	ND (6.70)	ND (13.4)	ND (6.70)	77.1	88.6
RL		13.4	5.11	6.70	6.70	6.70	2.31	6.70	6.70	2.68	5.18	6.70	13.4	0.231	6.70	6.70	13.4	6.70	6.70	6.70

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.
^c Sludge sample is developed as a composite of samples collected from each sludge bin shipped offsite during previous quarter.

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second 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-355	C.Knight	4/3/2012	2:47:00 PM	TLI	EPA 120.1	SC	4/4/2012	Gautam Savani
					TLI	EPA 200.7	AL	4/12/2012	Ethel Suico
					TLI	EPA 200.7	B	4/12/2012	Ethel Suico
					TLI	EPA 200.7	FE	4/12/2012	Ethel Suico
					TLI	EPA 200.7	MO	4/6/2012	Ethel Suico
					TLI	EPA 200.7	ZN	4/25/2012	Ethel Suico
					TLI	EPA 200.8	AS	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	4/10/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	4/4/2012	George Wahba/Maksim Gorbunov/Melissa Scharfe
					TLI	EPA 300.0	FL	4/4/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	4/4/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	4/4/2012	Giawad Ghenniwa
					FIELD	HACH	PH	4/3/2012	C.Knight
					TLI	SM2130B	TRB	4/4/2012	Gautam Savani
					TLI	SM2540C	TDS	4/4/2012	Kim Luck
					TLI	SM4500NH3D	NH3N	4/5/2012	Bitu Emami
					TLI	SM4500NO2B	NO2N	4/4/2012	Maria Mangarova
SC-100B	SC-100B-WDR-359	C.Knight	5/1/2012	3:01:00 PM	TLI	EPA 120.1	SC	5/4/2012	Gautam Savani
					TLI	EPA 200.7	AL	5/24/2012	Ethel Suico
					TLI	EPA 200.7	B	5/24/2012	Ethel Suico
					TLI	EPA 200.7	FE	5/24/2012	Ethel Suico
					TLI	EPA 200.7	FETD	5/24/2012	Ethel Suico
					TLI	EPA 200.7	ZN	5/24/2012	Ethel Suico
					TLI	EPA 200.8	AS	6/6/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	6/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	6/6/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MND	6/12/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MO	6/5/2012	Katia Kiarashpoor

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second 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-359	C.Knight	5/1/2012	3:01:00 PM	TLI	EPA 200.8	NI	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	6/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	6/5/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	5/2/2012	George Wahba/Maksim Gorbunov
					TLI	EPA 300.0	FL	5/2/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	5/2/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	5/2/2012	Giawad Ghenniwa
					FIELD	HACH	PH	5/1/2012	C.Knight
					TLI	SM 2320B	ALKB	5/1/2012	Melissa Scharfe
					TLI	SM 2320B	ALKC	5/1/2012	Melissa Scharfe
					TLI	SM2130B	TRB	5/2/2012	Gautam Savani
					TLI	SM2540C	TDS	5/4/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	5/7/2012	Melissa Scharfe
					TLI	SM4500NO2B	NO2N	5/2/2012	Jenny Tankunakorn
SC-100B	SC-100B-WDR-364	Ron Phelps	6/5/2012	10:30:00 AM	TLI	EPA 120.1	SC	6/7/2012	Gautam Savani
					TLI	EPA 200.7	AL	6/26/2012	Ethel Suico
					TLI	EPA 200.7	B	6/25/2012	Ethel Suico
					TLI	EPA 200.7	FE	6/22/2012	Ethel Suico
					TLI	EPA 200.7	FETD	6/22/2012	Ethel Suico
					TLI	EPA 200.7	MO	6/25/2012	Ethel Suico
					TLI	EPA 200.7	ZN	6/22/2012	Ethel Suico
					TLI	EPA 200.8	AS	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MND	6/20/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	6/18/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	6/6/2012	George Wahba
					TLI	EPA 300.0	FL	6/6/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	6/6/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	6/6/2012	Giawad Ghenniwa
					FIELD	HACH	PH	6/5/2012	Ron Phelps
					TLI	SM 2320B	ALKB	6/12/2012	Melissa Scharfe

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second 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-364	Ron Phelps	6/5/2012	10:30:00 AM	TLI	SM 2320B	ALKC	6/12/2012	Melissa Scharfe
					TLI	SM2130B	TRB	6/6/2012	Gautam Savani
					TLI	SM2540C	TDS	6/6/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	6/7/2012	Maria Mangarova
					TLI	SM4500NO2B	NO2N	6/6/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-355	C.Knight	4/3/2012	2:29:00 PM	TLI	EPA 120.1	SC	4/4/2012	Gautam Savani
					TLI	EPA 200.7	AL	4/12/2012	Ethel Suico
					TLI	EPA 200.7	B	4/12/2012	Ethel Suico
					TLI	EPA 200.7	FE	4/12/2012	Ethel Suico
					TLI	EPA 200.7	MO	4/6/2012	Ethel Suico
					TLI	EPA 200.7	ZN	4/25/2012	Ethel Suico
					TLI	EPA 200.8	AS	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	4/10/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	4/4/2012	George Wahba/Maksim Gorbunov/Melissa Scharfe
					TLI	EPA 300.0	FL	4/4/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	4/4/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	4/4/2012	Giawad Ghenniwa
					FIELD	HACH	PH	4/3/2012	C.Knight
					TLI	SM2130B	TRB	4/4/2012	Gautam Savani
					TLI	SM2540C	TDS	4/4/2012	Kim Luck
					TLI	SM4500NH3D	NH3N	4/5/2012	Bitu Emami
					TLI	SM4500NO2B	NO2N	4/4/2012	Maria Mangarova
SC-700B	SC-700B-WDR-356	Chris Lentz	4/10/2012	12:50:00 PM	TLI	EPA 120.1	SC	4/13/2012	Gautam Savani
					TLI	EPA 200.8	CR	4/19/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	4/19/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	4/12/2012	Melissa Scharfe/Maksim Gorbunov/George Wahba
					FIELD	HACH	PH	4/10/2012	Chris Lentz
					TLI	SM2130B	TRB	4/11/2012	Gautam Savani
					TLI	SM2540C	TDS	4/12/2012	Kim Luck

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second 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-357a	C. Knight	4/16/2012	6:06:00 AM	TLI	EPA 120.1	SC	4/18/2012	Gautam Savani
					TLI	EPA 200.8	CR	4/25/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	4/25/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	4/17/2012	George Wahba/David Blackburn
					FIELD	HACH	PH	4/16/2012	C.Knight
					TLI	SM2130B	TRB	4/17/2012	Gautam Savani
					TLI	SM2540C	TDS	4/18/2012	Kim Luck
SC-700B	SC-700B-WDR-357b	J.Aide	4/20/2012	1:00:00 PM	TLI	EPA 120.1	SC	4/23/2012	Gautam Savani
					TLI	EPA 200.8	CR	4/25/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	4/25/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	4/24/2012	George Wahba/Maksim Gorbunov
					FIELD	HACH	PH	4/20/2012	J.Aide
					TLI	SM2130B	TRB	4/20/2012	Kim Luck
					TLI	SM2540C	TDS	4/25/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-358	C.Knight	4/24/2012	2:40:00 PM	TLI	EPA 120.1	SC	4/26/2012	Gautam Savani
					TLI	EPA 200.8	CR	5/15/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	5/15/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	4/27/2012	George Wahba/Maksim Gorbunov
					FIELD	HACH	PH	4/24/2012	C.Knight
					TLI	SM2130B	TRB	4/25/2012	Gautam Savani
					TLI	SM2540C	TDS	4/25/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-359	C.Knight	5/1/2012	3:09:00 PM	TLI	EPA 120.1	SC	5/4/2012	Gautam Savani
					TLI	EPA 200.7	AL	5/24/2012	Ethel Suico
					TLI	EPA 200.7	B	5/24/2012	Ethel Suico
					TLI	EPA 200.7	FE	5/24/2012	Ethel Suico
					TLI	EPA 200.7	ZN	5/24/2012	Ethel Suico
					TLI	EPA 200.8	AS	6/6/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	6/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	6/6/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MO	6/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	6/5/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	6/5/2012	Katia Kiarashpoor

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second 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-359	C.Knight	5/1/2012	3:09:00 PM	TLI	EPA 218.6	CR6	5/2/2012	George Wahba/Maksim Gorbunov
					TLI	EPA 300.0	FL	5/2/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	5/2/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	5/2/2012	Giawad Ghenniwa
					FIELD	HACH	PH	5/1/2012	C.Knight
					TLI	SM2130B	TRB	5/2/2012	Gautam Savani
					TLI	SM2540C	TDS	5/4/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	5/7/2012	Melissa Scharfe
					TLI	SM4500NO2B	NO2N	5/2/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-360	Scott O'Donnell	5/8/2012	2:56:00 PM	TLI	EPA 120.1	SC	5/11/2012	Gautam Savani
					TLI	EPA 200.8	CR	6/15/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/15/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	5/9/2012	George Wahba/Maksim Gorbunov
					FIELD	HACH	PH	5/8/2012	C.Knight
					TLI	SM2130B	TRB	5/9/2012	Gautam Savani
					TLI	SM2540C	TDS	5/10/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-361	Chris Knight	5/15/2012	3:07:00 PM	TLI	EPA 120.1	SC	5/16/2012	Gautam Savani
					TLI	EPA 200.8	CR	6/15/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/15/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	5/16/2012	George Wahba/Maksim Gorbunov
					FIELD	HACH	PH	5/15/2012	C.Knight
					TLI	SM2130B	TRB	5/16/2012	Gautam Savani
					TLI	SM2540C	TDS	5/18/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-362	J.Aide	5/22/2012	1:30:00 PM	TLI	EPA 120.1	SC	5/25/2012	Gautam Savani
					TLI	EPA 200.8	CR	6/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/13/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	5/24/2012	George Wahba/Maksim Gorbunov
					FIELD	HACH	PH	5/22/2012	J.Aide
					TLI	SM2130B	TRB	5/23/2012	Gautam Savani
					TLI	SM2540C	TDS	5/24/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-363	Ron Phelps	5/29/2012	2:00:00 PM	TLI	EPA 120.1	SC	5/31/2012	Gautam Savani
					TLI	EPA 200.8	CR	6/13/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/13/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	5/30/2012	George Wahba/Maksim Gorbunov
					FIELD	HACH	PH	5/29/2012	Ron Phelps

TABLE 8

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

Monitoring Information

Second 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-363	Ron Phelps	5/29/2012	2:00:00 PM	TLI	SM2130B	TRB	5/30/2012	Gautam Savani
					TLI	SM2540C	TDS	5/30/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-364	Ron Phelps	6/5/2012	10:30:00 AM	TLI	EPA 120.1	SC	6/7/2012	Gautam Savani
					TLI	EPA 200.7	AL	6/26/2012	Ethel Suico
					TLI	EPA 200.7	B	6/25/2012	Ethel Suico
					TLI	EPA 200.7	FE	6/22/2012	Ethel Suico
					TLI	EPA 200.7	MO	6/25/2012	Ethel Suico
					TLI	EPA 200.7	ZN	6/22/2012	Ethel Suico
					TLI	EPA 200.8	AS	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	6/22/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	6/18/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	6/18/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	6/6/2012	George Wahba
					TLI	EPA 300.0	FL	6/6/2012	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	6/6/2012	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	6/6/2012	Giawad Ghenniwa
					FIELD	HACH	PH	6/5/2012	Ron Phelps
					TLI	SM2130B	TRB	6/6/2012	Gautam Savani
					TLI	SM2540C	TDS	6/6/2012	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	6/7/2012	Maria Mangarova
					TLI	SM4500NO2B	NO2N	6/6/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-365	Ron Phelps	6/12/2012	10:00:00 AM	TLI	EPA 120.1	SC	6/15/2012	Gautam Savani
					TLI	EPA 200.8	CR	6/16/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/16/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	6/18/2012	Himani Vaishnav
					FIELD	HACH	PH	6/12/2012	Ron Phelps
					TLI	SM2130B	TRB	6/13/2012	Gautam Savani
					TLI	SM2540C	TDS	6/15/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-366	Ron Phelps	6/19/2012	1:00:00 PM	TLI	EPA 120.1	SC	6/21/2012	Gautam Savani
					TLI	EPA 200.8	CR	6/20/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/20/2012	Katia Kiarashpoor

TABLE 8

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

Monitoring Information

Second 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-366	Ron Phelps	6/19/2012	1:00:00 PM	TLI	EPA 218.6	CR6	6/20/2012	Himani Vaishnav/Maksim Gorbunov
					FIELD	HACH	PH	6/19/2012	Ron Phelps
					TLI	SM2130B	TRB	6/20/2012	Gautam Savani
					TLI	SM2540C	TDS	6/20/2012	Jenny Tankunakorn
SC-700B	SC-700B-WDR-367	Ron Phelps	6/26/2012	10:00:00 AM	TLI	EPA 120.1	SC	6/27/2012	Gautam Savani
					TLI	EPA 200.8	CR	6/27/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	6/27/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	6/27/2012	Himani Vaishnav
					FIELD	HACH	PH	6/26/2012	Ron Phelps
					TLI	SM2130B	TRB	6/27/2012	Gautam Savani
					TLI	SM2540C	TDS	6/27/2012	Jenny Tankunakorn
SC-701	SC-701-WDR-355	C.Knight	4/3/2012	2:14:00 PM	TLI	EPA 120.1	SC	4/4/2012	Gautam Savani
					TLI	EPA 200.7	MO	4/6/2012	Ethel Suico
					TLI	EPA 200.7	ZN	4/25/2012	Ethel Suico
					TLI	EPA 200.8	AG	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	AS	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BA	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	BE	4/20/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CD	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CO	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CR	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	CU	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	HG	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	NI	4/17/2012	Katia Kiarashpoor
					TLI	EPA 200.8	PB	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SB	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	SE	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	TL	4/10/2012	Katia Kiarashpoor
					TLI	EPA 200.8	V	4/10/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	4/4/2012	George Wahba/Maksim Gorbunov/Melissa Scharfe
					TLI	EPA 300.0	FL	4/4/2012	Giawad Ghenniwa
					FIELD	HACH	PH	4/3/2012	C.Knight
					TLI	SM2540C	TDS	4/4/2012	Kim Luck
Phase Separator	SC-Sludge-WDR-355	C.Knight	4/3/2012	1:57:00 PM	TLI	EPA 300.0	FL	4/4/2012	Giawad Ghenniwa

TABLE 8

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second 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-355	C.Knight	4/3/2012	1:57:00 PM	TLI	EPA 300.0	NO3N	4/4/2012	Giawad Ghenniwa
					TLI	EPA 6010B	AG	4/12/2012	Ethel Suico
					TLI	EPA 6010B	AS	4/6/2012	Ethel Suico
					TLI	EPA 6010B	BA	4/6/2012	Ethel Suico
					TLI	EPA 6010B	CD	4/6/2012	Ethel Suico
					TLI	EPA 6010B	CO	4/6/2012	Ethel Suico
					TLI	EPA 6010B	CR	4/12/2012	Ethel Suico
					TLI	EPA 6010B	CU	4/26/2012	Ethel Suico
					TLI	EPA 6010B	MN	4/6/2012	Ethel Suico
					TLI	EPA 6010B	MO	4/12/2012	Ethel Suico
					TLI	EPA 6010B	NI	4/6/2012	Ethel Suico
					TLI	EPA 6010B	PB	4/6/2012	Ethel Suico
					TLI	EPA 6010B	SB	4/6/2012	Ethel Suico
					TLI	EPA 6010B	SE	4/6/2012	Ethel Suico
					TLI	EPA 6010B	TL	4/6/2012	Ethel Suico
					TLI	EPA 6010B	V	4/6/2012	Ethel Suico
					TLI	EPA 6010B	ZN	4/6/2012	Ethel Suico
					TLI	SM2540B	MOIST	4/4/2012	Bitia Emami
					TLI	SW 6020A	BE	4/18/2012	Katia Kiarashpoor
					TLI	SW 6020A	HG	4/18/2012	Katia Kiarashpoor
					TLI	SW 7199	CR6	4/25/2012	George Wahba

TABLE 8

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

Monitoring Information

*Second 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).

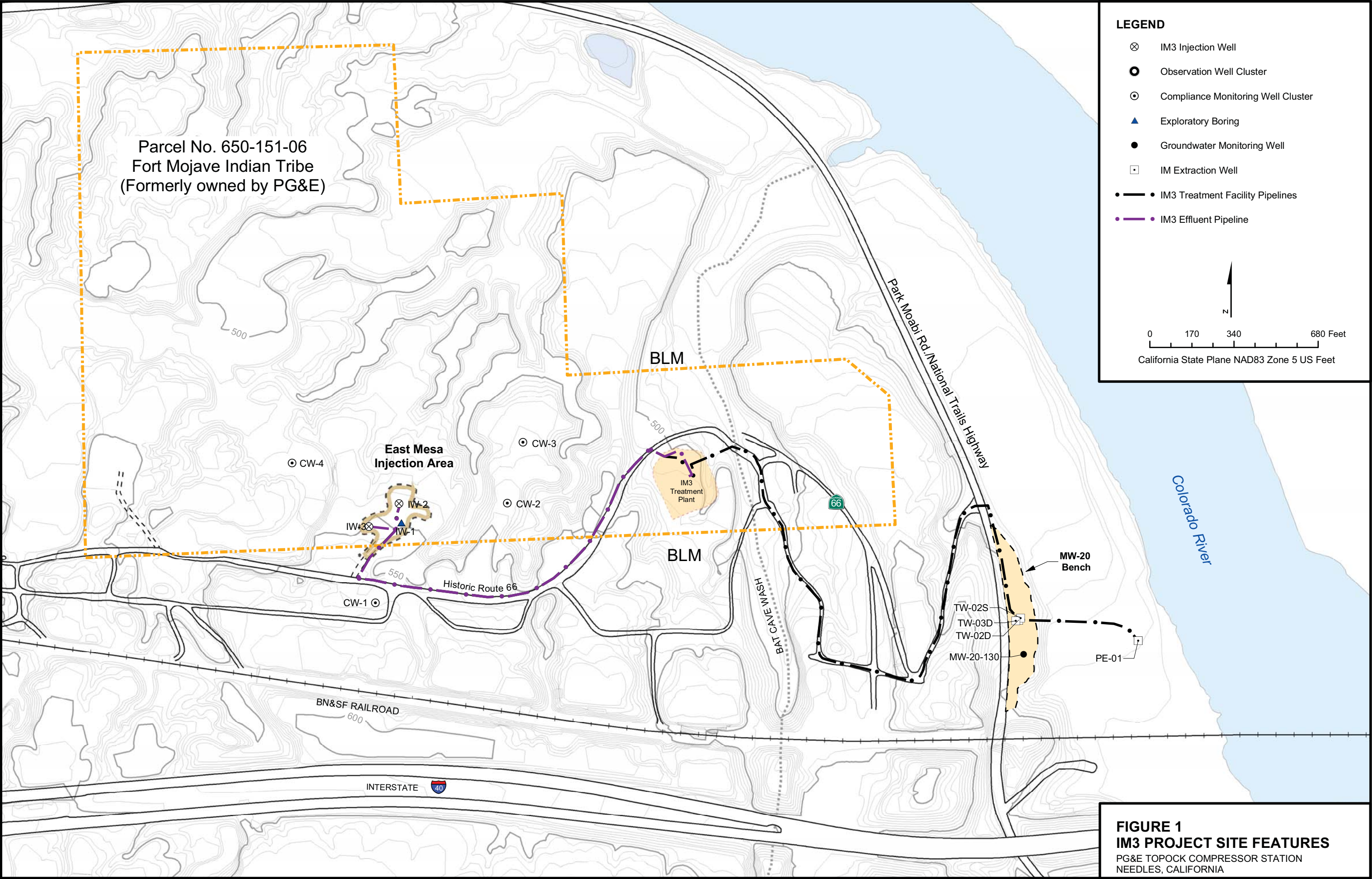
SC-100B = Sampling location for all influent samples is tap on pipe from extraction wells into tank T-100 (see attached P&ID TP-PR-10-10-04).

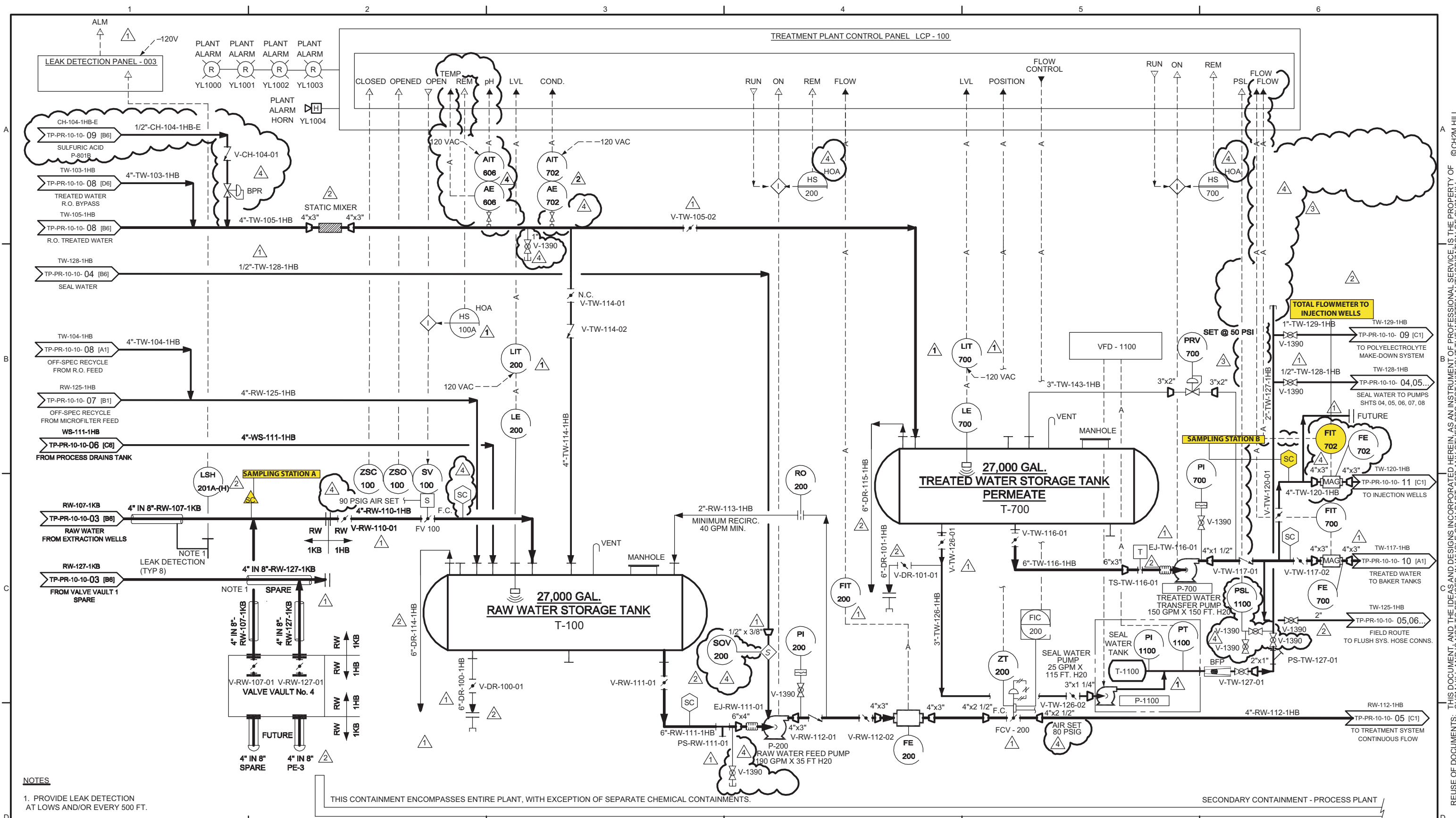
SC-701 = Sampling location for all reverse osmosis samples is tap on pipe T-701 (see attached P&ID PR-10-04).

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





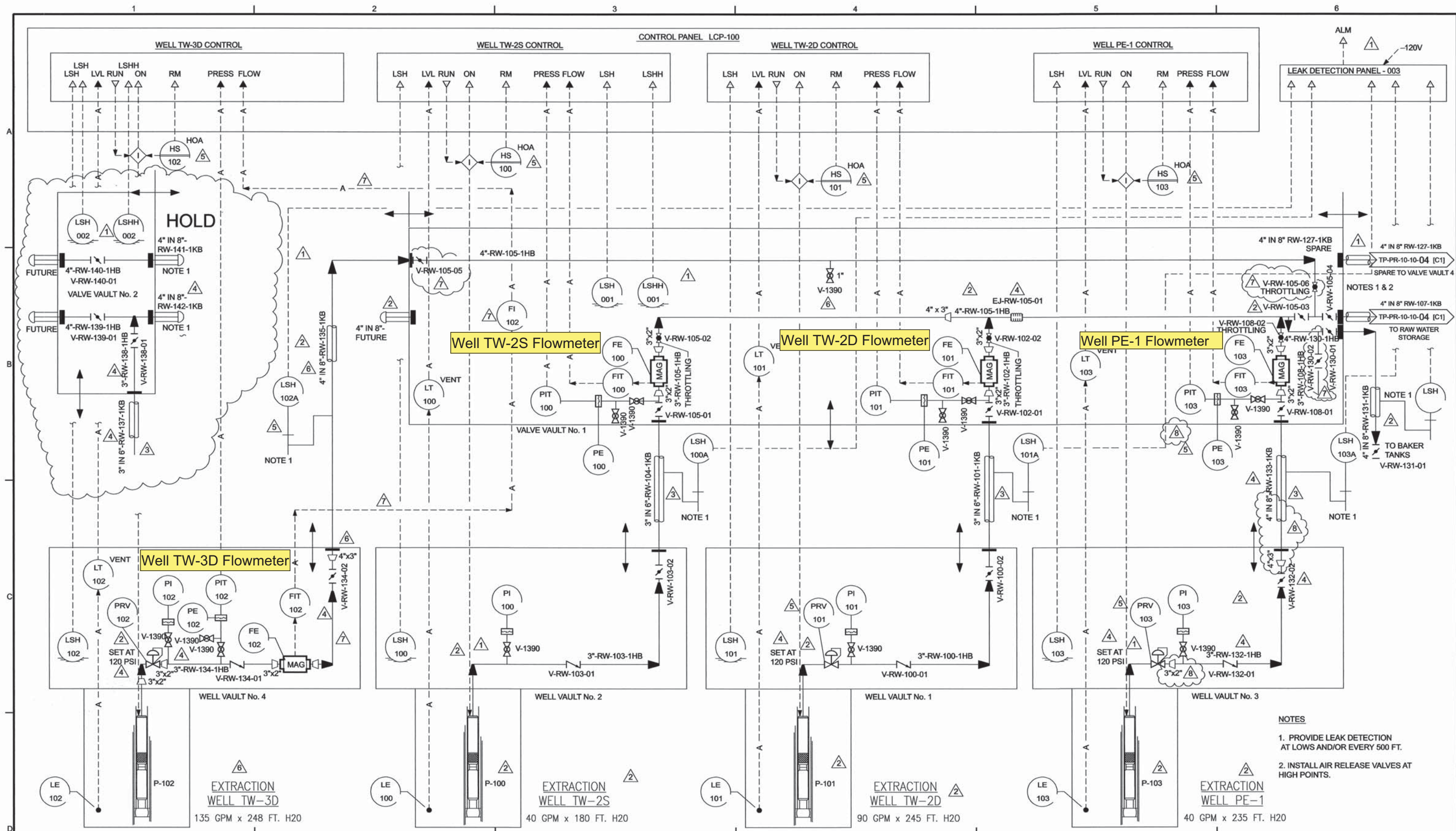
NOTES
1. PROVIDE LEAK DETECTION AT LOWS AND/OR EVERY 500 FT.

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

SECONDARY CONTAINMENT - PROCESS PLANT

RESPONSIBLE ENGINEER: Kenneth L. Martins CH4876 PE #	NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 4	DATE 09/21/05	PRINT DISTRIBUTION	STATUS					PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 EXPANDED GROUNDWATER EXTRACTION AND TREATMENT SYSTEM PROJ NO. 315994	PROCESS AND INSTRUMENTATION DIAGRAM SHEET 04 STORAGE AREA			
	0	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE		ISSUED	REV	DATE				SDE	PEM
	0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL		ELECTRICAL		STATUS		PRELIMINARY							
	1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL		INST & CONTROL		REV.		FOR REVIEW AND APPROVAL	D	07/28/04					
	2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL		ARCHITECTURAL		CLIENT		APPROVED FOR CONSTRUCTION	0	09/03/04				KLM	TP
	3	02/14/05	ADDED RECIRC. LINE AND PRV VALVE TO T-700 - APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS		ENVIRONMENTAL		FIELD		REVISED & APPROVED FOR CONSTRUCTION	4	/ /					
	4	09/21/05	REVISED PER AS-BUILT CONDITIONS	EFC	AJ	PIPING		GEN. ARRANG.		INTRA CO.									
										SCALE		NONE		CH2MHILL		DWG. NO. TP-PR-10-10-04	REV. 4		

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



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

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

SCALE NONE

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

CH2MHILL

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

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

FILENAME: tpr101003.dwg

PLOT DATE: 19-OCT-2005

PLOT TIME:

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Appendix A
Semiannual Operations and Maintenance Log,
January 1, 2012 through June 30, 2012

Semiannual Operations and Maintenance Log, January 1, 2012 through June 30, 2012

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

January 2012

- **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 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.

February 2012

- **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 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 City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 2 minutes.

March 2012

- **March 6, 2012 (unplanned):** The extraction well system was offline from 6:48 p.m. to 7:08 p.m. due to City of Needles power imbalance that shut down 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 relieving 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 relieving 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 relieving 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 relieving 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 relieving 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.

April 2012

- **April 2, 2012 (planned):** The extraction well system was offline from 8:44 a.m. to 9:22 a.m., 9:28 a.m. to 9:30 a.m., and 9:36 a.m. to 9:38 a.m. due to critical alarm and leak detection system testing, which shut down extraction wells. Extraction system downtime was 42 minutes.
- **April 16, 2012 - April 20, 2012 (planned):** The extraction well system was offline from 4:54 a.m. on April 16, 2012 to 5:30 a.m. on April 18, 2012; 5:32 a.m. on April 18, 2012 to 8:22 a.m. on April 19, 2012; 10:00 a.m. to 12:20 p.m. on April 19, 2012; 2:08 p.m. on April 19, 2012 to 7:12 a.m. on April 20, 2012; 7:14 a.m. to 8:40 a.m. on April 20, 2012; and 8:42 a.m. to 10:18 a.m. on April 20, 2012 due to scheduled bi-annual plant maintenance. Extraction system downtime was 4 days, 1 hour and 52 minutes.
- **April 27, 2012 (unplanned):** The extraction well system was offline from 8:10 p.m. to 8:26 p.m. and 9:12 p.m. to 10:44 p.m. due to high water level in the raw water storage tank due to a slight increase in flow from extraction wells. Extraction system downtime was 1 hour and 48 minutes.

May 2012

- **May 2, 2012 (planned):** The extraction well system was offline from 11:40 a.m. to 12:10 p.m., 12:16 p.m. to 12:24 p.m., and 12:26 p.m. to 12:28 p.m. due to critical alarm and leak detection system testing that shut down extraction wells. Extraction system downtime was 40 minutes.
- **May 3, 2012 (planned):** The extraction well system was offline from 12:46 p.m. to 1:00 p.m. due to maintenance on the sump water level alarm. Extraction system downtime was 14 minutes.
- **May 3, 2012 (unplanned):** The extraction well system was offline from 2:18 p.m. to 2:20 p.m. due to a signal loss to data Historian. Extraction system downtime was 2 minutes.
- **May 5, 2012 (unplanned):** The extraction well system was offline from 4:02 a.m. to 4:34 a.m. due to a chemical mixing loop low flow alarm. Extraction system downtime was 32 minutes.
- **May 5, 2012 (planned):** The extraction well system was offline from 9:26 a.m. to 10:38 a.m. and 10:40 a.m. to 10:52 a.m. due to repair of chemical mixing loop flow switch, FSL 201. Extraction system downtime was 1 hour and 24 minutes.

- **May 7, 2012 (unplanned):** The extraction well system was offline from 12:06 p.m. to 1:38 p.m. due to malfunction of the chemical mixing loop flow switch, FSL 201. Extraction system downtime was 1 hour and 32 minutes.
- **May 17, 2012 (planned):** The extraction well system was offline from 4:38 p.m. to 4:48 p.m. to allow for acceptance of 24,500 gallons of backwash water from injection well, IW-03, rehabilitation. Extraction system downtime was 10 minutes.
- **May 18, 2012 (planned):** The extraction well system was offline from 3:40 a.m. to 4:38 a.m. and 9:06 a.m. to 11:44 a.m. to allow for acceptance of 28,000 gallons of backwash water from injection well, IW-02, rehabilitation. Extraction system downtime was 3 hours and 36 minutes.
- **May 26, 2012 (unplanned):** The extraction well system was offline from 6:36 a.m. to 7:10 a.m. due to high level alarm in the raw water storage tank. Extraction system downtime was 34 minutes.
- **May 29, 2012 (planned):** The extraction well system was offline from 8:38 a.m. to 10:06 a.m. and 10:08 a.m. to 10:18 a.m. due to monthly scheduled plant maintenance. Extraction system downtime was 1 hour and 38 minutes.

June 2012

- **June 1, 2012 (unplanned):** The extraction well system was offline from 1:18 p.m. to 1:32 p.m. due to a power outage caused by Needles Power transformer maintenance. Extraction system downtime was 14 minutes.
- **June 6, 2012 (planned):** The extraction well system was offline from 8:44 a.m. to 8:46 a.m., 8:54 a.m. to 8:56 a.m., 9:12 a.m. to 9:14 a.m., 9:20 a.m. to 9:22 a.m., and 9:30 a.m. to 9:32 a.m. due to critical alarm and leak detection system testing that shut down extraction wells. Extraction system downtime was 10 minutes.
- **June 27, 2012 (unplanned):** The extraction well system was offline from 1:00 a.m. to 1:06 a.m. and from 9:48 p.m. to 9:56 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 14 minutes.

Appendix B
Daily Volumes of Groundwater Treated

January 2012 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

			Extraction Well System					Injection Well System		RO Brine	
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
January	1	2012	--	--	154,759	37,867	192,626	189,547	16	189,562	3,034
January	2	2012	--	--	155,115	37,391	192,506	189,248	13	189,261	3,014
January	3	2012	--	--	155,195	37,042	192,237	191,028	8	191,035	3,060
January	4	2012	--	--	152,131	36,499	188,631	183,833	11	183,844	8
January	5	2012	--	--	154,910	36,688	191,598	193,416	16	193,432	4,912
January	6	2012	--	--	154,572	37,205	191,777	103,898	82,612	186,509	3,153
January	7	2012	--	--	154,450	37,281	191,731	35	189,071	189,106	3,037
January	8	2012	--	--	154,623	37,029	191,652	32	186,452	186,484	3,162
January	9	2012	--	--	145,091	34,762	179,853	1	177,706	177,707	6,012
January	10	2012	--	--	154,215	36,998	191,213	2	192,828	192,831	2,757
January	11	2012	--	--	154,513	36,486	190,999	39	184,011	184,049	2,867
January	12	2012	--	--	143,845	34,586	178,431	40	175,653	175,693	2,880
January	13	2012	--	--	154,182	37,620	191,802	0	188,571	188,572	3,281
January	14	2012	--	--	154,255	37,463	191,718	7	191,879	191,886	3,029
January	15	2012	--	--	154,509	37,125	191,635	22	189,840	189,863	3,121
January	16	2012	--	--	154,304	37,486	191,790	3	185,719	185,723	3,148
January	17	2012	--	--	154,492	37,146	191,638	10	188,990	189,000	3,219
January	18	2012	--	--	154,650	36,966	191,616	2,389	189,736	192,125	3,152
January	19	2012	--	--	154,608	36,913	191,521	1,618	188,645	190,264	2,897
January	20	2012	--	--	153,382	38,740	192,121	29	189,597	189,626	6,120
January	21	2012	--	--	153,473	38,500	191,973	3	191,714	191,718	3,280
January	22	2012	--	--	153,877	38,041	191,918	5	192,070	192,075	3,168
January	23	2012	--	--	154,062	37,868	191,929	5	186,224	186,229	3,157
January	24	2012	--	--	154,102	37,919	192,021	13	188,315	188,327	3,262
January	25	2012	--	--	154,176	37,787	191,963	3	190,148	190,152	3,109
January	26	2012	--	--	154,170	37,696	191,866	33	173,330	173,363	3,251
January	27	2012	--	--	154,240	37,501	191,740	17	199,220	199,237	3,280
January	28	2012	--	--	154,307	37,185	191,492	5	189,561	189,566	2,892
January	29	2012	--	--	154,376	36,988	191,364	9	189,050	189,059	6,023
January	30	2012	--	--	154,409	36,928	191,338	44	188,530	188,574	2,883
January	31	2012	--	--	154,265	37,304	191,569	24	192,654	192,678	3,270
Total Monthly Volumes (gal)			0	0	4,763,260	1,153,008	5,916,268	1,055,360	4,782,188	5,837,548	103,440
Average Pump/Injection Rates (gpm)			0.0	0.0	106.7	25.8	132.5	23.6	107.1	130.8	2.3

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

a. Extraction wells TW-3D and PE-1 were operated during January 2011 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime.

Extraction wells TW-2D and TW-2S were not operated during January 2011.

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

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during January 2011 is approximately 0.42 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

February 2012 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

			Extraction Well System					Injection Well System			RO Brine
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
February	1	2012	--	--	145,407	35,253	180,661	70,527	105,384	175,911	3,128
February	2	2012	--	--	154,309	36,986	191,295	194,063	11	194,074	2,879
February	3	2012	--	--	153,385	37,448	190,833	187,626	13	187,639	5,917
February	4	2012	--	--	154,108	37,137	191,245	188,275	13	188,288	3,537
February	5	2012	--	--	153,978	37,418	191,396	189,767	12	189,779	3,159
February	6	2012	--	--	153,743	37,628	191,371	191,843	12	191,856	3,171
February	7	2012	--	--	150,491	37,153	187,645	186,333	14	186,347	3,142
February	8	2012	--	--	153,992	37,142	191,134	168,820	18,283	187,103	2,983
February	9	2012	--	--	154,080	36,979	191,059	189,919	7	189,925	3,158
February	10	2012	--	--	154,075	37,016	191,091	191,189	18	191,207	3,140
February	11	2012	--	--	153,949	37,360	191,309	190,326	10	190,336	3,133
February	12	2012	--	--	153,705	37,801	191,506	187,762	11	187,773	2,984
February	13	2012	--	--	154,003	37,252	191,255	193,914	11	193,925	3,026
February	14	2012	--	--	154,157	36,999	191,157	189,705	16	189,721	10
February	15	2012	--	--	154,315	36,921	191,236	187,334	10	187,344	3,031
February	16	2012	--	--	154,385	36,833	191,218	186,200	11	186,211	3,148
February	17	2012	--	--	153,727	37,985	191,713	77,361	111,707	189,069	5,151
February	18	2012	--	--	142,740	34,715	177,455	22	182,462	182,484	1,185
February	19	2012	--	--	154,083	36,897	190,980	14	188,090	188,104	3,018
February	20	2012	--	--	154,303	36,641	190,944	5	188,254	188,259	2,997
February	21	2012	--	--	154,151	36,925	191,076	24	186,743	186,766	2,970
February	22	2012	--	--	154,233	36,712	190,946	7	190,362	190,368	3,088
February	23	2012	--	--	154,018	37,208	191,226	7	187,644	187,651	8
February	24	2012	--	--	153,938	36,738	190,676	12	192,125	192,136	6,010
February	25	2012	--	--	154,044	37,120	191,164	5	194,975	194,980	8
February	26	2012	--	--	153,942	37,300	191,242	16	191,638	191,654	3,026
February	27	2012	--	--	153,864	37,466	191,330	37	176,538	176,575	2,950
February	28	2012	--	--	153,746	37,454	191,200	11	189,458	189,469	3,002
February	29	2012	--	--	125,488	30,283	155,772	21	157,857	157,878	3,142
Total Monthly Volumes (gal)			0	0	4,414,359	1,066,772	5,481,131	2,971,146	2,461,686	5,432,832	86,104
Average Pump/Injection Rates (gpm)			0.0	0.0	105.7	25.5	131.3	71.1	58.9	130.1	2.1

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

a. Extraction wells TW-3D and PE-1 were operated during February 2012 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime.

Extraction wells TW-2D and TW-2S were not operated during February 2012.

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

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during February 2012 is approximately 0.69 percent.

This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

March 2012 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

Extraction Well System							Injection Well System			RO Brine	
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
March	1	2012	--	--	154,139	36,875	191,014	78,273	114,506	192,779	2,965
March	2	2012	--	--	154,329	36,583	190,913	191,563	17	191,580	3,002
March	3	2012	--	--	154,164	36,993	191,157	190,230	10	190,240	8
March	4	2012	--	--	154,295	36,904	191,199	189,132	9	189,141	3,019
March	5	2012	--	--	153,993	37,255	191,247	192,128	13	192,141	2,996
March	6	2012	--	--	151,166	36,901	188,067	188,557	19	188,576	2,331
March	7	2012	--	--	150,448	36,695	187,143	186,353	15	186,368	3,646
March	8	2012	--	--	153,681	36,931	190,612	191,219	11	191,230	9
March	9	2012	--	--	153,735	36,865	190,600	188,376	14	188,390	2,872
March	10	2012	--	--	153,003	37,934	190,937	187,370	23	187,393	8
March	11	2012	--	--	153,141	37,735	190,876	191,027	20	191,047	3,125
March	12	2012	--	--	153,381	37,361	190,742	190,381	14	190,395	3,083
March	13	2012	--	--	153,568	37,098	190,666	189,305	16	189,321	9
March	14	2012	--	--	153,644	36,949	190,592	191,094	286	191,380	3,893
March	15	2012	--	--	153,717	36,852	190,569	190,471	13	190,484	7
March	16	2012	--	--	153,117	37,796	190,913	188,750	19	188,769	2,853
March	17	2012	--	--	153,381	37,201	190,582	189,415	11	189,426	8
March	18	2012	--	--	153,365	37,207	190,572	190,469	16	190,485	3,116
March	19	2012	--	--	153,246	37,379	190,624	193,020	18	193,038	2,961
March	20	2012	--	--	142,985	35,248	178,234	172,823	17	172,840	11
March	21	2012	--	--	120,625	25,209	145,835	137,999	15	138,014	2,979
March	22	2012	--	--	144,881	35,263	180,144	187,579	13	187,592	8
March	23	2012	--	--	156,195	37,732	193,927	186,947	15	186,962	2,982
March	24	2012	--	--	147,856	36,196	184,052	187,973	10	187,983	5
March	25	2012	--	--	151,707	36,940	188,646	187,458	13	187,471	2,996
March	26	2012	--	--	148,838	36,930	185,769	185,976	14	185,990	6
March	27	2012	--	--	144,920	36,872	181,792	181,251	23	181,273	2,565
March	28	2012	--	--	107,298	25,530	132,828	134,449	14	134,464	7
March	29	2012	--	--	159,871	36,384	196,254	193,595	9	193,604	2,993
March	30	2012	--	--	160,415	35,757	196,172	192,410	22	192,432	8
March	31	2012	--	--	151,186	34,629	185,815	186,779	13	186,792	3,249
Total Monthly Volumes (gal)			0	0	4,650,288	1,118,205	5,768,493	5,632,374	115,227	5,747,601	57,717
Average Pump/Injection Rates (gpm)			0.0	0.0	104.2	25.0	129.2	126.2	2.6	128.8	1.3

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

a. Extraction wells TW-3D and PE-1 were operated during March 2012 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during March 2012.

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

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during March 2012 is approximately 0.64 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

April 2012 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

			Extraction Well System					Injection Well System			RO Brine
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
April	1	2012	--	--	157,696	36,003	193,699	195,753	10	195,763	3,015
April	2	2012	--	--	151,271	35,013	186,283	188,469	1,859	190,328	6
April	3	2012	--	--	157,202	36,032	193,234	187,826	12	187,838	2,793
April	4	2012	--	--	157,536	35,541	193,077	190,287	16	190,302	7
April	5	2012	--	--	157,974	34,869	192,843	116,648	76,143	192,791	2,999
April	6	2012	--	--	158,458	34,184	192,642	3,957	191,239	195,196	9
April	7	2012	--	--	158,439	34,102	192,541	12	187,367	187,379	3,147
April	8	2012	--	--	158,546	34,082	192,628	19	194,176	194,195	2,976
April	9	2012	--	--	158,785	33,979	192,764	0	194,383	194,384	4
April	10	2012	--	--	158,878	33,927	192,805	16	193,981	193,997	2,941
April	11	2012	--	--	159,047	33,819	192,866	1,221	190,051	191,272	6
April	12	2012	--	--	159,170	33,686	192,856	4	191,397	191,402	3,809
April	13	2012	--	--	159,334	33,578	192,912	40	192,389	192,428	2,963
April	14	2012	--	--	159,330	33,620	192,951	12	191,990	192,002	10
April	15	2012	--	--	159,350	33,602	192,952	9	185,691	185,700	3,122
April	16	2012	--	--	32,548	6,874	39,422	17	55,322	55,340	9
April	17	2012	--	--	19	2	20	6	17	22	7
April	18	2012	--	--	14	5	19	22	19	41	8
April	19	2012	--	--	22,846	5,522	28,368	4	18,977	18,980	6
April	20	2012	--	--	89,797	21,867	111,664	5	108,776	108,781	5
April	21	2012	--	--	157,889	37,512	195,401	30	195,367	195,397	2,960
April	22	2012	--	--	156,947	37,542	194,489	11	191,597	191,608	4
April	23	2012	--	--	156,294	37,150	193,444	10	193,766	193,776	3,113
April	24	2012	--	--	156,329	36,923	193,252	42	192,901	192,943	6
April	25	2012	--	--	156,475	36,783	193,258	1,713	187,213	188,926	3,000
April	26	2012	--	--	156,506	36,738	193,244	43	194,151	194,194	3,115
April	27	2012	--	--	144,679	34,109	178,788	8	191,304	191,312	8
April	28	2012	--	--	156,315	37,422	193,737	8	188,485	188,492	2,985
April	29	2012	--	--	156,343	37,167	193,510	7	191,243	191,250	4
April	30	2012	--	--	156,358	37,081	193,439	16	189,680	189,695	2,998
Total Monthly Volumes (gal)			0	0	4,070,373	918,734	4,989,107	886,214	4,089,520	4,975,734	46,036
Average Pump/Injection Rates (gpm)			0.0	0.0	94.2	21.3	115.5	20.5	94.7	115.2	1.1

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

a. Extraction wells TW-3D and PE-1 were operated during April 2012 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during April 2012.

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

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during April 2012 is approximately 0.65 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

May 2012 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

			Extraction Well System					Injection Well System		RO Brine	
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
May	1	2012	--	--	156,362	36,991	193,354	1	194,268	194,269	5
May	2	2012	--	--	150,885	36,000	186,884	1,797	191,611	193,407	2,736
May	3	2012	--	--	155,455	37,346	192,801	12	192,750	192,762	4
May	4	2012	--	--	157,600	37,931	195,531	8	189,584	189,591	2,955
May	5	2012	--	--	144,759	34,522	179,281	14	177,541	177,555	6
May	6	2012	--	--	157,788	37,466	195,254	12	193,304	193,316	2,992
May	7	2012	--	--	147,649	35,219	182,868	4	190,942	190,946	2,875
May	8	2012	--	--	157,785	37,556	195,341	5	189,711	189,717	1,273
May	9	2012	--	--	157,769	37,259	195,028	81,763	112,228	193,991	3
May	10	2012	--	--	155,735	38,071	193,806	198,437	50	198,487	3,140
May	11	2012	--	--	154,989	38,021	193,010	181,207	66	181,273	3,107
May	12	2012	--	--	154,967	37,843	192,810	194,785	44	194,829	3
May	13	2012	--	--	155,036	37,724	192,760	194,812	48	194,860	3,002
May	14	2012	--	--	155,111	37,729	192,841	192,921	46	192,966	6
May	15	2012	--	--	155,180	37,796	192,975	189,817	3,514	193,331	3,131
May	16	2012	--	--	155,135	37,607	192,742	197,857	26	197,884	2,716
May	17	2012	--	--	143,577	37,256	180,833	114,130	77,449	191,579	4
May	18	2012	--	--	131,565	32,810	164,375	76,678	115,919	192,597	2,930
May	19	2012	--	--	154,730	38,547	193,277	195,132	47	195,179	2,986
May	20	2012	--	--	154,788	38,478	193,266	194,355	44	194,399	3
May	21	2012	--	--	154,891	38,417	193,308	102,094	89,211	191,305	3,152
May	22	2012	--	--	154,895	38,366	193,260	46	195,291	195,337	2
May	23	2012	--	--	154,892	38,076	192,969	1,652	189,525	191,177	3,208
May	24	2012	--	--	154,816	37,995	192,811	40	194,603	194,643	1,790
May	25	2012	--	--	154,932	38,051	192,982	12	195,942	195,955	6
May	26	2012	--	--	151,003	37,048	188,051	6	190,427	190,432	6
May	27	2012	--	--	155,096	37,295	192,391	27	191,606	191,633	3,219
May	28	2012	--	--	155,231	37,099	192,330	10	194,384	194,394	3,237
May	29	2012	--	--	144,344	34,976	179,319	108,592	64,930	173,522	4
May	30	2012	--	--	155,102	37,365	192,466	195,227	40	195,267	2
May	31	2012	--	--	155,312	36,656	191,967	194,794	43	194,837	2,997
Total Monthly Volumes (gal)			0	0	4,747,379	1,153,512	5,900,892	2,616,248	3,335,192	5,951,440	51,497
Average Pump/Injection Rates (gpm)			0.0	0.0	106.3	25.8	132.2	58.6	74.7	133.3	1.2

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

a. Extraction wells TW-3D and PE-1 were operated during May 2012 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during May 2012.

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

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during May 2012 is approximately 1.73 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

June 2012 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

			Extraction Well System					Injection Well System			RO Brine
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
June	1	2012	--	--	153,612	36,652	190,264	191,971	49	192,019	3
June	2	2012	--	--	155,155	37,101	192,256	34,022	153,228	187,250	3,122
June	3	2012	--	--	155,319	36,951	192,269	2,263	188,524	190,788	3
June	4	2012	--	--	155,394	36,887	192,281	13	194,291	194,305	2,998
June	5	2012	--	--	155,493	36,820	192,313	8	196,311	196,319	4
June	6	2012	--	--	153,126	37,847	190,972	2,316	187,086	189,401	5
June	7	2012	--	--	154,998	38,456	193,454	14	194,324	194,338	3,146
June	8	2012	--	--	154,947	38,281	193,228	5	195,150	195,155	1,657
June	9	2012	--	--	154,899	38,156	193,054	8	189,303	189,311	4
June	10	2012	--	--	155,022	38,091	193,113	9	193,809	193,818	2,861
June	11	2012	--	--	155,219	37,556	192,775	16	194,340	194,355	4
June	12	2012	--	--	155,306	37,214	192,520	8	193,058	193,066	2,964
June	13	2012	--	--	155,315	37,276	192,591	77,832	113,230	191,061	3
June	14	2012	--	--	155,284	37,383	192,667	115,899	77,397	193,297	3,005
June	15	2012	--	--	155,217	37,210	192,426	10	194,203	194,213	3,277
June	16	2012	--	--	155,156	37,192	192,349	35	190,932	190,966	3
June	17	2012	--	--	155,299	36,821	192,120	49	191,877	191,926	2,018
June	18	2012	--	--	155,464	36,781	192,245	22	196,048	196,070	3,576
June	19	2012	--	--	155,378	36,907	192,284	23	193,094	193,117	8,843
June	20	2012	--	--	155,456	36,739	192,195	74,590	117,265	191,855	9,094
June	21	2012	--	--	155,418	36,533	191,951	196,212	73	196,285	9,271
June	22	2012	--	--	155,559	36,350	191,910	192,635	91	192,726	9,326
June	23	2012	--	--	155,619	36,205	191,824	192,230	93	192,323	9,390
June	24	2012	--	--	156,629	35,950	192,578	194,338	74	194,412	10,084
June	25	2012	--	--	157,928	35,881	193,809	187,845	80	187,924	8,686
June	26	2012	--	--	157,971	35,863	193,834	197,616	70	197,686	8,564
June	27	2012	--	--	155,695	37,465	193,161	112,350	80,464	192,814	8,424
June	28	2012	--	--	157,166	37,603	194,769	17	199,112	199,128	9,744
June	29	2012	--	--	157,187	37,574	194,761	8	196,010	196,017	9,500
June	30	2012	--	--	157,400	37,506	194,906	18	193,415	193,433	9,141
Total Monthly Volumes (gal)			0	0	4,667,629	1,113,252	5,780,881	1,772,382	4,022,997	5,795,380	138,720
Average Pump/Injection Rates (gpm)			0.0	0.0	108.0	25.8	133.8	41.0	93.1	134.2	3.2

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

a. Extraction wells TW-3D and PE-1 were operated during June 2012 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during June 2012.

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

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during June 2012 is approximately 2.65 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

Appendix C

Flowmeter Calibration Records

Endress+Hauser

People for Process Automation

Flow Calibration with Adjustment

30201334-1304708

WWRA-008929F

Purchase order number

US-465002381-20 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C037216000

Serial N°

Tag N°

FCP-6.F

Calibration rig

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

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9184

Calibration factor

20

Zero point

76.8 °F

Water temperature

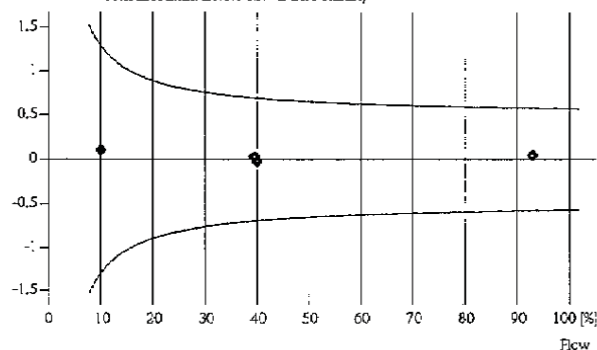
Flow [%]	Flow [us.gal/min]	Duration [s]	V target [us.gal]	V meas. [us.gal]	Δ o.r.* [%]	Outp.** [mA]
9.9	15.4	30.2	7.7528	7.7611	0.11	5.59
39.5	61.4	30.2	30.907	30.917	0.03	10.32
39.9	62.1	30.2	31.246	31.239	-0.02	10.38
93.0	144.7	30.2	72.803	72.836	0.05	18.88
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-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

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.

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



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

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

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

07-15-2011

Date of calibration

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



Leonard McGee

Operator

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

Endress+Hauser

People for Process Automation

Flow Calibration without Adjustment

30201330-1304708

WWRA-008929F

Purchase order number

US-465002381-20 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C037216000

Serial N°

Tag N°

FCP-6.F

Calibration rig

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

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9258

Calibration factor

20

Zero point

75.9 °F

Water temperature

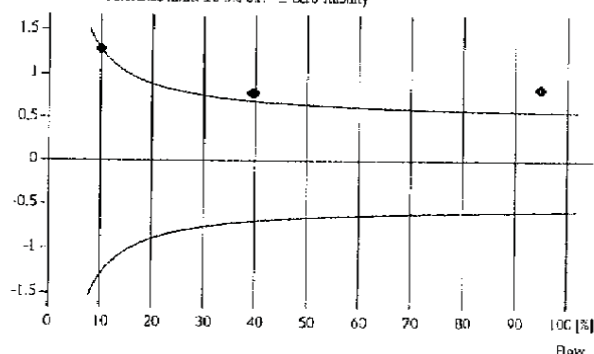
Flow [%]	Flow [us.gal/min]	Duration [s]	V target [us.gal]	V meas. [us.gal]	Δ o.r.* [%]	Outp.** [mA]
9.9	15.4	30.2	7.7490	7.8501	1.31	5.60
39.3	61.1	30.2	30.760	31.006	0.80	10.34
39.7	61.8	30.2	31.109	31.358	0.80	10.41
94.9	147.7	30.2	74.312	74.944	0.85	19.31
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-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

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.

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



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

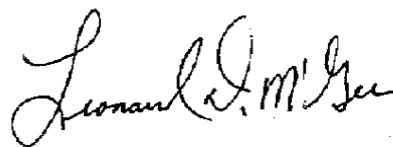
The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

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

07-15-2011

Date of calibration

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



Leonard McGee

Operator

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

Flow Calibration with Adjustment

30201328-1304707

WWRA008929F

Purchase order number

US-465002380-10 / Endress+Hauser Flowtec

Order: N°/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C037116000

Serial N°

Tag N°

FCP-6.F

Calibration rig

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

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9106

Calibration factor

0

Zero point

75.4 °F

Water temperature

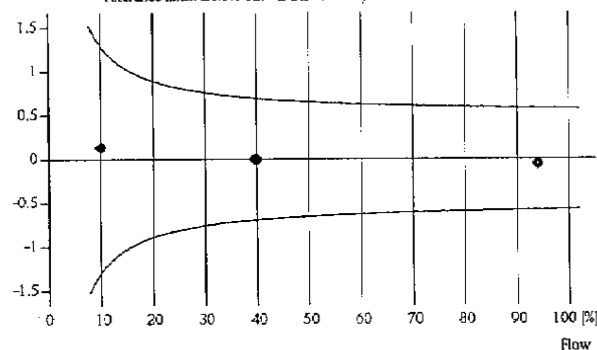
Flow [%]	Flow [us.gal/min]	Duration s	V target [us.gal]	V meas. [us.gal]	Δ o.r.* [%]	Outp.** mA
9.9	15.4	30.2	7.7531	7.7639	0.14	5.59
39.4	61.4	30.2	30.874	30.873	0.00	10.31
39.9	62.1	30.2	31.207	31.206	0.00	10.38
94.1	146.4	30.2	73.642	73.601	-0.05	19.04
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-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

*out: of rate

** Calculated value (4 - 20 mA)

Measured error % o.r.

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



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

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

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

07-15-2011

Date of calibration

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

Leonard J. McGee

Leonard McGee

Operator

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

Endress+Hauser

People for Process Automation

Flow Calibration without Adjustment

30201327-1304707

WWRA008929F

Purchase order number

US-465002380-10 / Endress+Hauser Flowtec

Order: N°/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C037116000

Serial N°

Tag N°

FCP-6.F

Calibration rig

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

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9195

Calibration factor

0

Zero point

74.9 °F

Water temperature

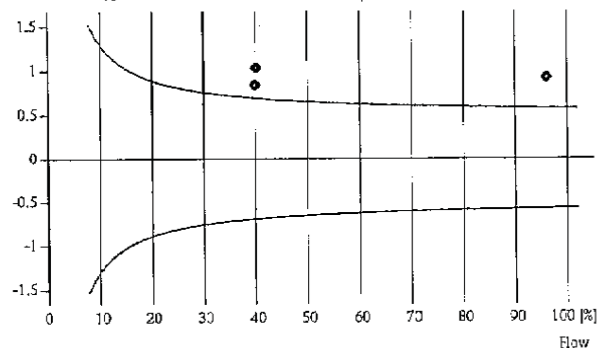
Flow [%]	Flow [us.gal/min]	Duration [s]	V target [us.gal]	V meas [us.gal]	Δ o.r.* [%]	Outp.** [mA]
10.0	15.5	30.2	7.7934	7.9184	1.60	5.62
39.8	61.9	30.2	31.146	31.410	0.85	10.42
40.0	62.2	30.2	31.325	31.654	1.05	10.47
96.0	149.4	30.2	75.197	75.894	0.93	19.51
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-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

*o.r.: of rate

**Calculated value [4 - 20 mA]

Measured error % o.r.

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



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

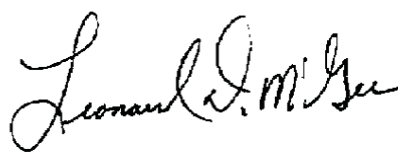
The calibration is traceable to the N.I.S.T. through standards certified at preset intervals.

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

07-15-2011

Date of calibration

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



Leonard McGee

Operator

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

Flow Calibration with Adjustment

90092171-1385072

WWRA-000923-F

Purchase order number

US-19050353-20 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter- Sensor

7700F216000

Serial N°

~~FIT-103~~

Installed at TW-2D 7/6/11

~~PE-1~~

AR

Tag N°

FCP-6.F

Calibration rig

155.6102 GPM

($\pm 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9289

Calibration factor

0

Zero point

74.9 °F

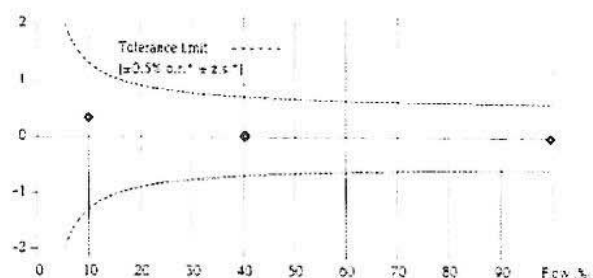
Water temperature

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

*Flow rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



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

M. E. Trueblood Jr.

11-30-2006

Date of calibration

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

Morris E. Trueblood Jr.

Operator

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

Flow Calibration with Adjustment

30057870-1275191

41724888

Purchase Order Number

USA-49310090-40 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1RA022AW

Order Code

PROMAG 23 P 2"

Transmitter/Sensor

6A022016000

Serial N°

FIT-101 / TW-25 / installed 7/28/05

Tag N°

FCP-6.C

Calibration rig

155.6102 GPM ($\pm 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9207

Calibration factor

0

Zero point

74.1 °F

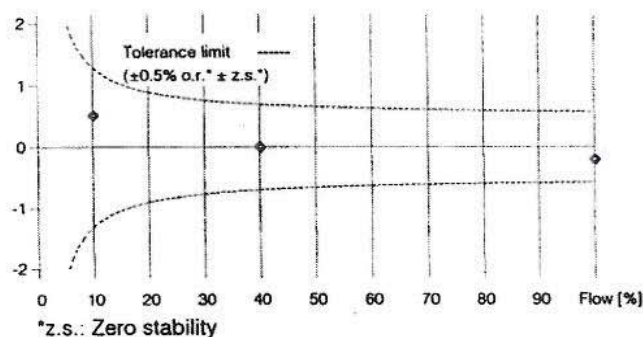
Water temperature

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

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



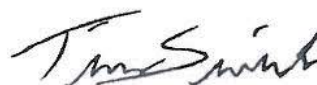
For detailed data concerning output specifications of the unit under test, see technical informations (TI)

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

11-29-2004

Date of calibration

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143



Tim Swick

Operator

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

Flow Calibration with Adjustment

30171212-1304705

WWRA-006931-F

Purchase order number

US-19068473-30 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C036F16000

Serial N°

Tag N°

FCP-6.F

Calibration rig

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

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9101

Calibration factor

-34

Zero point

78.7 °F

Water temperature

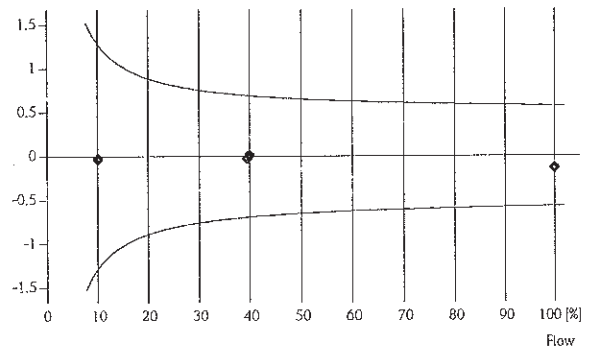
Flow [%]	Flow [us.gal/min]	Duration [s]	V target [us.gal]	V meas. [us.gal]	Δ o.r.* [%]	Outp.** [mA]
10.1	15.7	30.2	7.8942	7.8921	-0.03	5.61
39.5	61.5	30.2	30.956	30.950	-0.02	10.32
39.9	62.1	30.2	31.263	31.268	0.02	10.39
100.0	155.7	30.2	78.338	78.232	-0.14	19.98
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-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

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.

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



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

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

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

John Davis

John Davis

Operator

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

08-06-2010

Date of calibration

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

Flow Calibration with Adjustment

30171217-1275192

WWRA-006931-F

Purchase order number

US-19068473-20 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1RA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6A022116000

Serial N°

Tag N°

FCP-6.F

Calibration rig

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

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9092

Calibration factor

0

Zero point

79.6 °F

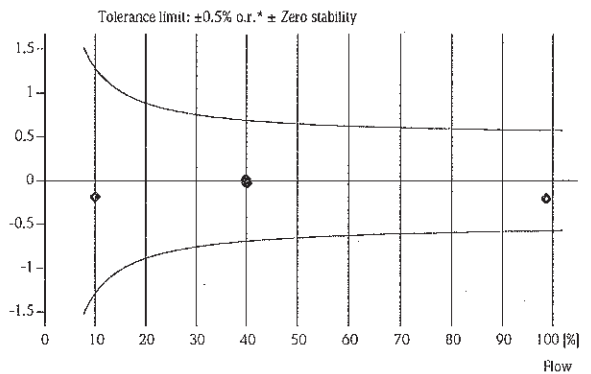
Water temperature

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

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



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

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

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



John Davis

Operator

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

08-06-2010

Date of calibration

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

Flow Calibration without Adjustment

30171214-1275192

WWRA-006931-F

Purchase order number

US-19068473-20 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1RA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6A022116000

Serial N°

Tag N°

FCP-6.F

Calibration rig

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

Calibrated full scale

Current 4 – 20 mA

Calibrated output

0.9111

Calibration factor

0

Zero point

79.2 °F

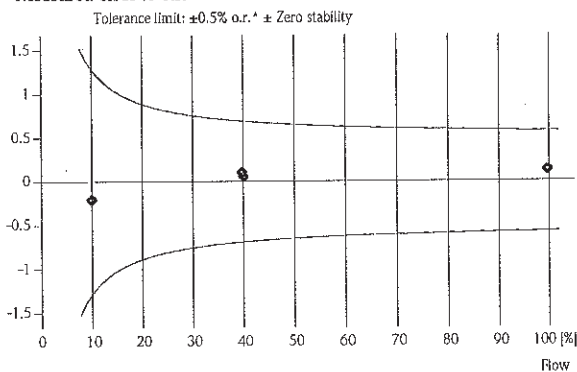
Water temperature

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

*o.r.: of rate

**Calculated value (4 – 20 mA)

Measured error % o.r.



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

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

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

John Davis

08-06-2010

Date of calibration

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

John Davis

Operator

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

Endress+Hauser

People for Process Automation

Flow Calibration with Adjustment

30202337-1.385113

WWRA008929F

Purchase order number

US-465002382-30 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P80-AL1A1AA022AW

Order code

PROMAG 23 P 3"

Transmitter/Sensor

7700C616000

Serial N°

Tag N°

FCP-7.1.B

Calibration rig

398.3621 us.gal/min ($\pm 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

1.1670

Calibration factor

35

Zero point

82.3 °F

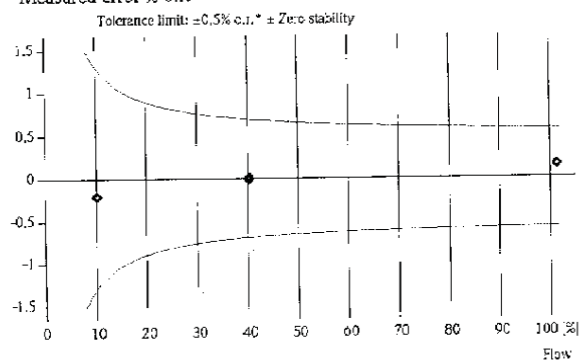
Water temperature

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

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



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

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

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

07-25-2011

Date of calibration

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



Taylor Shepard

Operator

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

Flow Calibration with Adjustment

20132467-1304709

WWRA-004329-F

Purchase order number

US-19061458-10 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1AAC22AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C037316C00

Serial N°

FIT-205

Tag N°

Installed at RO Concentrate 4/1/2011

FIT-1702

IW-02 AR

FCP-6.C

Calibration rig

155.6102 GPM ($\pm 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9146

Calibration factor

0

Zero point

76.2 °F

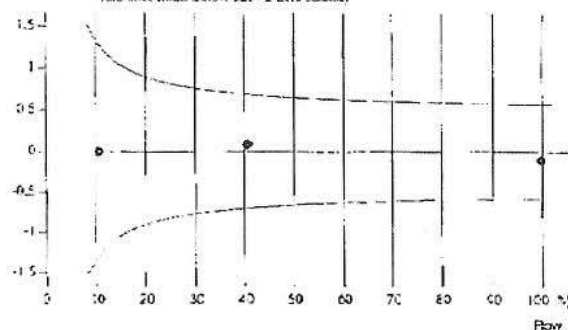
Water temperature

Flow q	Flow [GPM]	Duration t	V target [US GAL]	V meas [US GAL]	Δ out. %	Outp.** [mA]
10.0	15.5	30.1	7.7933	7.7939	0.01	5.60
40.2	62.5	30.1	31.394	31.422	0.09	10.43
40.2	62.5	30.1	31.416	31.448	0.10	10.44
99.8	155.3	30.1	78.006	77.928	-0.10	19.95
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*out. of rate

**Calculated value (4 - 20 mA)

Measured error: % o.r.

Tolerance limits $\pm 0.5\%$ o.r.* & Zero stability

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

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

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

C2-26-2009

Date of calibration:

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



William Darnell

Operator:

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

Appendix D
Second 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

May 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-355 PROJECT, SLUDGE
MONITORING,
TLI No.: 800829

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-355 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 April 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 result for Total Molybdenum by SW 6010B is above the reporting limit and the sample duplicate is below the reporting limit. The sample result is within +/- two times the reporting limit and therefore meets the criteria.

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

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

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

Laboratory No.: 800829

Date: May 16, 2012

Collected: April 3, 2012

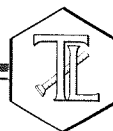
Received: April 3, 2012

ANALYST LIST

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

TRUESDAIL LABORATORIES, INC.

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

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

Laboratory No.: 800829
Date Received: April 3, 2012

Attention: Shawn Duffy

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

Analytical Results Summary

<u>Lab I.D.</u>	<u>Sample I.D.</u>	<u>Sample Time</u>	<u>SW 7199</u> <i>Hexavalent Chromium</i> <i>mg/kg</i>	<u>EPA 300.0</u> <i>Fluoride</i> <i>mg/kg</i>	<u>EPA 300.0</u> <i>Nitrate as N</i> <i>mg/kg</i>	<u>SM 2540 B</u> <i>% Moisture</i> <i>%</i>
800829	SC-Sludge-WDR-355	13:57	60.0	30.4	16.0	61.4

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

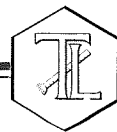
Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01ppm will have two (2) significant figures.
Result above or equal to 0.01ppm will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

005

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

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

Laboratory No.: 800829
Date Received: April 3, 2012

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

Analytical Results Summary

METALS ANALYSIS: Total Metal Analyses as Requested

Lab I.D.	Sample ID	Date of Analysis: Time Coll.	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead
			SW 6010B	SW 6010B	SW 6010B	SW 6020A	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
800829	SC-Sludge-WDR-355	13:57	114	ND	76.3	ND	16.0	7670	ND	11.6	7.52

Lab I.D.	Sample ID	Date of Analysis: Time Coll.	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			SW 6010B	SW 6020A	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B	SW 6010B
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
800829	SC-Sludge-WDR-355	13:57	457	0.238	15.1	25.2	ND	ND	ND	77.1	88.6

NOTES:

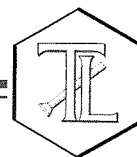
ND: Not detected, or below limit of detection

906

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

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

REPORT

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

Attention: Shawn Duffy

Sample: One (1) Soil Sample

Project Name: PG&E Topock Project

Project No.: 408401.01.DM

P.O. No.: 408401.01.DM

Prep. Batch: 04CrH12V

Laboratory No.: 800829

Date: May 16, 2012

Collected: April 3, 2012

Received: April 3, 2012

Prep/ Analyzed: April 25, 2012

Analytical Batch: 04CrH12V

Investigation:

Hexavalent Chromium by IC Using Method SW 7199

Analytical Results Hexavalent Chromium

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
800829	SC-Sludge-WDR-355	13:57	16:27	mg/kg	5.0	5.11	60.0

QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	800829	60.0	61.6	2.54%	≤ 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	800829	60.0	25.0	16.4	409	466	469	99.3%	75-125%	Yes
IMS	800829	60.0	100	27.6	2764	2840	2824	101%	75-125%	Yes
PDMS	800829	60.0	25.0	10.4	259	327	319	103%	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	2.02	2.00	101%	90% - 110%	Yes
MRCVS#1	2.05	2.00	103%	90% - 110%	Yes
MRCVS#2	2.12	2.00	106%	90% - 110%	Yes
MRCVS#3	1.89	2.00	94.3%	90% - 110%	Yes
LLCS	0.00991	0.0100	99.1%	70% - 130%	Yes
LCS	2.00	2.00	99.9%	80% - 120%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
for Mona Nassimi, Manager
Analytical Services

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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) Soil Sample

Project Name: PG&E Topock Project

Project No.: 408401.01.DM

P.O. No.: 408401.01.DM

REPORT

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

Laboratory No.: 800829

Date: May 16, 2012

Collected: April 3, 2012

Received: April 3, 2012

Prep/ Analyzed: April 4, 2012

Analytical Batch: 04SOLID12A

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>
800829	SC-Sludge-WDR-355	13:57	%	61.4

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	800829	61.4	59.8	2.58%	≤ 20%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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Project No.: 408401.01.DM

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Laboratory No.: 800829

Date: May 16, 2012

Collected: April 3, 2012

Received: April 3, 2012

Prep/ Analyzed: April 4, 2012

Analytical Batch: 04AN12C

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>
800829	SC-Sludge-WDR-355	13:57	12:33	mg/kg	1.00	5.18	30.4

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	800831-2	2.59	2.57	0.89%	≤ 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	800831-2	2.59	5.00	4.00	20.0	22.8	22.6	101%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
Blank	ND	<0.500	---	<0.500	Yes
MRCCS	4.13	4.00	103%	90% - 110%	Yes
MRCVS#1	3.15	3.00	105%	90% - 110%	Yes
MRCVS#2	3.14	3.00	105%	90% - 110%	Yes
LCS	4.13	4.00	103%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

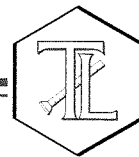
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REPORT

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155 Grand Ave. Suite 1000
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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.: 800829

Date: May 16, 2012

Collected: April 3, 2012

Received: April 3, 2012

Prep/ Analyzed: April 4, 2012

Analytical Batch: 04AN12C

Investigation:

Nitrate as N by Ion Chromatography using EPA 300.0

Analytical Results Nitrate as N

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
800829	SC-Sludge-WDR-355	13:57	12:33	mg/kg	1.00	10.4	16.0

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	800831-2	3.20	3.26	1.86%	≤ 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	800831-2	3.20	5.00	4.00	20.0	23.7	23.2	103%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
Blank	ND	<0.500	---	<0.500	Yes
MRCCS	4.00	4.00	100%	90% - 110%	Yes
MRCVS#1	3.00	3.00	99.8%	90% - 110%	Yes
MRCVS#2	2.99	3.00	99.5%	90% - 110%	Yes
LCS	4.00	4.00	99.9%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

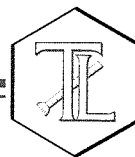
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TRUESDAIL LABORATORIES, INC.

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.: 800829

Reported: May 16, 2012

Collected: April 3, 2012

Received: April 3, 2012

Analyzed: See Below

Analytical Results

SAMPLE ID: SC-Sludge-WDR-355		Time Collected: 13:57		LAB ID: 800829				
Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Antimony	SW 6010B	114	5.00	mg/kg	6.70	040612B	04/06/12	17:21
Arsenic	SW 6010B	ND	5.00	mg/kg	6.70	040612B	04/06/12	17:21
Barium	SW 6010B	76.3	5.00	mg/kg	6.70	040612B	04/06/12	17:21
Beryllium	SW 6020A	ND	20.0	mg/kg	2.31	041812A	04/18/12	14:16
Cadmium	SW 6010B	16.0	5.00	mg/kg	6.70	040612B	04/06/12	17:21
Chromium	SW 6010B	7670	10.0	mg/kg	13.4	041212A	04/12/12	13:47
Cobalt	SW 6010B	ND	5.00	mg/kg	6.70	040612B	04/06/12	17:21
Copper	SW 6010B	11.6	2.00	mg/kg	2.68	042612A	04/26/12	12:01
Lead	SW 6010B	7.52	5.00	mg/kg	6.70	040612B	04/06/12	17:21
Manganese	SW 6010B	457	5.00	mg/kg	6.70	040612B	04/06/12	17:21
Mercury	SW 6020A	0.238	10.0	mg/kg	0.231	041812A	04/18/12	13:47
Molybdenum	SW 6010B	15.1	10.0	mg/kg	13.4	041212A	04/12/12	13:47
Nickel	SW 6010B	25.2	5.00	mg/kg	6.70	040612B	04/06/12	17:21
Selenium	SW 6010B	ND	5.00	mg/kg	6.70	040612B	04/06/12	17:21
Silver	SW 6010B	ND	10.0	mg/kg	13.4	041212A	04/12/12	13:47
Thallium	SW 6010B	ND	5.00	mg/kg	6.70	040612B	04/06/12	17:21
Vanadium	SW 6010B	77.1	5.00	mg/kg	6.70	040612B	04/06/12	17:21
Zinc	SW 6010B	88.6	5.00	mg/kg	6.70	040612B	04/06/12	17:21

NOTES:

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

ND: Not detected, or below limit of detection.

DF: Dilution factor.

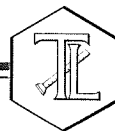
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Project Name: PG&E Topock Project
Project No.: 408401.01.DM
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14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Laboratory No.: 800829
Reported: May 16, 2012
Collected: April 3, 2012
Received: April 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	040612B	mg/kg	ND	2.00	4.85	5.00	97.0%	90-110%	4.86	5.00	97.1%	90-110%
Arsenic	SW 6010B	040612B	mg/kg	ND	0.500	4.86	5.00	97.2%	90-110%	4.89	5.00	97.8%	90-110%
Barium	SW 6010B	040612B	mg/kg	ND	1.00	4.79	5.00	95.7%	90-110%	4.83	5.00	96.7%	90-110%
Beryllium	SW 6020A	041812A	mg/kg	ND	1.00	0.00978	0.0100	97.8%	90-110%	0.0101	0.0100	101%	90-110%
Cadmium	SW 6010B	040612B	mg/kg	ND	0.500	4.92	5.00	98.5%	90-110%	4.93	5.00	98.6%	90-110%
Chromium	SW 6010B	041212A	mg/kg	ND	1.00	5.41	5.00	108%	90-110%	5.30	5.00	106%	90-110%
Cobalt	SW 6010B	040612B	mg/kg	ND	1.00	4.84	5.00	96.9%	90-110%	4.85	5.00	97.0%	90-110%
Copper	SW 6010B	042612A	mg/kg	ND	1.00	4.54	5.00	90.8%	90-110%	4.57	5.00	91.4%	90-110%
Lead	SW 6010B	040612B	mg/kg	ND	1.00	4.67	5.00	93.5%	90-110%	4.69	5.00	93.9%	90-110%
Manganese	SW 6010B	040612B	mg/kg	ND	1.00	4.77	5.00	95.4%	90-110%	4.64	5.00	92.8%	90-110%
Mercury	SW 6020A	041812A	mg/kg	ND	0.100	0.00207	0.00200	104%	90-110%	0.00199	0.00200	99.5%	90-110%
Molybdenum	SW 6010B	041212A	mg/kg	ND	1.00	4.98	5.00	99.5%	90-110%	4.62	5.00	92.3%	90-110%
Nickel	SW 6010B	040612B	mg/kg	ND	1.00	4.87	5.00	97.4%	90-110%	4.89	5.00	97.8%	90-110%
Selenium	SW 6010B	040612B	mg/kg	ND	1.00	5.01	5.00	100%	90-110%	4.99	5.00	99.9%	90-110%
Silver	SW 6010B	041212A	mg/kg	ND	1.00	5.26	5.00	105%	90-110%	4.66	5.00	93.2%	90-110%
Thallium	SW 6010B	040612B	mg/kg	ND	2.00	5.01	5.00	100%	90-110%	5.03	5.00	101%	90-110%
Vanadium	SW 6010B	040612B	mg/kg	ND	1.00	4.61	5.00	92.3%	90-110%	4.50	5.00	90.1%	90-110%
Zinc	SW 6010B	040612B	mg/kg	ND	2.00	5.06	5.00	101%	90-110%	4.95	5.00	99.0%	90-110%

018

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TRUESDAIL LABORATORIES, INC.

Report Continued

INTERFERENCE CHECK STANDARD (ICS A+B #1)

INTERFERENCE CHECK STANDARD (ICS A+B #2)

Parameter	Method	Units	ICS Obs.	ICS Theo.	% Rec.	Control Limits	ICS Obs.	ICS Theo.	% Rec.	Control Limits
Arsenic	SW 6010B	mg/kg	1.93	2.00	96.4%	80-120%	1.93	2.00	96.7%	80-120%
Cadmium	SW 6010B	mg/kg	2.00	2.00	100%	80-120%	1.98	2.00	98.8%	80-120%
Chromium	SW 6010B	mg/kg	2.17	2.00	109%	80-120%	2.29	2.00	114%	80-120%
Cobalt	SW 6010B	mg/kg	2.01	2.00	100%	80-120%	1.95	2.00	97.7%	80-120%
Copper	SW 6010B	mg/kg	1.84	2.00	92.1%	80-120%	1.85	2.00	92.4%	80-120%
Manganese	SW 6010B	mg/kg	1.96	2.00	97.9%	80-120%	1.89	2.00	94.3%	80-120%
Mercury	SW 6020A	mg/kg	0.00210	0.00200	105%	80-120%	0.00208	0.00200	104%	80-120%
Nickel	SW 6010B	mg/kg	2.02	2.00	101%	80-120%	1.98	2.00	99.1%	80-120%
Silver	SW 6010B	mg/kg	2.06	2.00	103%	80-120%	1.90	2.00	95.2%	80-120%
Zinc	SW 6010B	mg/kg	2.08	2.00	104%	80-120%	2.00	2.00	100%	80-120%

LABORATORY CONTROL SAMPLES

SAMPLE DUPLICATES

Parameter	Method	Units	LCS Obs.	LCS Theo.	% Rec.	Control Limits	SAMPLE ID	SAMPLE RESULT	DUP RESULT	% RPD	Precision Control Limits %
Antimony	SW 6010B	mg/kg	5.18	5.00	104%	85-115%	800829	114	95.5	17.6%	≤20
Arsenic	SW 6010B	mg/kg	4.73	5.00	94.5%	85-115%	800829	ND	ND	0.00%	≤20
Barium	SW 6010B	mg/kg	4.61	5.00	92.1%	85-115%	800829	76.3	74.8	1.95%	≤20
Beryllium	SW 6020A	mg/kg	5.01	5.00	100%	85-115%	800829	ND	ND	0.00%	≤20
Cadmium	SW 6010B	mg/kg	5.02	5.00	100%	85-115%	800829	16.0	13.4	18.0%	≤20
Chromium	SW 6010B	mg/kg	5.58	5.00	112%	85-115%	800829	7670	6560	15.6%	≤20
Cobalt	SW 6010B	mg/kg	5.04	5.00	101%	85-115%	800829	ND	4.94	0.00%	≤20
Copper	SW 6010B	mg/kg	5.61	5.00	112%	85-115%	800829	11.6	10.7	8.08%	≤20
Lead	SW 6010B	mg/kg	4.84	5.00	96.8%	85-115%	800829	7.52	6.48	14.9%	≤20
Manganese	SW 6010B	mg/kg	4.79	5.00	95.9%	85-115%	800829	457	499	8.87%	≤20
Mercury	SW 6020A	mg/kg	0.997	1.00	99.7%	85-115%	800829	0.238	0.217	9.24%	≤20
Molybdenum	SW 6010B	mg/kg	4.61	5.00	92.2%	85-115%	800829	15.1	ND	0.00%	≤20
Nickel	SW 6010B	mg/kg	5.44	5.00	109%	85-115%	800829	25.2	24.3	3.46%	≤20
Selenium	SW 6010B	mg/kg	4.94	5.00	98.9%	85-115%	800829	ND	ND	0.00%	≤20
Silver	SW 6010B	mg/kg	5.63	5.00	113%	85-115%	800829	ND	ND	0.00%	≤20
Thallium	SW 6010B	mg/kg	5.31	5.00	106%	85-115%	800829	ND	ND	0.00%	≤20
Vanadium	SW 6010B	mg/kg	4.60	5.00	91.9%	85-115%	800829	77.1	64.1	18.4%	≤20
Zinc	SW 6010B	mg/kg	5.17	5.00	103%	85-115%	800829	88.6	85.0	4.14%	≤20

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MATRIX SPIKE

Sample ID	Parameter	Method	Units	Sample Result	DF	Spike Level	Total Amt. of Spike	Theo. Value	MS Obs.	% Rec.	Accuracy Control Limits %
800829	Antimony	SW 6010B	mg/kg	114	5.00	134	670	784	731	92.1%	75-125%
800829	Arsenic	SW 6010B	mg/kg	0.00	5.00	134	670	670	709	106%	75-125%
800829	Barium	SW 6010B	mg/kg	76.3	5.00	134	670	746	738	98.8%	75-125%
800829	Beryllium	SW 6020A	mg/kg	0.00	20.0	1.34	26.8	26.8	28.8	107%	75-125%
800829	Cadmium	SW 6010B	mg/kg	16.0	5.00	134	670	686	666	97.1%	75-125%
800829	Chromium	SW 6010B	mg/kg	7670	10.0	134	1340	9010	9030	102%	75-125%
800829	Cobalt	SW 6010B	mg/kg	0.00	5.00	134	670	670	635	94.8%	75-125%
800829	Copper	SW 6010B	mg/kg	11.6	2.00	6.37	12.7	24.4	22.7	86.9%	75-125%
800829	Lead	SW 6010B	mg/kg	7.52	5.00	134	670	677	601	88.6%	75-125%
800829	Manganese	SW 6010B	mg/kg	457	5.00	134	670	1127	1120	99.0%	75-125%
800829	Mercury	SW 6020A	mg/kg	0.238	10.0	0.268	2.68	2.92	2.84	97.3%	75-125%
800829	Molybdenum	SW 6010B	mg/kg	15.1	10.0	134	1340	1355	1370	101%	75-125%
800829	Nickel	SW 6010B	mg/kg	25.2	5.00	134	670	695	662	95.0%	75-125%
800829	Selenium	SW 6010B	mg/kg	0.00	5.00	134	670	670	667	99.6%	75-125%
800829	Silver	SW 6010B	mg/kg	0.00	10.0	134	1340	1340	1100	82.1%	75-125%
800829	Thallium	SW 6010B	mg/kg	0.00	5.00	134	670	670	594	88.7%	75-125%
800829	Vanadium	SW 6010B	mg/kg	77.1	5.00	134	670	747	697	92.6%	75-125%
800829	Zinc	SW 6010B	mg/kg	88.6	5.00	134	670	758	752	99.1%	75-125%

ND: Not detected, or below limit of detection.

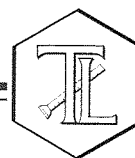
DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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Dry Weight Calculations

Date Calculated: 5/16/2012

	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	11.752	---	61.4	30.4125	30.4	2.00	5.18
Nitrate as N	6.176	---	61.4	15.9826	16.0	4.00	10.4
Hexavalent Chromium	23.2007	---	61.4	60.0401	60.0	1.98	5.11
Hexavalent Chromium - Dup	23.7984	---	61.4	61.5868	61.6	1.98	5.11
Hexavalent Chromium - MS	180.1715	---	61.4	466.258	466	10.1	26.1
Hexavalent Chromium - IMS	1096.533	---	61.4	2837.671	2840	40.0	104
Hexavalent Chromium - PDMS	126.5500	---	61.4	327.493	327	9.88	25.6
Antimony	44.03	5.00	61.4	113.9434	114	2.59	6.70
Arsenic	ND	5.00	61.4	ND	ND	2.59	6.70
Barium	29.47	5.00	61.4	76.26417	76.3	2.59	6.70
Beryllium	ND	20.0	61.4	ND	ND	0.891	2.31
Cadmium	6.195	5.00	61.4	16.0318	16.0	2.59	6.70
Chromium	2965	10.0	61.4	7672.9983	7670	5.177	13.4
Cobalt	2.049	5.00	61.4	5.3025	ND	2.59	6.70
Copper	4.493	2.00	61.4	11.6272	11.6	1.04	2.68
Lead	2.906	5.00	61.4	7.5203	7.52	2.59	6.70
Manganese	176.6	5.00	61.4	457.0157	457	2.59	6.70
Mercury	0.09208	10.0	61.4	0.23829	0.238	0.0891	0.231
Molybdenum	5.833	10.00	61.4	15.0950	15.1	5.18	13.4
Nickel	9.737	5.00	61.4	25.1980	25.2	2.59	6.70
Selenium	ND	5.00	61.4	ND	ND	2.59	6.70
Silver	ND	10.0	61.4	ND	ND	5.18	13.4
Thallium	ND	5.00	61.4	ND	ND	2.59	6.70
Vanadium	29.79	5.00	61.4	77.0923	77.1	2.59	6.70
Zinc	34.23	5.00	61.4	88.5824	88.6	2.59	6.70

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: 04/04/12

Analytical Batch:	04SOLID12A
Oven Temp, °C:	105

[illegible]

Relative Percent Difference			
Sample ID	Sample	Sample Dup	RPD
800829	38.640	40.202	4.0

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

Where:

A = Weight of dried Residue + Dish, g

B = Weight of dish, g

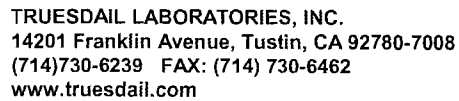
C = Weight of wet sample + Dish, g

BITA
G Savani
Analyst Name

Analyst Signature

Reviewer Name

Reviewer Signature



[IM3plant-WDR-355]

800829

TURNAROUND TIME 10 Days
DATE 04/03/12 PAGE 1 OF 1

[illegible]

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS								
Signature (Relinquished)	<i>C. Knight</i>	Printed Name	<i>C. Knight</i>	Company/ Agency	<i>CH2MHILL</i>	Date/ Time	<i>4/3/12 15:45</i>	RECEIVED	COOL	<input checked="" type="checkbox"/>	WARM	<input type="checkbox"/>	<i>3.40 °C</i>
Signature (Received)	<i>PLS</i>	Printed Name	<i>Hipolito</i>	Company/ Agency	<i>TLI</i>	Date/ Time	<i>4-3-12 15:45</i>	CUSTODY SEALED	YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	
Signature (Relinquished)	<i>PLS</i>	Printed Name	<i>Hipolito</i>	Company/ Agency	<i>TLI</i>	Date/ Time	<i>4-3-12 21:30</i>	SPECIAL REQUIREMENTS:					
Signature (Received)	<i>PLS</i>	Printed Name	<i>Hipolito</i>	Company/ Agency	<i>TLI</i>	Date/ Time	<i>4/3/12 21:30</i>						
Signature (Relinquished)		Printed Name		Company/ Agency		Date/ Time							
Signature (Received)		Printed Name		Company/ Agency		Date/ Time							

050



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2

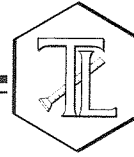
Lab # 80029

Date Delivered: 04/03/12 Time: 11:30 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 3.4°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 = _____ ☐ Yes ☐ No ☒ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☒ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☐ Other _____
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Quabine

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

April 17, 2012

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

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-193, GROUNDWATER MONITORING PROJECT, TLI NO.: 800830

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-193 groundwater-monitoring project for Total Dissolved and Hexavalent Chromium, Total Dissolved Solids, and Specific Conductivity. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on April 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.

The sample times on the containers were the reverse of what was on the chain-of-custody. The sample times on the containers were: 13:40 for PE-01-193 and 13:33 for TW-03D-193 (except the Hexavalent Chromium container which had 13:40) versus the chain-of-custody sample times of 13:33 and 13:40, respectively. Mr. Chris Knight verified that the sample times on the COC were correct.

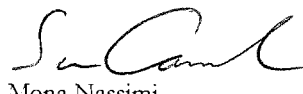
Per Mr. Shawn Duffy's request, the pH analysis was cancelled.

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

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

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

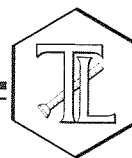
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


to - Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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

Attention: Shawn Duffy

Sample: Two (2) Groundwater Samples

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

14201 FRANKLIN AVENUE
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www.truesdail.com

Laboratory No.: 800830

Date: April 17, 2012

Collected: April 3, 2012

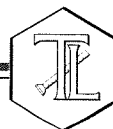
Received: April 3, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Kim Luck
EPA 200.8	Total Dissolved Chromium	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov / Melissa Scharfe / George Wahba
SM 3500-CrB	Hexavalent Chromium	Kim Luck

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

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

Attention: Shawn Duffy

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

Laboratory No.: 800830
Date Received: April 3, 2012

Analytical Results Summary

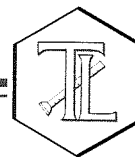
Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800830-001	PE-01-193	E120.1	NONE	4/3/2012	13:33	EC	4910	umhos/cm	2.00
800830-001	PE-01-193	E200.8	LABFLT	4/3/2012	13:33	Chromium	7.5	ug/L	1.0
800830-001	PE-01-193	E218.6	LABFLT	4/3/2012	13:33	Chromium, hexavalent	7.4	ug/L	0.20
800830-001	PE-01-193	SM2540C	NONE	4/3/2012	13:33	Total Dissolved Solids	2800	mg/L	125
800830-002	TW-03D-193	E120.1	NONE	4/3/2012	13:40	EC	8450	umhos/cm	2.00
800830-002	TW-03D-193	E200.8	LABFLT	4/3/2012	13:40	Chromium	929	ug/L	2.0
800830-002	TW-03D-193	SM2540C	NONE	4/3/2012	13:40	Total Dissolved Solids	5300	mg/L	250
800830-002	TW-03D-193	SM3500-CrB	LABFLT	4/3/2012	13:40	Chromium, hexavalent	937	ug/L	100

ND: Non Detected (below reporting limit)

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

TRUESDAIL LABORATORIES, INC.

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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. 800830

Page 1 of 6

Printed 4/17/2012

Samples Received on 4/3/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-193	800830-001	04/03/2012 13:33	Water
TW-03D-193	800830-002	04/03/2012 13:40	Water

Specific Conductivity - EPA 120.1

Batch 04EC12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800830-001 Specific Conductivity	umhos/cm	04/04/2012	1.00	0.0950	2.00	4910
800830-002 Specific Conductivity	umhos/cm	04/04/2012	1.00	0.0950	2.00	8450

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	7750	7760	0.129	0 - 10

Lab ID = 800831-002

Lab Control Sample

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

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	703	706	99.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	960	998	96.2	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 6

Project Number: 424973.01.DM

Printed 4/17/2012

Chrome VI by EPA 218.6

Batch 04CrH12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800830-001 Chromium, Hexavalent	ug/L	04/04/2012 12:50	1.00	0.0260	0.20	7.4

Method Blank

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

Duplicate

Lab ID = 800830-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.36	7.36	0.0367	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.196	0.200	97.8	70 - 130

Lab Control Sample

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

Matrix Spike

Lab ID = 800830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.2	17.4(10.0)	98.4	90 - 110

Matrix Spike

Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.11	5.09(5.00)	100.	90 - 110

Matrix Spike

Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.09(1.00)	94.5	90 - 110

Matrix Spike

Lab ID = 800831-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1720	1770(1000)	94.8	90 - 110

Matrix Spike

Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	11.1	11.1(10.0)	99.7	90 - 110

Matrix Spike

Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 6

Project Number: 424973.01.DM

Printed 4/17/2012

Matrix Spike

Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.89	5.87(5.00)	100.	90 - 110

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100.	95 - 105

Chromium, Hexavalent by SM 3500-Cr B

Batch 04CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800830-002 Chromium, Hexavalent	ug/L	04/04/2012 15:33	10.0	15.0	100.	937.

Method Blank

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

Duplicate

Lab ID = 800830-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	937.	937	0.0213	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	108.	100.	108.	90 - 110

Matrix Spike

Lab ID = 800830-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	1920	1940(1000)	98.9	85 - 115

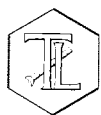
MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	57.6	60.0	96.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	56.3	60.0	93.8	90 - 110

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 6

Project Number: 424973.01.DM

Printed 4/17/2012

Total Dissolved Solids by SM 2540 C

Batch 04TDS12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800830-001 Total Dissolved Solids	mg/L	04/04/2012	1.00	0.400	125	2800
800830-002 Total Dissolved Solids	mg/L	04/04/2012	1.00	0.400	250.	5300

Method Blank

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

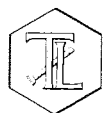
Duplicate

Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4520	4430	2.01	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	455	500.	91.0	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 4/17/2012

Metals by EPA 200.8, Dissolved

Batch 041012A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800830-001 Chromium	ug/L	04/10/2012 20:00	5.00	0.110	1.0	7.5
800830-002 Chromium	ug/L	04/10/2012 20:28	10.0	0.220	2.0	929.

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Duplicate

Lab ID = 800830-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	7.15	7.52	5.09	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.176	0.200	88.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	90.7	100.	90.7	85 - 115

Matrix Spike

Lab ID = 800830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	99.8	108.(100.)	92.3	75 - 125

Matrix Spike Duplicate

Lab ID = 800830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	101.	108.(100.)	93.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.5	10.0	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	90 - 110

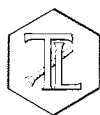
MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.94	10.0	99.4	90 - 110

MRCVS - Primary

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

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 6

Project Number: 424973.01.DM

Printed 4/17/2012

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.58	10.0	95.8	90 - 110

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.94	10.0	99.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.77	10.0	97.7	80 - 120

Serial Dilution

Lab ID = 800830-002

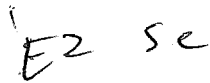
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	50.0	917.	929	1.28	0 - 10

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


for Mona Nassimi

Manager, Analytical Services




Calculations

Date Calculated: 4/4/12

Calculation as follows:

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

C = mL of sample filtered.


Reviewer Signature

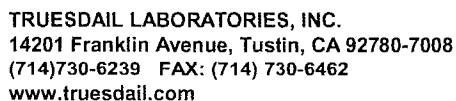
TDS/EC CHECK

Date Calculated: 4/4/12

[illegible]

2

4



[IM3Plant-EW-193]

800 830

10 Days

PAGE 1 OF 1

COMPANY				CH2M HILL /E2												COMMENTS				
PROJECT NAME				PG&E Topock IM3Plant-EW																
PHONE				530-229-3303					FAX					530-339-3303						
ADDRESS				155 Grand Ave Ste 1000 Oakland, CA 94612																
P.O. NUMBER				424973.01.DM																
SAMPLERS (SIGNATURE)				<i>C. Cuyler</i>																
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Dissolved Cr (200.7) Lab filtered	Cr(VI) (3500-Cr B)	pH (150.0) EC (120.1)	TDS (160.1)	Cr(VI) (218.6)												
PE-01-193	04/03/12	13:33	Ground water	X		X	X	X								4	<i>pH=6 } 200. pH=6 }</i>			
TW-03D-193	04/03/12	13:40	Ground water	X	X	X	X								4					
ALERT!! Level III QC				For Sample Conditions See Form Attached										8	TOTAL NUMBER OF CONTAINERS					

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	<i>C. Knight</i>	Printed Name	<i>C. Knight</i>	Company/ Agency	<i>CH2MHILL</i>	Date/ Time	<i>4/3/12 15:45</i>
Signature (Received)	<i>pl</i>	Printed Name	<i>Hypolite</i>	Company/ Agency	<i>TL1</i>	Date/ Time	<i>4-3-12 15:45</i>
Signature (Relinquished)	<i>pl</i>	Printed Name	<i>Hypolite</i>	Company/ Agency	<i>TL1</i>	Date/ Time	<i>4-3-12 21:30</i>
Signature (Received)	<i>huda</i>	Printed Name	<i>Shabirasing</i>	Company/ Agency	<i>TL1</i>	Date/ Time	<i>4/3/12 21:30</i>
Signature (Relinquished)		Printed Name		Company/ Agency		Date/ Time	
Signature (Received)		Printed Name		Company/ Agency		Date/ Time	

SAMPLE CONDITIONS

WARM ☐

CUSTODY SEALED

YES ☐

NO ☒

SPECIAL REQUIREMENTS:

040

Subject: FW: Topock COC discrepancy - SDG 800830
From: "Shawn.Duffy@CH2M.com" <Shawn.Duffy@CH2M.com>
Date: Wed, 4 Apr 2012 19:39:30 -0400
To: Sean Condon <seanc@truesdail.com>

See response below from Chris.

Shawn

-----Original Message-----

From: Knight, Chris/TCK
Sent: Wednesday, April 04, 2012 3:57 PM
To: Duffy, Shawn/RDD
Subject: RE: Topock COC discrepancy - SDG 800830

Shawn - The times on the COC are the correct times. Our printer went down yesterday and we had to use a desk jet to print the labels where any amount of moisture causes the ink to run. We printed the labels twice and I guess they got confused transferring information. So PE-1 was sampled at 13:33 and TW-3D was sampled at 13:40.

Chris

-----Original Message-----

From: Duffy, Shawn/RDD
Sent: Wednesday, April 04, 2012 1:35 PM
To: Knight, Chris/TCK
Subject: FW: Topock COC discrepancy - SDG 800830

See issue of COC vs labels below... Can you clarify?

Shawn

-----Original Message-----

From: Sean Condon [<mailto:seanc@truesdail.com>]
Sent: Wednesday, April 04, 2012 1:14 PM
To: Duffy, Shawn/RDD
Subject: Topock COC discrepancy - SDG 800830

Hi Shawn,

I have attached the COC for SDG 800830 (IM3Plant-EW-193). The sample times on the containers were the reverse of what is on the COC. The sample times on the containers are:

PE-01-193 - All have 13:40 (COC is 13:33)

TW-03D-193 - All have 13:33 except the Cr6 container which has 13:40 (COC is 13:40)

Also, most of the sample information on the labels was washed off and illegible except for the hand written sample time, date, and sampler.

--

Sean Condon
Project Manager
Truesdail Laboratories, Inc.
Phone: (714) 730-6239
Fax: (714) 730-6462

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Gu 4/2/12

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
800646	>2	<2	3/26/12	KK	YES	3/26/12 3:10A
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	3:10A
800718	↓	↓	↓	↓	↓	↓
800719	↓	↓	↓	↓	↓	↓
800B2	BE <1	>2	↓	↓	yes	3:10A yes 10:30 AM
800742	<1	BE <2 >2	3/29/12	BE	NO	yes 7:15 AM
800747	>1	A ↓	↓	↓	yes	3:10A ↓
800750(1-12)	<1	>2	↓	↓	NO	yes 7:15
800751	<1	<2 BE 3-27-12	↓	↓	NO	NO
800756	<1	<2 >2 BE	↓	↓	yes	3:10A yes 7:45
800770(1-2)	<1	<2 >2 BE	3-30-12	BE	yes	3:10A yes 7:45 AM
800778(1-2)	<1	>2	4-2-12	BE	NO	3:10A 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 BE 4-3-12	>2	↓	↓	↓	yes 15: PM
800830(1-2)	<1	>2	4-4-12	BE	yes	3:10A yes 7:45 AM
800831(1-3)	<1	-2 >2	↓	↓	↓	-2 → yes 7:45
800837	>1	<2	↓	↓	yes	3:10
800808	↓	↓	↓	↓	↓	↓
800811	↓	↓	↓	↓	↓	↓
800809	<1	↓	↓	↓	NO	NO
800810	↓	↓	↓	↓	↓	↓
800812	↓	↓	↓	↓	↓	↓
800816	↓	↓	↓	↓	↓	↓
800826-4	↓	↓	↓	↓	↓	↓
800827	↓	↓	↓	↓	↓	↓
800823	↓	>2	↓	↓	↓	yes 10:00 AM
800824(1-3)	↓	↓	↓	↓	↓	↓
800831(1-3)	<1	<2	4-4-12	↓	yes	3:10A

BE
4-4-12



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2

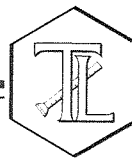
Lab # SW830

Date Delivered: 04/03/12 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? ☒ Yes ☐ No ☐ N/A
Temperature (if yes)? 3.4°C
7. Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation? ☐ Yes ☐ No ☒ N/A
Preserved (if yes) by: ☐ Truesdail ☐ Client
12. Were samples pH checked? pH = See C.O.C. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt? ☒ Yes ☐ No ☐ N/A
If not, notify Project Manager.
14. Have Project due dates been checked and accepted? ☒ Yes ☐ No ☐ N/A
Turn Around Time (TAT): ☐ RUSH ☒ Std
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☒ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☐ Other _____
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Stabucina

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

May 2, 2012

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

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-355 PROJECT, GROUNDWATER
MONITORING,
TLI NO.: 800831

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-355 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 April 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.

The Terbium (Tb) internal standard recovery for the calibration blank analyzed at 19:25 on April 10, 2012 in Analytical Batch 041012A for Total Antimony, Thallium, and Lead by EPA 200.8 was 130.4% which exceeds the upper limit of 130%. All other QA/QC were within acceptable limits and all results for samples associated with this internal standard were below the reporting limit. Mr. Shawn Duffy of CH2M Hill was notified and accepted the data.

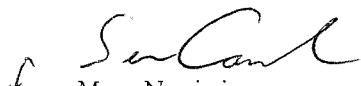
The matrix spike recovery for Total Silver by EPA 200.8 in batch 041712B was 53.4%, which was outside the acceptance limits of 75-125%. A post-spike addition was then performed on the sample and had a recovery of 76.2%, which is within the acceptance limits of 75-125%. Mr. Duffy was notified and accepted the data.

The Lithium (Li) internal standard recovery for the Mid-range Calibration Check Standard (MRCCS) analyzed at 13:16 on April 20, 2012 in Analytical Batch 042012A for Total Beryllium by EPA 200.8 was 147% which exceeds the upper limit of 130%. All other QA/QC were within acceptable limits and the sample result was below the reporting limit. Mr. Duffy was notified and accepted the data.

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


to - Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer 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: Three (3) 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.: 800831

Date: May 2, 2012

Collected: April 3, 2012

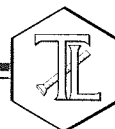
Received: April 3, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Kim Luck
SM 2130B	Turbidity	Gautam Savani
EPA 300.0	Anions	Giawad Ghenniwa
SM 4500-NH3 D	Ammonia	Bitu Emami
SM 4500-NO2 B	Nitrite as N	Maria Mangarova
EPA 200.7	Metals by ICP	Ethel Suico
EPA 200.8	Metals by ICP/MS	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	George Wahba / Maksin Gorbunov / Melissa Scharfe

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

Laboratory No.: 800831
Date Received: April 3, 2012

Attention: Shawn Duffy

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800831-001	SC-700B-WDR-355	E120.1	NONE	4/3/2012	14:29	EC	7510	umhos/cm	2.00
800831-001	SC-700B-WDR-355	E200.7	NONE	4/3/2012	14:29	Aluminum	ND	ug/L	50.0
800831-001	SC-700B-WDR-355	E200.7	NONE	4/3/2012	14:29	BORON	1030	ug/L	200
800831-001	SC-700B-WDR-355	E200.7	NONE	4/3/2012	14:29	Iron	ND	ug/L	20.0
800831-001	SC-700B-WDR-355	E200.7	NONE	4/3/2012	14:29	Molybdenum	18.9	ug/L	10.0
800831-001	SC-700B-WDR-355	E200.7	NONE	4/3/2012	14:29	Zinc	ND	ug/L	10.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Antimony	ND	ug/L	10.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Arsenic	ND	ug/L	1.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Barium	11.8	ug/L	10.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Chromium	ND	ug/L	1.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Copper	ND	ug/L	5.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Lead	ND	ug/L	10.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Manganese	3.1	ug/L	1.0
800831-001	SC-700B-WDR-355	E200.8	NONE	4/3/2012	14:29	Nickel	ND	ug/L	10.0
800831-001	SC-700B-WDR-355	E218.6	LABFLT	4/3/2012	14:29	Chromium, hexavalent	ND	ug/L	0.20
800831-001	SC-700B-WDR-355	E300	NONE	4/3/2012	14:29	Fluoride	2.11	mg/L	0.500
800831-001	SC-700B-WDR-355	E300	NONE	4/3/2012	14:29	Nitrate as N	3.06	mg/L	1.00
800831-001	SC-700B-WDR-355	E300	NONE	4/3/2012	14:29	Sulfate	564	mg/L	25.0
800831-001	SC-700B-WDR-355	SM2130B	NONE	4/3/2012	14:29	Turbidity	0.108	NTU	0.100
800831-001	SC-700B-WDR-355	SM2540C	NONE	4/3/2012	14:29	Total Dissolved Solids	4430	mg/L	250
800831-001	SC-700B-WDR-355	SM4500NH3D	NONE	4/3/2012	14:29	Ammonia-N	ND	mg/L	0.500
800831-001	SC-700B-WDR-355	SM4500NO2B	NONE	4/3/2012	14:29	Nitrite as N	ND	mg/L	0.0050

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



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800831-002	SC-100B-WDR-355	E120.1	NONE	4/3/2012	14:47	EC	7760	umhos/cm	2.00
800831-002	SC-100B-WDR-355	E200.7	NONE	4/3/2012	14:47	Aluminum	ND	ug/L	50.0
800831-002	SC-100B-WDR-355	E200.7	NONE	4/3/2012	14:47	BORON	1070	ug/L	200
800831-002	SC-100B-WDR-355	E200.7	NONE	4/3/2012	14:47	Iron	ND	ug/L	20.0
800831-002	SC-100B-WDR-355	E200.7	NONE	4/3/2012	14:47	Molybdenum	20.4	ug/L	10.0
800831-002	SC-100B-WDR-355	E200.7	NONE	4/3/2012	14:47	Zinc	ND	ug/L	10.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Antimony	ND	ug/L	10.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Arsenic	3.4	ug/L	1.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Barium	26.0	ug/L	10.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Chromium	804	ug/L	1.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Copper	ND	ug/L	5.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Lead	ND	ug/L	10.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Manganese	6.0	ug/L	1.0
800831-002	SC-100B-WDR-355	E200.8	NONE	4/3/2012	14:47	Nickel	ND	ug/L	10.0
800831-002	SC-100B-WDR-355	E218.6	LABFLT	4/3/2012	14:47	Chromium, hexavalent	768	ug/L	10.0
800831-002	SC-100B-WDR-355	E300	NONE	4/3/2012	14:47	Fluoride	2.59	mg/L	0.500
800831-002	SC-100B-WDR-355	E300	NONE	4/3/2012	14:47	Nitrate as N	3.20	mg/L	1.00
800831-002	SC-100B-WDR-355	E300	NONE	4/3/2012	14:47	Sulfate	543	mg/L	50.0
800831-002	SC-100B-WDR-355	SM2130B	NONE	4/3/2012	14:47	Turbidity	0.134	NTU	0.100
800831-002	SC-100B-WDR-355	SM2540C	NONE	4/3/2012	14:47	Total Dissolved Solids	4440	mg/L	250
800831-002	SC-100B-WDR-355	SM4500NH3D	NONE	4/3/2012	14:47	Ammonia-N	ND	mg/L	0.500
800831-002	SC-100B-WDR-355	SM4500NO2B	NONE	4/3/2012	14:47	Nitrite as N	ND	mg/L	0.0050



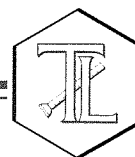
Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
800831-003	SC-701-WDR-355	E120.1	NONE	4/3/2012	14:14	EC	40300	umhos/cm	2.00
800831-003	SC-701-WDR-355	E200.7	NONE	4/3/2012	14:14	Molybdenum	113	ug/L	10.0
800831-003	SC-701-WDR-355	E200.7	NONE	4/3/2012	14:14	Zinc	ND	ug/L	10.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Antimony	ND	ug/L	10.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Arsenic	ND	ug/L	1.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Barium	68.5	ug/L	10.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Beryllium	ND	ug/L	1.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Cadmium	ND	ug/L	3.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Chromium	3.5	ug/L	1.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Cobalt	ND	ug/L	5.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Copper	ND	ug/L	5.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Lead	ND	ug/L	10.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Manganese	24.8	ug/L	1.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Mercury	ND	ug/L	1.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Nickel	ND	ug/L	10.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Selenium	19.4	ug/L	10.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Silver	ND	ug/L	5.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Thallium	ND	ug/L	1.0
800831-003	SC-701-WDR-355	E200.8	NONE	4/3/2012	14:14	Vanadium	ND	ug/L	5.0
800831-003	SC-701-WDR-355	E218.6	LABFLT	4/3/2012	14:14	Chromium, hexavalent	ND	ug/L	2.0
800831-003	SC-701-WDR-355	E300	NONE	4/3/2012	14:14	Fluoride	13.8	mg/L	0.500
800831-003	SC-701-WDR-355	SM2540C	NONE	4/3/2012	14:14	Total Dissolved Solids	31200	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.

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



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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. 800831

Page 1 of 31

Printed 5/2/2012

Samples Received on 4/3/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-355	800831-001	04/03/2012 14:29	Water
SC-100B-WDR-355	800831-002	04/03/2012 14:47	Water
SC-701-WDR-355	800831-003	04/03/2012 14:14	Water

Anions By I.C. - EPA 300.0

Batch 04AN12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800831-001 Fluoride	mg/L	04/04/2012 11:47	5.00	0.155	0.500	2.11
Nitrate as Nitrogen	mg/L	04/04/2012 11:47	5.00	0.135	1.00	3.06
Sulfate	mg/L	04/04/2012 15:16	50.0	5.70	25.0	564.
800831-002 Fluoride	mg/L	04/04/2012 11:59	5.00	0.155	0.500	2.59
Nitrate as Nitrogen	mg/L	04/04/2012 11:59	5.00	0.135	1.00	3.20
Sulfate	mg/L	04/04/2012 15:27	100	11.4	50.0	543.
800831-003 Fluoride	mg/L	04/04/2012 12:10	5.00	0.155	0.500	13.8

Method Blank

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

Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	5.00	2.57	2.59	0.736	0 - 20
Sulfate	mg/L	100	546.	543	0.604	0 - 20
Nitrate as Nitrogen	mg/L	5.00	3.26	3.20	1.92	0 - 20

Lab ID = 800831-002

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 31

Project Number: 424973.01.DM

Printed 5/2/2012

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.13	4.00	103.	90 - 110
Sulfate	mg/L	1.00	20.0	20.0	99.8	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00	99.9	90 - 110

Matrix Spike

Lab ID = 800831-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	5.00	22.8	22.6(20.0)	101.	85 - 115
Sulfate	mg/L	100	1560	1540(1000)	102.	85 - 115
Nitrate as Nitrogen	mg/L	5.00	23.7	23.2(20.0)	103.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.13	4.00	103.	90 - 110
Sulfate	mg/L	1.00	20.0	20.0	100.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.15	3.00	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.14	3.00	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	15.0	15.0	100.	90 - 110

MRCVS - Primary

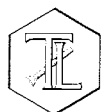
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	15.0	15.0	100.	90 - 110

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.99	3.00	99.5	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 31

Project Number: 424973.01.DM

Printed 5/2/2012

Nitrite SM 4500-NO2 B

Batch 04NO212C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800831-001 Nitrite as Nitrogen	mg/L	04/04/2012 18:04	1.00	0.000400	0.0050	ND
800831-002 Nitrite as Nitrogen	mg/L	04/04/2012 18:05	1.00	0.000400	0.0050	ND

Method Blank

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

Duplicate

Lab ID = 800831-001

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	0.0411	0.0400	103.	90 - 110

Matrix Spike

Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0209	0.0200(0.0200)	104.	85 - 115

Matrix Spike Duplicate

Lab ID = 800831-001

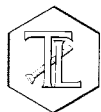
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0202	0.0200(0.0200)	101	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0202	0.0200	101	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0207	0.0200	104.	90 - 110



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 31

Project Number: 424973.01.DM

Printed 5/2/2012

Specific Conductivity - EPA 120.1

Batch 04EC12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800831-001 Specific Conductivity	umhos/cm	04/04/2012	1.00	0.0950	2.00	7510
800831-002 Specific Conductivity	umhos/cm	04/04/2012	1.00	0.0950	2.00	7760
800831-003 Specific Conductivity	umhos/cm	04/04/2012	1.00	0.0950	2.00	40300

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 800831-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7750	7760	0.129	0 - 10

Lab Control Sample

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

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	703	706	99.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	960.	998	96.2	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 31

Project Number: 424973.01.DM

Printed 5/2/2012

Chrome VI by EPA 218.6

Batch 04CrH12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800831-001 Chromium, Hexavalent	ug/L	04/04/2012 13:11	1.00	0.0260	0.20	ND
800831-002 Chromium, Hexavalent	ug/L	04/04/2012 13:22	50.0	1.30	10.0	768.
800831-003 Chromium, Hexavalent	ug/L	04/04/2012 17:40	10.0	0.260	2.0	ND

Method Blank

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

Duplicate

Lab ID = 800830-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.36	7.36	0.0367	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.196	0.200	97.8	70 - 130

Lab Control Sample

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

Matrix Spike

Lab ID = 800830-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.2	17.4(10.0)	98.4	90 - 110

Matrix Spike

Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.11	5.09(5.00)	100.	90 - 110

Matrix Spike

Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.09(1.00)	94.5	90 - 110

Matrix Spike

Lab ID = 800831-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1720	1770(1000)	94.8	90 - 110

Matrix Spike

Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	10.0	11.1	11.1(10.0)	99.7	90 - 110

Matrix Spike

Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.00	1.00(1.00)	0.00	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 31

Project Number: 424973.01.DM

Printed 5/2/2012

Matrix Spike

Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.89	5.87(5.00)	100.	90 - 110

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100.	95 - 105



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 31

Project Number: 424973.01.DM

Printed 5/2/2012

Metals by EPA 200.7, Total

Batch 040612A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800831-001 Molybdenum	ug/L	04/06/2012 11:10	1.00	4.02	10.0	18.9
800831-002 Molybdenum	ug/L	04/06/2012 11:16	1.00	4.02	10.0	20.4
800831-003 Molybdenum	ug/L	04/06/2012 11:22	1.00	4.02	10.0	113.

Method Blank

Parameter	Unit	DF	Result
Molybdenum	ug/L	1.00	ND

Duplicate

Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Molybdenum	ug/L	1.00	118.	113	3.90	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	102.	100.	102.	85 - 115

Matrix Spike

Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	218.	213(100.)	105.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	5030	5000	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	4860	5000	97.3	90 - 110

MRCVS - Primary

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

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	43.0	40.0	108.	80 - 120

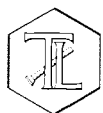
Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	40.4	40.0	101	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	41.1	40.0	103.	80 - 120

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 31

Project Number: 424973.01.DM

Printed 5/3/2012
Revised

Metals by EPA 200.7, Total

Batch 041212A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800831-001 Aluminum	ug/L	04/12/2012 12:45	5.00	14.2	50.0	ND
Boron	ug/L	04/12/2012 11:51	1.00	1.50	200.	1030
Iron	ug/L	04/12/2012 11:51	1.00	1.34	20.0	ND
800831-002 Aluminum	ug/L	04/12/2012 12:39	1.00	2.83	50.0	ND
Boron	ug/L	04/12/2012 12:39	1.00	1.50	200.	1070
Iron	ug/L	04/12/2012 12:39	1.00	1.34	20.0	ND

Method Blank

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

Duplicate

Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Aluminum	ug/L	5.00	ND	0.00	0	0 - 20
Iron	ug/L	1.00	ND	0.00	0	0 - 20
Boron	ug/L	1.00	1010	1030	1.76	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	2170	2000	108.	85 - 115
Iron	ug/L	1.00	2140	2000	107.	85 - 115
Boron	ug/L	1.00	2180	2000	109.	85 - 115

Matrix Spike

Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	5.00	7840	10000(10000)	78.4	75 - 125
Iron	ug/L	1.00	1800	2000(2000)	89.8	75 - 125
Boron	ug/L	1.00	3180	3030(2000)	107.	75 - 125

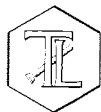
MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5160	5000	103.	90 - 110
Iron	ug/L	1.00	5220	5000	104.	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	4870	5000	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 12 of 31

Project Number: 424973.01.DM

Printed 5/2/2012

Metals by EPA 200.7, Total

Batch 042512A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800831-001 Zinc	ug/L	04/25/2012 16:09	1.00	3.89	10.0	ND
800831-002 Zinc	ug/L	04/25/2012 16:27	1.00	3.89	10.0	ND
800831-003 Zinc	ug/L	04/25/2012 16:33	1.00	3.89	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Zinc	ug/L	1.00	ND

Duplicate

Lab ID = 800831-001

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	91.6	100.	91.6	85 - 115

Matrix Spike

Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Zinc	ug/L	1.00	2080	2000(2000)	104.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5000	5000	99.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	5020	5000	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00	4760	5000	95.3	90 - 110

Interference Check Standard A

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

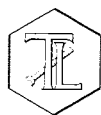
Interference Check Standard A

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	1940	2000	97.0	80 - 120

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 14 of 31

Project Number: 424973.01.DM

Printed 5/2/2012

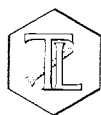
Metals by EPA 200.8, Total

Batch 041012A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800831-001 Antimony	ug/L	04/10/2012 17:39	5.00	0.120	10.0	ND
Arsenic	ug/L	04/10/2012 17:39	5.00	0.285	1.0	ND
Chromium	ug/L	04/10/2012 17:39	5.00	0.110	1.0	ND
Lead	ug/L	04/10/2012 17:39	5.00	0.110	10.0	ND
Manganese	ug/L	04/10/2012 17:39	5.00	0.285	1.0	3.1
800831-002 Antimony	ug/L	04/10/2012 17:46	5.00	0.120	10.0	ND
Arsenic	ug/L	04/10/2012 17:46	5.00	0.285	1.0	3.4
Chromium	ug/L	04/10/2012 17:46	5.00	0.110	1.0	804.
Lead	ug/L	04/10/2012 17:46	5.00	0.110	10.0	ND
Manganese	ug/L	04/10/2012 17:46	5.00	0.285	1.0	6.0
800831-003 Antimony	ug/L	04/10/2012 18:07	5.00	0.120	10.0	ND
Arsenic	ug/L	04/10/2012 18:07	5.00	0.285	1.0	ND
Chromium	ug/L	04/10/2012 18:07	5.00	0.110	1.0	3.5
Cobalt	ug/L	04/10/2012 18:07	5.00	0.485	5.0	ND
Lead	ug/L	04/10/2012 18:07	5.00	0.110	10.0	ND
Manganese	ug/L	04/10/2012 18:07	5.00	0.285	1.0	24.8
Mercury	ug/L	04/10/2012 18:07	5.00	0.0750	1.0	ND
Selenium	ug/L	04/10/2012 18:07	5.00	0.340	10.0	19.4
Thallium	ug/L	04/10/2012 18:07	5.00	0.125	1.0	ND
Vanadium	ug/L	04/10/2012 18:07	5.00	0.370	5.0	ND

Method Blank

Parameter	Unit	DF	Result
Arsenic	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
Lead	ug/L	1.00	ND
Thallium	ug/L	1.00	ND
Vanadium	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 15 of 31****Project Number: 424973.01.DM****Printed 5/2/2012****Low Level Calibration Verification**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.220	0.200	110.	70 - 130
Cobalt	ug/L	1.00	0.905	1.00	90.5	70 - 130
Chromium	ug/L	1.00	0.176	0.200	88.0	70 - 130
Mercury	ug/L	1.00	0.229	0.200	115.	70 - 130
Selenium	ug/L	1.00	0.986	1.00	98.6	70 - 130
Antimony	ug/L	1.00	0.979	1.00	97.9	70 - 130
Lead	ug/L	1.00	0.958	1.00	95.8	70 - 130
Thallium	ug/L	1.00	0.218	0.200	109.	70 - 130
Vanadium	ug/L	1.00	0.940	1.00	94.0	70 - 130
Manganese	ug/L	1.00	0.222	0.200	111	70 - 130

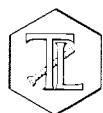
Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	92.0	100.	92.0	85 - 115
Cobalt	ug/L	5.00	91.3	100.	91.3	85 - 115
Chromium	ug/L	5.00	90.7	100.	90.7	85 - 115
Mercury	ug/L	5.00	19.6	20.0	97.8	85 - 115
Selenium	ug/L	5.00	94.9	100.	94.9	85 - 115
Antimony	ug/L	5.00	92.5	100.	92.5	85 - 115
Lead	ug/L	5.00	93.1	100.	93.1	85 - 115
Thallium	ug/L	5.00	97.7	100.	97.7	85 - 115
Vanadium	ug/L	5.00	92.0	100.	92.0	85 - 115
Manganese	ug/L	5.00	91.5	100.	91.5	85 - 115

Matrix Spike

Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	99.1	100.(100.)	99.1	75 - 125
Cobalt	ug/L	5.00	96.9	100.(100.)	96.9	75 - 125
Chromium	ug/L	5.00	109.	104.(100.)	105.	75 - 125
Mercury	ug/L	5.00	19.3	20.0(20.0)	96.3	75 - 125
Selenium	ug/L	5.00	94.9	119.(100.)	75.5	75 - 125
Antimony	ug/L	5.00	102	100.(100.)	102	75 - 125
Lead	ug/L	5.00	88.0	100.(100.)	88.0	75 - 125
Thallium	ug/L	5.00	85.6	100.(100.)	85.6	75 - 125
Vanadium	ug/L	5.00	115.	100.(100.)	115.	75 - 125
Manganese	ug/L	5.00	127.	125.(100.)	102	75 - 125



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 16 of 31

Project Number: 424973.01.DM

Printed 5/2/2012

Matrix Spike Duplicate

Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	101.	100.(100.)	101.	75 - 125
Cobalt	ug/L	5.00	95.6	100.(100.)	95.6	75 - 125
Chromium	ug/L	5.00	110.	104.(100.)	106.	75 - 125
Mercury	ug/L	5.00	18.9	20.0(20.0)	94.5	75 - 125
Selenium	ug/L	5.00	105.	119.(100.)	85.3	75 - 125
Antimony	ug/L	5.00	99.9	100.(100.)	99.9	75 - 125
Lead	ug/L	5.00	86.6	100.(100.)	86.6	75 - 125
Thallium	ug/L	5.00	85.0	100.(100.)	85.0	75 - 125
Vanadium	ug/L	5.00	117.	100.(100.)	117.	75 - 125
Manganese	ug/L	5.00	125.	125.(100.)	100.	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.4	10.0	104.	90 - 110
Cobalt	ug/L	1.00	10.4	10.0	104.	90 - 110
Chromium	ug/L	1.00	10.5	10.0	105.	90 - 110
Mercury	ug/L	1.00	2.18	2.00	109.	90 - 110
Selenium	ug/L	1.00	11.0	10.0	110.	90 - 110
Antimony	ug/L	1.00	10.5	10.0	105.	90 - 110
Lead	ug/L	1.00	10.8	10.0	108.	90 - 110
Thallium	ug/L	1.00	10.7	10.0	107.	90 - 110
Vanadium	ug/L	1.00	10.4	10.0	104.	90 - 110
Manganese	ug/L	1.00	10.5	10.0	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.87	10.0	98.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.94	10.0	99.4	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	10.1	10.0	101.	90 - 110

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 23 of 31
Printed 5/2/2012

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Selenium	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		

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
Lead	ug/L	1.00	ND	0.00		
Thallium	ug/L	1.00	ND	0.00		

Interference Check Standard AB

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

Interference Check Standard AB

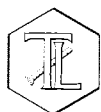
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Vanadium	ug/L	1.00	ND	0.00		
Manganese	ug/L	1.00	9.78	10.0	97.8	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.83	10.0	98.3	80 - 120

Serial Dilution

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	777.	804	3.40	0 - 10



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 24 of 31

Project Number: 424973.01.DM

Printed 5/2/2012

Metals by EPA 200.8, Total

Batch 041712B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800831-001 Barium	ug/L	04/17/2012 19:40	5.00	0.200	10.0	11.8
Copper	ug/L	04/17/2012 19:40	5.00	0.125	5.0	ND
Nickel	ug/L	04/17/2012 19:40	5.00	0.0750	10.0	ND
800831-002 Barium	ug/L	04/17/2012 19:47	5.00	0.200	10.0	26.0
Copper	ug/L	04/17/2012 19:47	5.00	0.125	5.0	ND
Nickel	ug/L	04/17/2012 19:47	5.00	0.0750	10.0	ND
800831-003 Barium	ug/L	04/17/2012 20:01	5.00	0.200	10.0	68.5
Cadmium	ug/L	04/17/2012 20:01	5.00	0.470	3.0	ND
Copper	ug/L	04/17/2012 20:01	5.00	0.125	5.0	ND
Nickel	ug/L	04/17/2012 20:01	5.00	0.0750	10.0	ND
Silver	ug/L	04/17/2012 20:01	5.00	0.175	5.0	ND

Method Blank

Parameter	Unit	DF	Result
Barium	ug/L	1.00	ND
Cadmium	ug/L	1.00	ND
Nickel	ug/L	1.00	ND
Copper	ug/L	1.00	ND
Silver	ug/L	1.00	ND

Duplicate

Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	5.00	67.3	68.5	1.72	0 - 20
Cadmium	ug/L	5.00	ND	0.00	0	0 - 20
Nickel	ug/L	5.00	ND	9.57	0	0 - 20
Copper	ug/L	5.00	ND	0.00	0	0 - 20
Silver	ug/L	5.00	ND	0.00	0	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	0.948	1.00	94.8	70 - 130
Cadmium	ug/L	1.00	0.211	0.200	106.	70 - 130
Nickel	ug/L	1.00	1.02	1.00	102	70 - 130
Copper	ug/L	1.00	0.842	1.00	84.2	70 - 130
Silver	ug/L	1.00	0.895	1.00	89.5	70 - 130

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

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 25 of 31****Project Number: 424973.01.DM****Printed 5/2/2012****Lab Control Sample**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	5.00	98.4	100.	98.4	85 - 115
Cadmium	ug/L	5.00	97.3	100.	97.3	85 - 115
Nickel	ug/L	5.00	98.4	100.	98.4	85 - 115
Copper	ug/L	5.00	96.8	100.	96.8	85 - 115
Silver	ug/L	5.00	101.	100.	101.	85 - 115

Matrix Spike

Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	5.00	168.	168.(100.)	99.4	75 - 125
Cadmium	ug/L	5.00	75.4	100.(100.)	75.4	75 - 125
Nickel	ug/L	5.00	97.7	110.(100.)	88.2	75 - 125
Copper	ug/L	5.00	91.7	100.(100.)	91.7	75 - 125
Silver	ug/L	5.00	76.2	100.(100.)	76.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	9.97	10.0	99.7	90 - 110
Cadmium	ug/L	1.00	9.99	10.0	99.9	90 - 110
Nickel	ug/L	1.00	10.0	10.0	100.	90 - 110
Copper	ug/L	1.00	10.0	10.0	100.	90 - 110
Silver	ug/L	1.00	10.4	10.0	104.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	10.0	10.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	9.83	10.0	98.3	90 - 110
Cadmium	ug/L	1.00	9.66	10.0	96.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cadmium	ug/L	1.00	9.20	10.0	92.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	9.37	10.0	93.7	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 27 of 31

Project Number: 424973.01.DM

Printed 5/2/2012

Interference Check Standard A

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

Interference Check Standard AB

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cadmium	ug/L	1.00	9.37	10.0	93.7	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	8.70	10.0	87.0	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	9.72	10.0	97.2	80 - 120
Copper	ug/L	1.00	9.33	10.0	93.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	8.46	10.0	84.6	80 - 120

Interference Check Standard AB

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

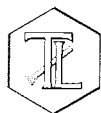
Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silver	ug/L	1.00	9.50	10.0	95.0	80 - 120

Serial Dilution

Lab ID = 800831-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	25.0	66.8	68.5	2.53	0 - 10



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 28 of 31

Project Number: 424973.01.DM

Printed 5/2/2012

Metals by EPA 200.8, Total

Batch 042012A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800831-003 Beryllium	ug/L	04/20/2012 14:13	5.00	0.140	1.0	ND

Method Blank

Parameter	Unit	DF	Result
Beryllium	ug/L	1.00	ND

Duplicate

Lab ID = 800831-003

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

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	0.212	0.200	106.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	5.00	95.8	100.	95.8	85 - 115

Matrix Spike

Lab ID = 800831-003

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

Matrix Spike Duplicate

Lab ID = 800831-003

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

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Beryllium	ug/L	1.00	9.24	10.0	92.4	90 - 110

MRCVS - Primary

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

Interference Check Standard A

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

Interference Check Standard A

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

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 29 of 31****Project Number: 424973.01.DM****Printed 5/2/2012****Interference Check Standard AB**

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

Interference Check Standard AB

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

Total Dissolved Solids by SM 2540 C

Batch 04TDS12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800831-001 Total Dissolved Solids	mg/L	04/04/2012	1.00	0.400	250.	4430
800831-002 Total Dissolved Solids	mg/L	04/04/2012	1.00	0.400	250.	4440
800831-003 Total Dissolved Solids	mg/L	04/04/2012	1.00	0.400	1250	31200

Method Blank

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

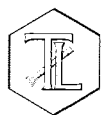
Duplicate

Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4520	4430	2.01	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	455	500.	91.0	90 - 110


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
Project Number: 424973.01.DM
Page 30 of 31
Printed 5/2/2012
Ammonia Nitrogen by SM4500-NH3D

Batch 04NH3-E12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800831-001 Ammonia as N	mg/L	04/05/2012	1.00	0.00120	0.500	ND
800831-002 Ammonia as N	mg/L	04/05/2012	1.00	0.00120	0.500	ND

Method Blank

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

Duplicate

Lab ID = 800831-001

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	10.4	10.0	104.	90 - 110

Matrix Spike

Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.28	6.00(6.00)	105.	75 - 125

Matrix Spike Duplicate

Lab ID = 800831-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.50	6.00(6.00)	108.	75 - 125

MRCCS - Secondary

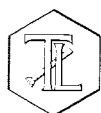
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.12	6.00	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.97	6.00	99.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.02	6.00	100.	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 31 of 31

Project Number: 424973.01.DM

Printed 5/2/2012

Turbidity by SM 2130 B

Batch 04TUC12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800831-001 Turbidity	NTU	04/04/2012	1.00	0.0140	0.100	0.108
800831-002 Turbidity	NTU	04/04/2012	1.00	0.0140	0.100	0.134

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 800831-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.136	0.134	1.48	0 - 20

Lab Control Sample

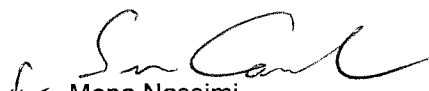
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.10	8.00	101.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.16	8.00	102	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


Mona Nassimi
Manager, Analytical Services



Calculations

Date Calculated: 4/4/12

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)

WOC
Analyst Printed Name

Analyst Signature

Reviewer Printed Name


Reviewer Signature

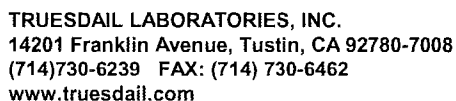
TDS/EC CHECK

Date Calculated: 4/4/12

[illegible]

2

4



[IM3Plant-WDR-355]

800831

DATE 04/03/12 PAGE 1 OF 1

COMPANY		CH2M HILL /E2																		COMMENTS	
PROJECT NAME		PG&E Topock IM3																			
PHONE		530-229-3303		FAX	530-339-3303																
ADDRESS		155 Grand Ave Ste 1000 Oakland, CA 94612																			
P.O. NUMBER		408401.01.DM																			
SAMPLERS (SIGNATURE)				<i>C. Knight</i>																	
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr(VI) (218.6) Lab Filtered	Title 22 Metals List (200.7, 200.8, 245.1)	EC (120.1)	TDS (2540 c)	Turb (2130)	Total Metals (200.7) See List Below	Ammonia (4500-NH3)	Anions (300.0) F	Anions (300.0) F, NO3, SO4	TOC (5310 C)	Total Metals (200.7) Mn	NO2 (4500-NO2B)	NUMBER OF CONTAINERS					
SC-700B-WDR-355	04/03/12	14:29		X		X	X	X	X	X		X			X		4	} met. <i>pH = 2</i> <i>pH = 4</i> <i>pH = 2</i>			
SC-100B-WDR-355	04/03/12	14:47		X		X	X	X	X		X			X		4					
SC-701-WDR-355	04/03/12	14:44		X	X	X	X			X			X			4					
ALERT !! Level III QC				For Sample Conditions See Form Attached																	
																		12	TOTAL NUMBER OF CONTAINERS		

CHAIN OF CUSTODY SIGNATURE RECORD

CHAIN OF CUSTODY SIGNATURE RECORD							
Signature (Relinquished)	<i>C. Knight</i>	Printed Name	<i>C. Knight</i>	Company/ Agency	<i>CH2M HILL</i>	Date/ Time	<i>4-3-12 15:45</i>
Signature (Received)	<i>pat</i>	Printed Name	<i>Hypolite</i>	Company/ Agency	<i>TLI</i>	Date/ Time	<i>4-3-12 15:45</i>
Signature (Relinquished)	<i>pat</i>	Printed Name	<i>Hypolite</i>	Company/ Agency	<i>TLI</i>	Date/ Time	<i>4-3-12 15:45</i>
Signature (Received)	<i>dinda</i>	Printed Name	<i>Shabunina</i>	Company/ Agency	<i>TLI</i>	Date/ Time	<i>4/3/12 21:30</i>
Signature (Relinquished)		Printed Name		Company/ Agency		Date/ Time	
Signature (Received)		Printed Name		Company/ Agency		Date/ Time	

SAMPLE CONDITIONS

RECEIVED COOL ☒ WARM ☐ *54.0* °F

CUSTODY SEALED YES ☐ NO ☒

SPECIAL REQUIREMENTS:

The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn

103

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Gen 4/2/12

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
800646	>2	<2	3/26/12	KE	YES	3010A
800648	↓	↓	↓	↓	↓	↓
800679	↓	↓	↓	↓	↓	↓
800680	<1	<2	3-27-12	BE	NO	NO
800691	<1	<2	↓	↓	↓	↓
800692	↓	↓	↓	↓	↓	YES 14:00
800700	<1	>2	↓	↓	↓	↓
800701	↓	↓	↓	↓	↓	↓
800707(11-5)	<1	1-4 <2 -5 >2	3-28-12	BE	NO	5 → YES 9:45 NO
800709	↓	<2	↓	↓	↓	5 → YES 9:45 AM
800708(11-5)	↓	-5 >2	↓	↓	↓	5 → YES 9:45 "
800710(11-5)	↓	-5 >2	↓	↓	↓	-8 → YES 9:45 "
800711(11-8)	↓	-8 >2	↓	↓	↓	798 → YES 9:45 "
800712(11-8)	↓	798 >2	↓	↓	↓	798 → YES 9:45 "
800713(11-8)	↓	798 >2	↓	↓	↓	798 → YES 9:45 "
800714(11-8)	↓	798 >2	↓	↓	↓	YES 9:45 AM
800715(11-10)	↓	>2	↓	↓	↓	798 → YES 9:45 "
800722(11-8)	↓	798 >2	↓	↓	↓	NO
800720	↓	<2	BE 3-28-12	↓	↓	↓
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(11-12)	<1	>2	↓	↓	NO	YES 7:15
800751	<1	<2	3-27-12	↓	NO	NO
800756	<1	<2	↓	↓	YES	3010A
800770(11-2)	<1	<2	3-30-12	BE	YES	3010A
800778(11-2)	<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	↓
800789	<1	<2	↓	↓	↓	YES 12:45 PM
800797	<1	>2	↓	↓	↓	YES 15: PM
800804	<1	>2	4-4-12	BE	YES	3010A YES 7:45 AM
800830(11-2)	<1	>2	↓	↓	↓	↓
800831(11-3)	<1	-2 >2	↓	↓	YES	3010A
800837	>1	<2	↓	↓	↓	↓
800808	↓	↓	↓	↓	↓	↓
800811	↓	↓	↓	↓	↓	↓
800809	<1	↓	↓	↓	NO	NO
800810	↓	↓	↓	↓	↓	↓
800812	↓	↓	↓	↓	↓	↓
800816	↓	↓	↓	↓	↓	↓
800826-4	↓	↓	↓	↓	↓	↓
800827	↓	↓	↓	↓	↓	YES 10:00 AM
800823	↓	>2	↓	↓	↓	↓
800824(11-3)	↓	↓	↓	↓	YES	3010A
800831(11-3)	<1	<2	4-4-12	↓	↓	↓

BE
4-4-12



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2

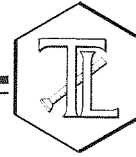
Lab # SW831

Date Delivered: 04/03/12 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)? 3, 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
12. Were samples pH checked? pH = See 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. Staburue

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 23, 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-356 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 800967

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-356 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 April 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.

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


to - Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

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

Laboratory No.: 800967

Date: April 23, 2012

Collected: April 10, 2012

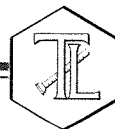
Received: April 10, 2012

ANALYST LIST

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

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

Attention: Shawn Duffy

Laboratory No.: 800967
Date Received: April 10, 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
800967-001	SC-700B-WDR-356	E120.1	NONE	4/10/2012	12:50	EC	7350	umhos/cm	2.00
800967-001	SC-700B-WDR-356	E200.8	NONE	4/10/2012	12:50	Chromium	ND	ug/L	1.0
800967-001	SC-700B-WDR-356	E200.8	NONE	4/10/2012	12:50	Manganese	2.4	ug/L	1.0
800967-001	SC-700B-WDR-356	E218.6	LABFLT	4/10/2012	12:50	Chromium, hexavalent	ND	ug/L	0.20
800967-001	SC-700B-WDR-356	SM2130B	NONE	4/10/2012	12:50	Turbidity	ND	NTU	0.100
800967-001	SC-700B-WDR-356	SM2540C	NONE	4/10/2012	12:50	Total Dissolved Solids	4290	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

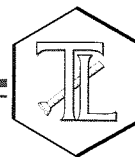
Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01ppm will have two (2) significant figures.
Result above or equal to 0.01ppm will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

005

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

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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. 800967

Page 1 of 9

Printed 4/23/2012

Samples Received on 4/10/2012 10:00:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-356	800967-001	04/10/2012 12:50	Water

Specific Conductivity - EPA 120.1

Batch 04EC12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800967-001 Specific Conductivity	umhos/cm	04/13/2012	1.00	0.0950	2.00	7350

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 800967-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7340	7350	0.136	0 - 10

Lab Control Sample

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

Lab Control Sample Duplicate

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	678	706	96.0	90 - 110

MRCVS - Primary

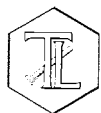
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	970	998	97.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	957	998	95.9	90 - 110

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008



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 9

Project Number: 424973.01.DM

Printed 4/23/2012

Chrome VI by EPA 218.6

Batch 04CrH12K

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800967-001 Chromium, Hexavalent	ug/L	04/12/2012 18:41	1.00	0.0260	0.20	ND

Method Blank

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

Duplicate

Lab ID = 800936-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.05	8.08	0.382	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.192	0.200	95.8	70 - 130

Lab Control Sample

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

Matrix Spike

Lab ID = 800934-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.40	6.46(5.00)	98.9	90 - 110

Matrix Spike

Lab ID = 800934-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.01	8.28(5.00)	94.7	90 - 110

Matrix Spike

Lab ID = 800934-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.09	8.28(5.00)	96.2	90 - 110

Matrix Spike

Lab ID = 800934-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.65	9.80(5.00)	97.1	90 - 110

Matrix Spike

Lab ID = 800934-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	18.5	18.9(10.0)	96.3	90 - 110

Matrix Spike

Lab ID = 800934-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	18.4	18.4(10.0)	99.2	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

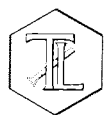
Page 4 of 9

Project Number: 424973.01.DM

Printed 4/23/2012

Matrix Spike						Lab ID = 800934-007
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	14.5	15.4(10.0)	91.8	90 - 110
Matrix Spike						Lab ID = 800934-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.64	9.85(5.00)	95.9	90 - 110
Matrix Spike						Lab ID = 800934-010
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.987	1.00(1.00)	98.7	90 - 110
Matrix Spike						Lab ID = 800936-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.81	1.84(1.00)	97.2	90 - 110
Matrix Spike						Lab ID = 800936-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.81	1.82(1.00)	98.8	90 - 110
Matrix Spike						Lab ID = 800936-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	18.0	18.1(10.0)	99.0	90 - 110
Matrix Spike						Lab ID = 800936-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.8	18.0(10.0)	97.8	90 - 110
Matrix Spike						Lab ID = 800936-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.35	6.52(5.00)	96.7	90 - 110
Matrix Spike						Lab ID = 800936-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.86	9.96(5.00)	98.0	90 - 110
Matrix Spike						Lab ID = 800967-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	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	5.02	5.00	100.	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

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 9

Project Number: 424973.01.DM

Printed 4/23/2012

Metals by EPA 200.8, Total

Batch 041812C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800967-001 Chromium	ug/L	04/19/2012 09:20	5.00	0.195	1.0	ND
Manganese	ug/L	04/19/2012 09:20	5.00	0.270	1.0	2.4

Method Blank

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

Duplicate

Lab ID = 800967-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	2.48	2.39	3.78	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.231	0.200	115.	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	101.	100.	101.	85 - 115
Manganese	ug/L	5.00	95.3	100.	95.3	85 - 115

Matrix Spike

Lab ID = 800967-001

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	95.1	102.(100.)	92.7	75 - 125

Matrix Spike Duplicate

Lab ID = 800967-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	1.00	105.	100.(100.)	105.	75 - 125
Manganese	ug/L	1.00	98.8	102.(100.)	96.4	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110
Manganese	ug/L	1.00	9.81	10.0	98.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.93	10.0	99.3	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 9

Project Number: 424973.01.DM

Printed 4/23/2012

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.99	10.0	99.9	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.62	10.0	96.2	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.56	10.0	95.6	80 - 120

Total Dissolved Solids by SM 2540 C

Batch 04TDS12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800967-001 Total Dissolved Solids	mg/L	04/12/2012	1.00	0.400	250.	4290

Method Blank

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

Duplicate

Lab ID = 800935-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	1280	1270	0.471	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	494	500.	98.8	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 9

Project Number: 424973.01.DM

Printed 4/23/2012

Turbidity by SM 2130 B

Batch 04TUC12I

Parameter	Unit	Analyzed	DF	MDL	RL	Result
800967-001 Turbidity	NTU	04/11/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 800967-001

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	8.53	8.00	107.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.30	8.00	104.	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi
Manager, Analytical Services



4. *Uc*

Batch: 03TDS12D

4/12/12

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)

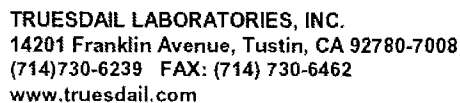
WCH
Analyst Printed Name

Analyst Signature



Reviewer Printed Name


Reviewer Signature



[IM3Plant-WDR-356]

COC Number

TURNAROUND TIME

10 Days

DATE 04/10/12

PAGE 1 OF 1

COMPANY		E2																COMMENTS									
PROJECT NAME		PG&E Topock																									
PHONE		(530) 229-3303						FAX		(530) 339-3303																	
ADDRESS		155 Grand Ave Ste 1000 Oakland, CA 94612																									
P.O. NUMBER		424973.01.DM						TEAM		1																	
SAMPLERS (SIGNATURE)																											
SAMPLE I.D.		DATE		TIME		DESCRIPTION		Cr6 (218.6) Lab Filtered		Total Metals (200.7) Cr, Mn		Specific Conductance (120.1)		TDS (SM2540C)		Turbidity (SM2130)										NUMBER OF CONTAINERS	
SC-700B-WDR-356		04/10/12		12:55		Water		x	x	x	x		x												3	pH = 6 (200.7)	
				12:50		CL.																		3	TOTAL NUMBER OF CONTAINERS		

ALERT !!
Level III QC

**For Sample Conditions
See Form Attached**

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED COOL <input checked="" type="checkbox"/> WARM <input type="checkbox"/> 4.5°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			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			

040

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
4/10/12	800934-1	9.5	NA	NA	NA	mf
		-2				
		-3				
		-4				
		-5				
		-6				
		-7				
		-8				
		-9				
		-10				
		-11				
		-12				
		-13				
4/10/12	800936-1	9.5	NA	NA	NA	mf
		-2				
		-3				
		-4				
		-5				
		-6				
		-7				
		-8				
4/11/12	800967	7.0	2.0mL	9.5	9:15am	mf
4/11/12	800966-1	9.5	NA	NA	NA	MS
		-2				
		-3				
		-4				
		-5				
		-6				
		-7				
		-8				
		-9				

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
800853(11-13)	<1	>2	4-5-12	BE	NO	XCS 7:30AM
800861(1-2)	<1	<2			XCS	3010A
800875-4	<1	<2			NO	yes
800860	>1	>2			YES	3010A XCS 14:30
800878	↓	<2			XCS	3010A yes 14:30
800880	<1	↓			NO	
800879	>1	↓			YES	3010A
800891 800907	>1	<2	4-6-12	BE	YES	3010A
800895(1-5)	<1	<2			↓	↓
800899	>1	<2			↓	↓
800921(1-2)	<1	<2			↓	↓
800913	>1	<2	4-9-12	BE	XCS	3010A
800914	>1	↓			↓	↓
800915(1-33)	<1	>2			NO	yes 7:45AM
800916(1-18)	↓	↓				↓
800917(1-17)	↓	↓				↓
800918(1-18)	↓	↓				↓
800925	<1	<2	4-10-12	BE	NO	NO
800929	↓	↓				↓
800930	↓	>2			BE 4-10-12 YES	3010A yes 7:30AM
800931(1-4)	-2>1	<2			-2>3 XCS	3010A
800934(1-13)	<1	↓			yes	3010A
800936(1-7)	↓	↓			↓	↓
800935(1-6)	↓	↓			↓	↓
800939	↓	↓			YES 3010A NO	
800964(1-10)	<1	<2	4-11-12	BE	XCS	3010A
800963-1	↓	↓			↓	↓
800965(1-8)	↓	↓			↓	↓
800966(1-9)	↓	↓			↓	↓
800967	↓	>2			↓	↓
800968(1-14)	-12>1	<2			↓	YES 8:30AM
800935(1-3)	<1	>2			NO	yes 14:00
800949	>1	<2			YES	3010A
800950	↓	↓			↓	↓
800970	↓	↓			↓	↓
800974-4	↓	↓			↓	↓
800972	<1	↓			NO	NO
800971	↓	↓			↓	↓
800982(1-3)	<1	>2	4-12-12	BE	YES 3	3010A BE 4-11-12
800986(1-3)	-2>1	<2			NO	yes 8:30
800998(1-28)	<1	1-12 72			-2 XCS	3010A -2
800999(1-24)	<1	<2			NO	1-12 yes 8:45
800997(1-28)	<1	<2			NO	NO
800989	<1	<2			NO	NO
800990	>1	<2			YES	3010A
800991	>1	>2			YES	3010A yes 10:1AM
800992	<1	>2			NO	XCS 10:30AM
800997	>1	<2			XCS	3010A
801008	>1	<2	4-13-12	BE	YES	3010A



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 800967

Date Delivered: 04/10/12 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)? 3.5°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. Scabaccione

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 30, 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-357A PROJECT, GROUNDWATER
MONITORING, TLI NO.: 801083

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-357a 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 April 16, 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.

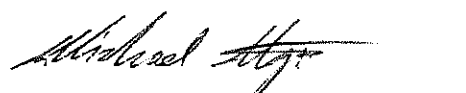
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

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.


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.: 801083

Date: April 30, 2012

Collected: April 16, 2012

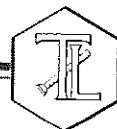
Received: April 16, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Kim Luck
SM 2130B	Turbidity	Gautam Savani
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	George Wahba / David Blackburn

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

Attention: Shawn Duffy

Laboratory No.: 801083

Date Received: April 16, 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
801083-001	SC-700B-WDR-357a	E120.1	NONE	4/16/2012	6:06	EC	7500	umhos/cm	2.00
801083-001	SC-700B-WDR-357a	E200.8	NONE	4/16/2012	6:06	Chromium	ND	ug/L	1.0
801083-001	SC-700B-WDR-357a	E200.8	NONE	4/16/2012	6:06	Manganese	2.2	ug/L	1.0
801083-001	SC-700B-WDR-357a	E218.6	LABFLT	4/16/2012	6:06	Chromium, hexavalent	ND	ug/L	1.0
801083-001	SC-700B-WDR-357a	SM2130B	NONE	4/16/2012	6:06	Turbidity	ND	NTU	0.100
801083-001	SC-700B-WDR-357a	SM2540C	NONE	4/16/2012	6:06	Total Dissolved Solids	4110	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. 801083

Page 1 of 8

Printed 4/30/2012

Samples Received on 4/16/2012 10:20:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-357a	801083-001	04/16/2012 06:06	Water

Specific Conductivity - EPA 120.1

Batch 04EC12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801083-001 Specific Conductivity	umhos/cm	04/18/2012	1.00	0.0950	2.00	7500

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 801083-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7500	7500	0.00	0 - 10

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	700	706	99.2	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	939	998	94.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	945	998	94.7	90 - 110

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008



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 8

Project Number: 424973.01.DM

Printed 4/30/2012

Chrome VI by EPA 218.6

Batch 04CrH12N

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801083-001 Chromium, Hexavalent	ug/L	04/17/2012 13:18	5.00	0.130	1.0	ND

Method Blank

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

Duplicate

Lab ID = 801057-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	33.7	33.6	0.234	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.187	0.200	93.3	70 - 130

Lab Control Sample

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

Matrix Spike

Lab ID = 800963-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.54	6.54(5.00)	100.0	90 - 110

Matrix Spike

Lab ID = 800963-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.979	1.00(1.00)	97.9	90 - 110

Matrix Spike

Lab ID = 801057-006

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

Matrix Spike

Lab ID = 801058-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.7	16.8(10.0)	98.9	90 - 110

Matrix Spike

Lab ID = 801058-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.00	1.02(1.00)	97.9	90 - 110

Matrix Spike

Lab ID = 801081-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.60	6.63(5.00)	99.3	90 - 110

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 4 of 8
Printed 4/30/2012

Matrix Spike						Lab ID = 801081-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.60	6.60(5.00)	99.9	90 - 110
Matrix Spike						Lab ID = 801081-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.88	1.88(1.00)	100.0	90 - 110
Matrix Spike						Lab ID = 801081-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.00(1.00)	101.	90 - 110
Matrix Spike						Lab ID = 801083-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.94	5.00(5.00)	98.7	90 - 110
Matrix Spike						Lab ID = 801083-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.924	1.04(1.00)	88.4	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.02	5.00	100.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 8

Project Number: 424973.01.DM

Printed 4/30/2012

Metals by EPA 200.8, Total

Batch 042512A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801083-001 Chromium	ug/L	04/25/2012 17:06	5.00	0.195	1.0	ND
Manganese	ug/L	04/25/2012 17:06	5.00	0.270	1.0	2.2

Method Blank

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

Duplicate

Lab ID = 801083-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	2.00	2.25	11.9	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.218	0.200	109.	70 - 130
Manganese	ug/L	1.00	0.212	0.200	106.	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	96.9	100.	96.9	85 - 115

Matrix Spike

Lab ID = 801083-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	113.	100.(100.)	113.	75 - 125
Manganese	ug/L	5.00	112.	102.(100.)	109.	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	9.63	10.0	96.3	90 - 110

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.69	10.0	96.9	90 - 110

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 8

Project Number: 424973.01.DM

Printed 4/30/2012

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.41	10.0	94.1	80 - 120

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

Total Dissolved Solids by SM 2540 C

Batch 05TDS12G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801083-001 Total Dissolved Solids	mg/L	04/18/2012	1.00	0.400	250.	4110

Method Blank

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

Duplicate

Lab ID = 801120-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	804	828	2.94	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	465	500.	93.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	504	500.	101.	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 8 of 8
Printed 4/30/2012

Turbidity by SM 2130 B

Batch 04TUC12N

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801083-001 Turbidity	NTU	04/17/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 801083-001

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	8.10	8.00	101.	90 - 110

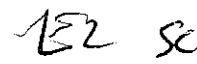
Respectfully submitted,

TRUESDAIL LABORATORIES, INC.



Mona Nassimi

Manager, Analytical Services



Calculations

Date Calculated: 4/18/12

Calculation as follows:

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: 04TDS12G

Date Calculated: 4/18/12

[illegible]

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

801083

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-357a]

Rec'd 04/16/12
801083
CUG Number

TURNAROUND TIME 10 Days
DATE 04/16/12 PAGE 1 OF 1

COMPANY	E2			<div>Cr6 (218.6) Lab Filtered</div> <div>Total Metals (200.7) Cr, Mn</div> <div>Specific Conductance (120.1)</div> <div>TDS (SM2540C)</div> <div>Turbidity (SM2130)</div> <div>NUMBER OF CONTAINERS</div>												COMMENTS		
PROJECT NAME	PG&E Topock																	
PHONE	(530) 229-3303		FAX														(530) 339-3303	
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612																	
P.O. NUMBER	424973.01.DM		TEAM														1	
SAMPLERS (SIGNATURE) <i>Chris Lente</i>																		
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6	Total Metals	Specific Conductance	TDS	Turbidity						NUMBER OF CONTAINERS	COMMENTS			
SC-700B-WDR-357a	04/16/12	06:06	Water	x	x	x	x	x						3	pH = 7 (200.7)			
														3	TOTAL NUMBER OF CONTAINERS			

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS		
Signature (Relinquished) <i>C. Knight</i>	Printed Name <i>C. Knight</i>	Company/Agency <i>CH2MHill</i>	Date/Time <i>4-16-12 1650</i>	RECEIVED	COOL <input type="checkbox"/>	WARM <input type="checkbox"/>	°F
Signature (Received) <i>AL Boerger</i>	Printed Name <i>AL Boerger</i>	Company/Agency <i>T.C.I.</i>	Date/Time <i>4/16/12 1655</i>	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
Signature (Relinquished) <i>AL Boerger</i>	Printed Name <i>AL Boerger</i>	Company/Agency <i>T.C.I.</i>	Date/Time <i>4/16/12 22:20</i>	SPECIAL REQUIREMENTS:			
Signature (Received) <i>Her</i>	Printed Name <i>Her</i>	Company/Agency <i>T.C.I.</i>	Date/Time <i>4-16-12 22:20</i>				
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]

MR
Gw 0429112

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
801013-4	>1	<2	4-13-12	BE	YES	3010A
801014	<1	↓	↓	↓	NO	NO
801023(1-8)	<1	↓	↓	↓	YES	3010A
801017	>1	↓	↓	↓	↓	↓
801018	<1	↓	↓	↓	NO	NO
801048(1+2)	<1	<2	4-16-12	BE	YES	3010A
801057(1-5)	↓	↓	↓	↓	↓	↓
801043(1,3)	>1	↓	↓	↓	↓	↓
801045(1-24)	<1	>2	↓	↓	NO	YES 8:00 AM
801046(1-50)	↓	↓	↓	↓	↓	8:00 AM
801048(1-80)	↓	↓	↓	↓	↓	8:45 AM
801047(1-93)	↓	1-23<2 24-03>2	↓	↓	↓	YES 24-93 8:15 AM
801050	>1	<2	↓	↓	YES	3010A
801044(11-34)	<1	>2	↓	↓	NO	YES 10:15 AM
801059	>1	>2	↓	↓	YES	3010A YES 11:15
801068	<1	<2	4-17-12	BE	NO	NO
801067	↓	↓	↓	↓	↓	↓
801075	↓	>2	↓	↓	↓	YES 9:30 AM
801081(1-5)	↓	<2	↓	↓	YES	3010A
801082-1	>1	<2	↓	↓	↓	↓
801084(1-11)	<1	↓	↓	↓	↓	↓
801083	↓	>2	↓	↓	↓	YES 9:30 AM
801077	<1	<2	4-19-12	BE	NO	NO
801078(1-2)	>1	<2	↓	↓	YES	3010A
801079(1-2)	↓	↓	↓	↓	↓	↓
801080(1-3)	<1	>2	↓	↓	NO	YES 8:00 AM
801110	↓	<2	↓	↓	↓	NO
801111	↓	↓	↓	↓	↓	↓
801112	↓	↓	↓	↓	↓	↓
801113	↓	↓	↓	↓	↓	↓
801114	↓	↓	↓	↓	↓	↓
801115	↓	↓	↓	↓	YES	3010A
801116	↓	↓	↓	↓	NO	↓
801118(1-7)	↓	↓	↓	↓	YES	3010A
801119(1-8)	↓	↓	↓	↓	↓	↓
801120(1-9)	↓	↓	↓	↓	↓	↓
801129	↓	>2	↓	↓	NO	YES 8:30 AM
801134(1-12)	↓	>2	BE 4-19-12	↓	↓	↓
801136(1-2-7)	↓	<2	↓	↓	YES	3010A
801137(1-3)	↓	↓	↓	↓	↓	↓
801138(1-8)	↓	↓	↓	↓	↓	↓
801144(1-7)	<1	>2	↓	↓	NO	YES 17:15
801145(1-7)	↓	↓	↓	↓	↓	↓
801146(1-10)	↓	<2	↓	↓	NO	NO
801147(1-10)	↓	>2	↓	↓	↓	YES 17:15
801148(1-10)	↓	↓	↓	↓	↓	↓
801149(1-5)	↓	↓	↓	↓	↓	↓
801142(1-2)	>1	<2	↓	↓	YES	3010A
801135	<1	>2	↓	↓	NO	YES 17:15



TRUESDAIL LABORATORIES, INC.



Sample Integrity & Analysis Discrepancy Form

Client: E2

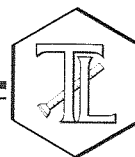
Lab # 801083

Date Delivered: 4/16/12 Time: 22:20 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 = _____ ☐ 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: Key

TRUESDAIL LABORATORIES, INC.

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

May 2, 2012

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

Dear Mr. Duffy:

SUBJECT: REVISED CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-357B PROJECT,
GROUNDWATER MONITORING, TLI NO.: 801188

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-357b 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 April 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

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Laboratory No.: 801188

Date: April 30, 2012

Collected: April 20, 2012

Received: April 20, 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	George Wahba / Maksim Gorbunov

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

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

Laboratory No.: 801188
Date Received: April 20, 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
801188-001	SC-700B-WDR-357b	E120.1	NONE	4/20/2012	13:00	EC	7870	umhos/cm	2.00
801188-001	SC-700B-WDR-357b	E200.8	NONE	4/20/2012	13:00	Chromium	4.0	ug/L	1.0
801188-001	SC-700B-WDR-357b	E200.8	NONE	4/20/2012	13:00	Manganese	22.2	ug/L	1.0
801188-001	SC-700B-WDR-357b	E218.6	LABFLT	4/20/2012	13:00	Chromium, hexavalent	2.6	ug/L	1.0
801188-001	SC-700B-WDR-357b	SM2130B	NONE	4/20/2012	13:00	Turbidity	0.100	NTU	0.100
801188-001	SC-700B-WDR-357b	SM2540C	NONE	4/20/2012	13:00	Total Dissolved Solids	4390	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.

005

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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. 801188

Page 1 of 8

Printed 4/30/2012

Samples Received on 4/20/2012 8:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-357b	801188-001	04/20/2012 13:00	Water

Specific Conductivity - EPA 120.1

Batch 04EC12F

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801188-001 Specific Conductivity	umhos/cm	04/23/2012	1.00	0.0950	2.00	7870

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 801188-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7870	7870	0.00	0 - 5

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	701	706	99.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	960	998	96.2	90 - 110

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008



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 4/30/2012

Chrome VI by EPA 218.6

Batch: 04CrH12S

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801188-001 Chromium, Hexavalent	ug/L	04/24/2012 11:33	5.00	0.130	1.0	2.6

Method Blank

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

Duplicate

Lab ID = 801023-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	3.16	3.14	0.679	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	4.75	5.00	95.1	90 - 110

Matrix Spike

Lab ID = 801023-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.78	1.77(1.00)	101.	90 - 110

Matrix Spike

Lab ID = 801023-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.19	8.14(5.00)	101.	90 - 110

Matrix Spike

Lab ID = 801023-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.3	16.3(10.0)	99.3	90 - 110

Matrix Spike

Lab ID = 801023-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.10	6.04(5.00)	101.	90 - 110

Matrix Spike

Lab ID = 801023-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.84	1.84(1.00)	99.4	90 - 110

Matrix Spike

Lab ID = 801023-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.88	1.90(1.00)	98.3	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 8

Project Number: 424973.01.DM

Printed 4/30/2012

Matrix Spike						Lab ID = 801023-007
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.06	6.01(5.00)	101.	90 - 110
Matrix Spike						Lab ID = 801023-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.06	6.03(5.00)	101.	90 - 110
Matrix Spike						Lab ID = 801023-009
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.00	1.00(1.00)	100.	90 - 110
Matrix Spike						Lab ID = 801136-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.59	1.57(1.00)	102.	90 - 110
Matrix Spike						Lab ID = 801136-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.10	1.03(1.00)	106.	90 - 110
Matrix Spike						Lab ID = 801136-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.71	1.68(1.00)	103.	90 - 110
Matrix Spike						Lab ID = 801136-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.17	7.10(5.00)	101.	90 - 110
Matrix Spike						Lab ID = 801136-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.25	7.28(5.00)	99.4	90 - 110
Matrix Spike						Lab ID = 801136-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.92	7.87(5.00)	101.	90 - 110
Matrix Spike						Lab ID = 801136-007
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	15.1	15.1(10.0)	99.7	90 - 110
Matrix Spike						Lab ID = 801188-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.74	7.70(5.00)	101.	90 - 110
Matrix Spike						Lab ID = 801188-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	7.76	7.66(5.00)	102.	90 - 110


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
Page 5 of 8
Project Number: 424973.01.DM
Printed 4/30/2012
Metals by EPA 200.8, Total

Batch 042512A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801188-001 Chromium	ug/L	04/25/2012 18:32	5.00	0.195	1.0	4.0
Manganese	ug/L	04/25/2012 18:32	5.00	0.270	1.0	22.2

Method Blank

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

Duplicate

Lab ID = 801188-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	3.57	3.96	10.4	0 - 20
Manganese	ug/L	5.00	19.7	22.2	11.8	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.218	0.200	109.	70 - 130
Manganese	ug/L	1.00	0.212	0.200	106.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.4	100.	98.4	85 - 115
Manganese	ug/L	5.00	91.6	100.	91.6	85 - 115

Matrix Spike

Lab ID = 801188-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	103.	104.(100.)	98.8	75 - 125
Manganese	ug/L	5.00	115.	122.(100.)	93.0	75 - 125

Matrix Spike Duplicate

Lab ID = 801188-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	105	104.(100.)	101.	75 - 125
Manganese	ug/L	5.00	113	122.(100.)	90.8	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	9.63	10.0	96.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.69	10.0	96.9	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 4/30/2012

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
Manganese	ug/L	1.00	9.41	10.0	94.1	80 - 120

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

Total Dissolved Solids by SM 2540 C

Batch 04TDS12J

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801188-001 Total Dissolved Solids	mg/L	04/25/2012	1.00	0.400	250.	4390

Method Blank

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

Duplicate

Lab ID = 801188-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4560	4390	3.80	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	486	500.	97.2	90 - 110

Client: **E2 Consulting Engineers, Inc.**Project Name: **PG&E Topock Project**

Page 8 of 8

Project Number: **424973.01.DM**

Printed 4/30/2012

Turbidity by SM 2130 B

Batch 04TUC12P

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801188-001 Turbidity	NTU	04/20/2012	1.00	0.0140	0.100	0.100

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 801188-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.100	0.100	0.00	0 - 20

Lab Control Sample


Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.32	8.00	91.5	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.35	8.00	91.9	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


for Mona Nassimi
Manager, Analytical Services


Calculations

Date Calculated: 4/26/12

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

C = mL of sample filtered.

Analyst Printed Name


Analyst Signature

Hope
Reviewer Printed Name

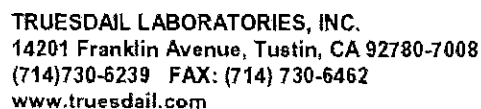

Reviewer Signature

TDS/EC CHECK

Date Calculated: 4/26/12

[illegible]

by



[IM3Plant-WDR-357b]

COC Number

TURNAROUND TIME 10 Days

DATE 04/20/12 PAGE 1 OF 1

ALERT !!
Level III QC

**For Sample Conditions
See Form Attached**

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS	
Signature (Relinquished) <i>[Signature]</i>	Printed Name <i>L. AOE</i>	Company/ Agency <i>HEALTH</i>	Date/ Time <i>4/20/12</i> <i>1530</i>	RECEIVED	COOL <input checked="" type="checkbox"/> WARM <input type="checkbox"/> <i>4.6 °C</i>
Signature (Received) <i>B. Dayag</i>	Printed Name <i>B. DAYAG</i>	Company/ Agency <i>TLI</i>	Date/ Time <i>4-20-12</i> <i>1530</i>	CUSTODY SEALED	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Signature (Relinquished) <i>B. Dayag</i>	Printed Name <i>B. DAYAG</i>	Company/ Agency <i>TLI</i>	Date/ Time <i>4-20-12</i> <i>2030</i>	SPECIAL REQUIREMENTS:	
Signature (Received) <i>[Signature]</i>	Printed Name <i>Shabunin</i>	Company/ Agency <i>TLI</i>	Date/ Time <i>4/20/12</i> <i>2030</i>		
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
4/20/12	801162-1	9.5	N/A	N/A	N/A	Gr
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
4/20/12	801163-1	9.5	N/A	N/A	N/A	Gr
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
4/20/12	801164-1	9.5	N/A	N/A	N/A	Gr
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
4/20/12	801186-1	9.5	N/A	N/A	N/A	Gr
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
4/20/12	801187-1	9.5	N/A	N/A	N/A	Gr
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
4/21/12	801188	7	2 mL	9.5	8:15 Am	G-B

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
801141	<1	<2	4-19-12	BE	3TLC	NO
801164 (1-6)	↓	↓	↓	↓	YES	3010A
801163 (1-5)	↓	↓	↓	↓	↓	↓
801164 (1-7)	↓	↓	↓	↓	↓	↓
801157	<1	<2	4-23-12	BE	NO	NO
801188	↓	>2	↓	↓	YES	3010A
801186 (1-6)	↓	<2	↓	↓	↓	YES 9 15AM
801187 (1-7)	↓	↓	↓	↓	↓	↓
801191	<1	<2	4-24-12	BE	NO	NO
801192	>1	↓	↓	↓	YES	3010A
801199	↓	↓	↓	↓	YES	↓
801216	<1	>2	4-25-12	BZ	YES	3010A
801218 (1-5)	↓	<2	↓	↓	↓	YES 11:00
801217 (1-7)	↓	↓	↓	↓	↓	↓
801219 (1-12)	↓	↓	↓	↓	↓	↓
801220 (1-6)	↓	↓	↓	↓	↓	↓
801221 (1-8)	↓	↓	↓	↓	↓	↓
801222	>1	<2	↓	↓	↓	↓
801225	<1	↓	↓	↓	NO	NO
801226	↓	↓	↓	↓	↓	↓
801224	>1	↓	↓	↓	↓	↓
801238	<1	>2	4-26-12	BE	YES	3010A
801239 (1-5)	↓	↓	↓	↓	NO	YES 7:45 AM
801238 (1-2)	↓	↓	↓	↓	↓	↓
801240 (1-2)	↓	↓	↓	↓	↓	↓
801241 (1-9)	↓	↓	↓	↓	↓	↓
801249	<1	<2	↓	↓	YES	3010A
801250 (1-8)	↓	↓	↓	↓	↓	↓
801251 (1-6)	↓	↓	↓	↓	↓	↓
801251 (1-8)	↓	↓	↓	↓	↓	↓
801245 (1-3)	<1	>2	4-26-12	↓	↓	↓
801264 (1-7)	<1	<2	4-27-12	BE	NO	YES 11:15
801265 (1-6)	↓	↓	↓	↓	YES	3010A
801266 (1-11)	↓	↓	↓	↓	↓	↓
801267 (1-8)	↓	↓	↓	↓	↓	↓
801276	>1	<2	4-30-12	BE	YES	3010A
801275	<1	↓	↓	↓	NO	NO
801277	↓	↓	↓	↓	↓	↓
801278	↓	↓	↓	↓	↓	↓
801301	>1	<2	↓	↓	↓	↓
801298 (1-6)	<1	↓	↓	↓	YES	3010A
801299 (1-8)	↓	↓	↓	↓	↓	↓
8012300 (1-2-5)	↓	↓	↓	↓	↓	↓
801303 (1-10)	↓	↓	↓	↓	NO	NO
801304 (1-10)	↓	↓	↓	↓	↓	↓
801307	<1	<2	↓	↓	↓	↓
801308	>1	↓	↓	↓	YES	3010A
801309	↓	↓	↓	↓	↓	↓
801252 -11	<1	↓	↓	↓	↓	↓



TRUESDAIL LABORATORIES, INC.

ALERT !!
Level III QC

Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 801/188

Date Delivered 4/20/12 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)? 4.6°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. Shabunier

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

May 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-358 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 801216

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-358 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 April 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.

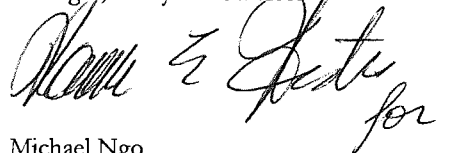
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

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.

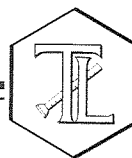
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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
www.truesdail.com

Laboratory No.: 801216

Date: May 16, 2012

Collected: April 24, 2012

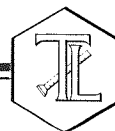
Received: April 24, 2012

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	George Wahba / Maksim Gorbunov

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

Attention: Shawn Duffy

Laboratory No.: 801216
Date Received: April 24, 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
801216-001	SC-700B-WDR-358	E120.1	NONE	4/24/2012	14:40	EC	7370	umhos/cm	2.00
801216-001	SC-700B-WDR-358	E200.8	NONE	4/24/2012	14:40	Chromium	ND	ug/L	1.0
801216-001	SC-700B-WDR-358	E200.8	NONE	4/24/2012	14:40	Manganese	7.9	ug/L	1.0
801216-001	SC-700B-WDR-358	E218.6	LABFLT	4/24/2012	14:40	Chromium, hexavalent	ND	ug/L	1.0
801216-001	SC-700B-WDR-358	SM2130B	NONE	4/24/2012	14:40	Turbidity	ND	NTU	0.100
801216-001	SC-700B-WDR-358	SM2540C	NONE	4/24/2012	14:40	Total Dissolved Solids	4200	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

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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. 801216

Page 1 of 9

Printed 5/16/2012

Samples Received on 4/24/2012 8:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-358	801216-001	04/24/2012 14:40	Water

Specific Conductivity - EPA 120.1

Batch 04EC12G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801216-001 Specific Conductivity	umhos/cm	04/26/2012	1.00	0.0950	2.00	7370

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 801216-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7370	7370	0.00	0 - 10

Lab Control Sample

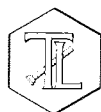
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	680	706	96.3	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	675	706	95.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	968	998	97.0	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 9

Project Number: 424973.01.DM

Printed 5/16/2012

Chrome VI by EPA 218.6

Batch 04CrH12X

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801216-001 Chromium, Hexavalent	ug/L	04/27/2012 16:11	5.00	0.130	1.0	ND

Method Blank

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

Duplicate

Lab ID = 801218-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.06	1.00	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.185	0.200	92.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.76	5.00	95.3	90 - 110

Matrix Spike

Lab ID = 801216-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	5.12	5.09(5.00)	100.	90 - 110

Matrix Spike

Lab ID = 801216-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.09	1.09(1.00)	100.	90 - 110

Matrix Spike

Lab ID = 801217-009

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

Matrix Spike

Lab ID = 801218-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.04	6.06(5.00)	99.7	90 - 110

Matrix Spike

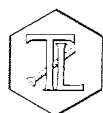
Lab ID = 801218-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.15	6.15(5.00)	100.	90 - 110

Matrix Spike

Lab ID = 801218-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	6.98	6.92(5.00)	101.	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 9

Project Number: 424973.01.DM

Printed 5/16/2012

Metals by EPA 200.8, Total

Batch 051412B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801216-001 Chromium	ug/L	05/15/2012 11:39	5.00	0.195	1.0	ND
Manganese	ug/L	05/15/2012 11:39	5.00	0.270	1.0	7.9

Method Blank

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

Duplicate

Lab ID = 801216-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	7.78	7.95	2.11	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	0.189	0.200	94.4	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	88.1	100.	88.1	85 - 115
Manganese	ug/L	5.00	88.1	100.	88.1	85 - 115

Matrix Spike

Lab ID = 801216-001

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	112.	108.(100.)	104.	75 - 125

Matrix Spike Duplicate

Lab ID = 801216-001

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	110.	108.(100.)	102.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.86	10.0	98.6	90 - 110
Manganese	ug/L	1.00	10.0	10.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.1	10.0	101	90 - 110

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

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

Project Name: PG&E Topock Project

Page 8 of 9

Project Number: 424973.01.DM

Printed 5/16/2012

Total Dissolved Solids by SM 2540 C

Batch 04TDS12J

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801216-001 Total Dissolved Solids	mg/L	04/25/2012	1.00	0.400	250.	4200

Method Blank

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

Duplicate

Lab ID = 801188-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4560	4390	3.80	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	486	500.	97.2	90 - 110

Turbidity by SM 2130 B

Batch 04TUC12R

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801216-001 Turbidity	NTU	04/25/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 801216-001

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.10	8.00	101.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.23	8.00	103.	90 - 110



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 5/16/2012

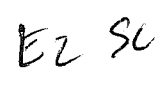
Respectfully submitted,

TRUESDAIL LABORATORIES, INC.



Mona Nassimi

Manager, Analytical Services



Calculations

Date Calculated: 4/26/12

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 Signature

None
Reviewer Printed Name



Reviewer Signature

TDS/EC CHECK

Date Calculated: 4/26/12

[illegible]

[Handwritten 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-358]

801216


COC Number

TURNAROUND TIME

10 Days

DATE 04/24/12

PAGE 1 OF 4

COMPANY		E2		<div style="text-align: right;"> <p>Rec'd 4/24/12</p> <p>S 801216</p> </div>										COMMENTS							
PROJECT NAME		PG&E Topock																			
PHONE		(530) 229-3303														FAX		(530) 339-3303			
ADDRESS		155 Grand Ave Ste 1000														Oakland, CA 94612					
P.O. NUMBER		424973.01.DM		TEAM		1		<div style="transform: rotate(-45deg); display: inline-block; text-align: center;"> <p>Cr6 (218.6) Lab Filtered</p> <p>Total Metals (200.7) Cr, Mn</p> <p>Specific Conductance (120.1)</p> <p>TDS (SM2540C)</p> <p>Turbidity (SM2130)</p> </div>										NUMBER OF CONTAINERS			
SAMPLERS (SIGNATURE)																					
SAMPLE I.D.		DATE		TIME		DESCRIPTION															
SC-700B-WDR-358		04/24/12		14:40		Water		x		x		x		x		x		3		PH = 6 (200.7)	
																3		TOTAL NUMBER OF CONTAINERS			

ALERT !!
Level III QC

**For Sample Conditions
See Form Attached**

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS						
Signature (Relinquished)	<i>P. Knight</i>	Printed Name	<i>P-Knight</i>	Company/ Agency	<i>CH2M Hill</i>	Date/ Time	<i>4/24/12 1515</i>	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/>	<i>4.4 °C</i>
Signature (Received)	<i>B. Dayag</i>	Printed Name	<i>B. DAYAG</i>	Company/ Agency	<i>TLI</i>	Date/ Time	<i>4-24-12 1515</i>	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	
Signature (Relinquished)	<i>B. Dayag</i>	Printed Name	<i>B. DAYAG</i>	Company/ Agency	<i>TLI</i>	Date/ Time	<i>4-24-12 2030</i>	SPECIAL REQUIREMENTS:			
Signature (Received)	<i>Shola</i>	Printed Name	<i>Shabazz</i>	Company/ Agency	<i>TLI</i>	Date/ Time	<i>4/24/12 2030</i>				
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
4/25/12	801216	7	2 mL	9.5	11 Am	GW
4/25/12	801217-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
4/25/12	801218-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
4/25/12	801219-1	9.5	N/A	N/A	N/A	GW
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
801141	<1	<2	4-19-12	BE	STLC	NO
801162 (13-6)	↓	↓	↓	↓	YES	3010A
801163 (1-5)	↓	↓	↓	↓	↓	↓
801164 (1-7)	↓	↓	↓	↓	↓	↓
801157	<1	<2	4-23-12	BE	NO	NO YES 4-23-12
801188	↓	>2	↓	↓	YES	3010A YES 9 15AM
801186 (1-6)	↓	<2	↓	↓	↓	↓
801187 (1-7)	↓	↓	↓	↓	↓	↓
801191	<1	<2	4-24-12	BE	NO	NO
801192	>1	↓	↓	↓	YES	3010A
801197	↓	↓	↓	↓	YES	↓
801216	<1	>2	4-25-12	BE	YES	3010A YES 11:00
801218 (1-5)	↓	<2	↓	↓	↓	↓
801217 (1-7)	↓	↓	↓	↓	↓	↓
801219 (13-12)	↓	↓	↓	↓	↓	↓
801220 (1-6-1)	↓	↓	↓	↓	↓	↓
801221 (1-8)	↓	↓	↓	↓	↓	↓
801222	>1	<2	↓	↓	↓	↓
801225	<1	↓	↓	↓	NO	NO
801226	↓	↓	↓	↓	↓	↓
801224	>1	↓	↓	↓	YES	3010A
801236	<1	>2	4-26-12	BE	NO	YES 7:45 AM
801239 (15)	↓	↓	↓	↓	↓	↓
801238 (12)	↓	↓	↓	↓	↓	↓
801240 (12)	↓	↓	↓	↓	↓	↓
801241 (9)	↓	↓	↓	↓	↓	↓
801249	<1	<2	↓	↓	YES	3010A
801250 (1-8)	↓	↓	↓	↓	↓	↓
801251 (1-6)	↓	↓	↓	↓	↓	↓
801252 (1-8) BE 4-19-12	↓	>2 <2	4-26-12	↓	NO	YES 11:15
801245 (1-3)	<1	<2	4-27-12	BE	YES	3010A
801264 (1-7)	<1	<2	↓	↓	↓	↓
801265 (1-6)	↓	↓	↓	↓	↓	↓
801266 (12-11)	↓	↓	↓	↓	↓	↓
801267 (1-8)	↓	↓	↓	↓	↓	↓
801276	>1	<2	4-30-12	BE	YES	3010A
801275	<1	↓	↓	↓	NO	NO
801277	↓	↓	↓	↓	↓	↓
801278	↓	↓	↓	↓	↓	↓
801301	>1	<2	↓	↓	YES	3010A
801298 (1-6)	<1	↓	↓	↓	↓	↓
801299 (1-3)	↓	↓	↓	↓	↓	↓
8012300 (1-2.5)	↓	↓	↓	↓	↓	↓
801303 (1-10)	↓	↓	↓	↓	NO	NO
801304 (1-10)	↓	↓	↓	↓	↓	↓
801307	<1	<2	↓	↓	↓	↓
801308	>1	↓	↓	↓	YES	3010A
801309	↓	↓	↓	↓	↓	↓
801252-11	<1	↓	↓	↓	↓	↓



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: EL

Lab # 88/216

Date Delivered: 04/24/12 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. e. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: Linda

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-100	4-3-12	14:47	4-3-12	14:51	#1	4-3-12	01:00	-56.6	C. Knight	7.2

Notes:

SC-700B	4-3-12	14:29	4-3-12	14:33	#1	4-3-12	01:00	-56.6	C. Knight	7.0
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Notes:

SC-701	4-3-12	14:14	4-3-12	14:19	#1	4-3-12	01:00	-56.6	C. Knight	7.6
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Notes:

SC-700B	4-10-12	12:50	4-10-12	12:55	#1	4-10-12	01:00	-56.4	CHRIS LEWIS	7.0
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Notes:

SC-700B.a	4-16-12	06:06	4-16-12	6:21	#1	4/16/12	01:00	-56.2	Chris Knight	7.1
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Notes:

SC-700B.b	4-20-12	13:00	4-20-12	13:10	#1	4/16/12	01:00	-56.2	J. Jones	7.1
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Notes:

SC-700B	4-24-12	14:40	4-24-12	14:46	#1	4-24-12	01:00	-57.0	C. Knight	7.4
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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

June 25, 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-359 PROJECT, GROUNDWATER
MONITORING,
TLI NO.: 801339

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-359 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 May 1, 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.

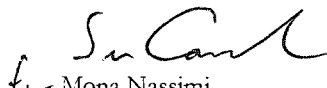
The total and total dissolved metals were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.


Due to the discrepancy between the Total Dissolved Chromium (1.2 ug/L) and Hexavalent Chromium (ND<0.20 ug/L) results for sample SC-700B-WDR-359, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers was digested and analyzed for Total Dissolved Chromium. The results were 1.1 and 1.0 ug/L, respectively. The original digestate was re-analyzed for confirmation and yielded a result of 1.0 ug/L. The original results were reported.

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

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

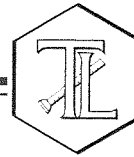
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


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: 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.: 801339

Date: June 25, 2012

Collected: May 1, 2012

Received: May 1, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2320B	Total Alkalinity	Melissa Scharfe
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	Melissa Scharfe
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 / Maksim Gorbunov

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

Laboratory No.: 801339
Date Received: May 1, 2012

Attention: Shawn Duffy

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801339-001	SC-700B-WDR-359	E120.1	NONE	5/1/2012	15:09	EC	7460	umhos/cm	2.00
801339-001	SC-700B-WDR-359	E200.7	NONE	5/1/2012	15:09	Aluminum	ND	ug/L	50.0
801339-001	SC-700B-WDR-359	E200.7	NONE	5/1/2012	15:09	BORON	1060	ug/L	200
801339-001	SC-700B-WDR-359	E200.7	NONE	5/1/2012	15:09	Iron	ND	ug/L	20.0
801339-001	SC-700B-WDR-359	E200.7	NONE	5/1/2012	15:09	Zinc	ND	ug/L	10.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Antimony	ND	ug/L	5.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Arsenic	ND	ug/L	1.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Barium	12.9	ug/L	10.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Chromium	1.2	ug/L	1.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Copper	ND	ug/L	5.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Lead	ND	ug/L	10.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Manganese	4.4	ug/L	1.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Molybdenum	21.6	ug/L	10.0
801339-001	SC-700B-WDR-359	E200.8	NONE	5/1/2012	15:09	Nickel	ND	ug/L	10.0
801339-001	SC-700B-WDR-359	E218.6	LABFLT	5/1/2012	15:09	Chromium, hexavalent	ND	ug/L	0.20
801339-001	SC-700B-WDR-359	E300	NONE	5/1/2012	15:09	Fluoride	2.10	mg/L	0.500
801339-001	SC-700B-WDR-359	E300	NONE	5/1/2012	15:09	Nitrate as N	2.84	mg/L	1.00
801339-001	SC-700B-WDR-359	E300	NONE	5/1/2012	15:09	Sulfate	534	mg/L	25.0
801339-001	SC-700B-WDR-359	SM2130B	NONE	5/1/2012	15:09	Turbidity	ND	NTU	0.100
801339-001	SC-700B-WDR-359	SM2540C	NONE	5/1/2012	15:09	Total Dissolved Solids	4570	mg/L	250
801339-001	SC-700B-WDR-359	SM4500NH3D	NONE	5/1/2012	15:09	Ammonia-N	ND	mg/L	0.500
801339-001	SC-700B-WDR-359	SM4500NO2B	NONE	5/1/2012	15:09	Nitrite as N	ND	mg/L	0.0050

005

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



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801339-002	SC-100B-WDR-359	E120.1	NONE	5/1/2012	15:01	EC	7770	umhos/cm	2.00
801339-002	SC-100B-WDR-359	E200.7	NONE	5/1/2012	15:01	Aluminum	ND	ug/L	50.0
801339-002	SC-100B-WDR-359	E200.7	NONE	5/1/2012	15:01	BORON	1070	ug/L	200
801339-002	SC-100B-WDR-359	E200.7	NONE	5/1/2012	15:01	Iron	ND	ug/L	20.0
801339-002	SC-100B-WDR-359	E200.7	LABFLT	5/1/2012	15:01	Iron	ND	ug/L	20.0
801339-002	SC-100B-WDR-359	E200.7	NONE	5/1/2012	15:01	Zinc	ND	ug/L	10.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Antimony	ND	ug/L	5.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Arsenic	5.0	ug/L	1.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Barium	25.2	ug/L	10.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Chromium	798	ug/L	1.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Copper	ND	ug/L	5.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Lead	ND	ug/L	10.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Manganese	5.5	ug/L	1.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Manganese	5.7	ug/L	1.0
801339-002	SC-100B-WDR-359	E200.8	LABFLT	5/1/2012	15:01	Molybdenum	20.4	ug/L	10.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Nickel	ND	ug/L	10.0
801339-002	SC-100B-WDR-359	E200.8	NONE	5/1/2012	15:01	Chromium, hexavalent	777	ug/L	10.0
801339-002	SC-100B-WDR-359	E218.6	LABFLT	5/1/2012	15:01	Fluoride	2.61	mg/L	0.500
801339-002	SC-100B-WDR-359	E300	NONE	5/1/2012	15:01	Nitrate as N	3.04	mg/L	1.00
801339-002	SC-100B-WDR-359	E300	NONE	5/1/2012	15:01	Sulfate	566	mg/L	50.0
801339-002	SC-100B-WDR-359	E300	NONE	5/1/2012	15:01	Turbidity	ND	NTU	0.100
801339-002	SC-100B-WDR-359	SM2130B	NONE	5/1/2012	15:01	Alkalinity	156	mg/L	5.00
801339-002	SC-100B-WDR-359	SM2320B	NONE	5/1/2012	15:01	Bicarbonate	156	mg/L	5.00
801339-002	SC-100B-WDR-359	SM2320B	NONE	5/1/2012	15:01	Carbonate	ND	mg/L	5.00
801339-002	SC-100B-WDR-359	SM2320B	NONE	5/1/2012	15:01	Total Dissolved Solids	4750	mg/L	250
801339-002	SC-100B-WDR-359	SM2540C	NONE	5/1/2012	15:01	Ammonia-N	ND	mg/L	0.500
801339-002	SC-100B-WDR-359	SM4500NH3D	NONE	5/1/2012	15:01	Nitrite as N	ND	mg/L	0.0050
801339-002	SC-100B-WDR-359	SM4500NO2B	NONE	5/1/2012	15:01	Total Phosphorous-P	ND	mg/L	0.0200
801339-002	SC-100B-WDR-359	SM4500-PB_E	NONE	5/1/2012	15:01	Soluble Silica	23.1	mg/L	1.00
801339-002	SC-100B-WDR-359	SM4500SI	LABFLT	5/1/2012	15:01	Total Organic Carbon	1.23	mg/L	0.300
801339-002	SC-100B-WDR-359	SM5310C	NONE	5/1/2012	15:01				

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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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. 801339

Page 1 of 33

Printed 6/25/2012

Samples Received on 5/1/2012 8:40:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-359	801339-001	05/01/2012 15:09	Water
SC-100B-WDR-359	801339-002	05/01/2012 15:01	Water

Anions By I.C. - EPA 300.0

Batch 05AN12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-001 Fluoride	mg/L	05/02/2012 10:38	5.00	0.155	0.500	2.10
Nitrate as Nitrogen	mg/L	05/02/2012 10:38	5.00	0.135	1.00	2.84
Sulfate	mg/L	05/02/2012 12:40	50.0	5.70	25.0	534.
801339-002 Fluoride	mg/L	05/02/2012 10:49	5.00	0.155	0.500	2.61
Nitrate as Nitrogen	mg/L	05/02/2012 10:49	5.00	0.135	1.00	3.04
Sulfate	mg/L	05/02/2012 11:24	100	11.4	50.0	566.

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 = 801339-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	5.00	2.85	2.61	8.65	0 - 20
Sulfate	mg/L	100	556.	566	1.82	0 - 20
Nitrate as Nitrogen	mg/L	5.00	3.06	3.04	0.590	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.15	4.00	104.	90 - 110
Sulfate	mg/L	1.00	20.0	20.0	99.9	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00	100.	90 - 110

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Matrix Spike

Lab ID = 801339-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	5.00	23.4	22.6(20.0)	104.	85 - 115
Sulfate	mg/L	100	1570	1570(1000)	101.	85 - 115
Nitrate as Nitrogen	mg/L	5.00	23.6	23.0(20.0)	103.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	4.15	4.00	104.	90 - 110
Sulfate	mg/L	1.00	20.0	20.0	100.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00	100.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.16	3.00	105.	90 - 110
Sulfate	mg/L	1.00	15.2	15.0	102.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	3.03	3.00	101.	90 - 110

MRCVS - Primary

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Nitrite SM 4500-NO2 B

Batch 05NO212C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-001 Nitrite as Nitrogen	mg/L	05/02/2012 11:33	1.00	0.000360	0.0050	ND
801339-002 Nitrite as Nitrogen	mg/L	05/02/2012 11:34	1.00	0.000360	0.0050	ND

Method Blank

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

Duplicate

Lab ID = 801339-001

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	0.0403	0.0400	101.	90 - 110

Matrix Spike

Lab ID = 801339-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0196	0.0200(0.0200)	98.0	85 - 115

MRCCS - Secondary

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	0.0194	0.0200	97.0	90 - 110



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Alkalinity by SM 2320B

Batch 05ALK12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-002 Alkalinity as CaCO ₃	mg/L	05/01/2012	1.00	1.68	5.00	156
Bicarbonate (Calculated)	mg/L	05/01/2012	1.00	1.68	5.00	156
Carbonate (Calculated)	mg/L	05/01/2012	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 = 801298-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	148	149	0.673	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	98.0	100.	98.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	98.0	100.	98.0	90 - 110

Matrix Spike

Lab ID = 801339-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	248	256(100.)	92.0	75 - 125

Matrix Spike Duplicate

Lab ID = 801339-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	248	256(100.)	92.0	75 - 125



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Specific Conductivity - EPA 120.1

Batch 05EC12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-001 Specific Conductivity	umhos/cm	05/04/2012	1.00	0.0950	2.00	7460
801339-002 Specific Conductivity	umhos/cm	05/04/2012	1.00	0.0950	2.00	7770

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 801339-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7780	7770	0.129	0 - 10

Lab Control Sample

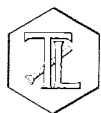
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	710.	706	100.	90 - 110

MRCCS - Secondary

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

MRCVS - Primary

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



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 33

Project Number: 424973.01.DM

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Chrome VI by EPA 218.6

Batch 05CrH12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-001 Chromium, Hexavalent	ug/L	05/02/2012 15:56	1.00	0.0260	0.20	ND
801339-002 Chromium, Hexavalent	ug/L	05/02/2012 16:07	50.0	1.30	10.0	777.

Method Blank

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

Duplicate

Lab ID = 801252-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	2.90	2.91	0.417	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.196	0.200	98.2	70 - 130

Lab Control Sample

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

Matrix Spike

Lab ID = 801252-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.12	7.04(5.00)	102.	90 - 110

Matrix Spike

Lab ID = 801252-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.86	7.91(5.00)	99.0	90 - 110

Matrix Spike

Lab ID = 801252-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.13	8.23(5.00)	98.1	90 - 110

Matrix Spike

Lab ID = 801252-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.12	8.20(5.00)	98.3	90 - 110

Matrix Spike

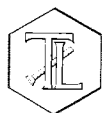
Lab ID = 801252-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.01	8.75(5.00)	105.	90 - 110

Matrix Spike

Lab ID = 801252-007

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	15.6	15.3(10.0)	102.	90 - 110



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Matrix Spike						Lab ID = 801252-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.04	8.15(5.00)	97.8	90 - 110
Matrix Spike						Lab ID = 801252-009
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.00(1.00)	102.	90 - 110
Matrix Spike						Lab ID = 801252-011
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.8	18.8(10.0)	90.2	90 - 110
Matrix Spike						Lab ID = 801320-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	9.77(5.00)	110.	90 - 110
Matrix Spike						Lab ID = 801320-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.9	17.2(10.0)	107.	90 - 110
Matrix Spike						Lab ID = 801321-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.07	1.00(1.00)	107.	90 - 110
Matrix Spike						Lab ID = 801338-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.8	16.9(10.0)	98.9	90 - 110
Matrix Spike						Lab ID = 801339-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.12	1.13(1.00)	99.2	90 - 110
Matrix Spike						Lab ID = 801339-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1790	1780(1000)	102.	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.06	5.00	101.	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102.	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.3	10.0	103.	95 - 105



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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 9 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Metals by EPA 200.7, Total

Batch 052412A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-001 Aluminum	ug/L	05/24/2012 13:38	1.00	2.83	50.0	ND
Boron	ug/L	05/24/2012 14:26	2.00	3.00	200.	1060
Iron	ug/L	05/24/2012 13:38	1.00	1.34	20.0	ND
Zinc	ug/L	05/24/2012 13:38	1.00	3.89	10.0	ND
801339-002 Aluminum	ug/L	05/24/2012 14:04	1.00	2.83	50.0	ND
Boron	ug/L	05/24/2012 14:04	1.00	1.50	200.	1070
Iron	ug/L	05/24/2012 14:04	1.00	1.34	20.0	ND
Zinc	ug/L	05/24/2012 14:04	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

Duplicate

Lab ID = 801339-001

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	2.00	1050	1060	0.948	0 - 20

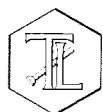
Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	2110	2000	105.	85 - 115
Iron	ug/L	1.00	2140	2000	107.	85 - 115
Zinc	ug/L	1.00	1930	2000	96.4	85 - 115
Boron	ug/L	1.00	1980	2000	98.8	85 - 115

Matrix Spike

Lab ID = 801339-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	1.00	1630	2000(2000)	81.3	75 - 125
Iron	ug/L	1.00	2210	2000(2000)	111.	75 - 125
Zinc	ug/L	1.00	2480	2000(2000)	124.	75 - 125
Boron	ug/L	2.00	5200	5060(4000)	104.	75 - 125


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
Page 13 of 33
Project Number: 424973.01.DM
Printed 6/25/2012
Metals by EPA 200.8, Total

Batch 060412B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-001 Antimony	ug/L	06/05/2012 08:45	5.00	0.420	5.0	ND
Barium	ug/L	06/05/2012 08:45	5.00	0.205	10.0	12.9
Lead	ug/L	06/05/2012 08:45	5.00	0.265	10.0	ND
Manganese	ug/L	06/05/2012 08:45	5.00	0.270	1.0	4.4
Molybdenum	ug/L	06/05/2012 08:45	5.00	0.150	10.0	21.6
801339-002 Antimony	ug/L	06/05/2012 09:00	5.00	0.420	5.0	ND
Barium	ug/L	06/05/2012 09:00	5.00	0.205	10.0	25.2
Lead	ug/L	06/05/2012 09:00	5.00	0.265	10.0	ND
Manganese	ug/L	06/05/2012 09:00	5.00	0.270	1.0	5.5
Molybdenum	ug/L	06/05/2012 09:00	5.00	0.150	10.0	20.4

Method Blank

Parameter	Unit	DF	Result
Barium	ug/L	1.00	ND
Antimony	ug/L	1.00	ND
Lead	ug/L	1.00	ND
Manganese	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND

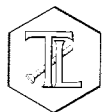
Duplicate

Lab ID = 801373-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	5.00	15.7	17.0	8.14	0 - 20
Antimony	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	80.4	74.0	8.28	0 - 20
Molybdenum	ug/L	5.00	35.8	34.7	3.01	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	0.869	1.00	86.9	70 - 130
Antimony	ug/L	1.00	0.908	1.00	90.8	70 - 130
Lead	ug/L	1.00	0.942	1.00	94.2	70 - 130
Manganese	ug/L	1.00	0.194	0.200	96.8	70 - 130
Molybdenum	ug/L	1.00	1.08	1.00	108.	70 - 130


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
Page 14 of 33
Project Number: 424973.01.DM
Printed 6/25/2012
Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	5.00	99.6	100.	99.6	85 - 115
Antimony	ug/L	5.00	100.	100.	100.	85 - 115
Lead	ug/L	5.00	98.2	100.	98.2	85 - 115
Manganese	ug/L	5.00	97.1	100.	97.1	85 - 115
Molybdenum	ug/L	5.00	93.9	100.	93.9	85 - 115

Matrix Spike
Lab ID = 801373-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	5.00	105.	117(100.)	88.2	75 - 125
Antimony	ug/L	5.00	87.9	100.(100.)	87.9	75 - 125
Lead	ug/L	5.00	84.2	100.(100.)	84.2	75 - 125
Manganese	ug/L	5.00	169.	174(100.)	94.6	75 - 125
Molybdenum	ug/L	5.00	124.	135.(100.)	89.1	75 - 125

Matrix Spike Duplicate
Lab ID = 801373-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	5.00	119.	117(100.)	102.	75 - 125
Antimony	ug/L	5.00	99.8	100.(100.)	99.8	75 - 125
Lead	ug/L	5.00	95.5	100.(100.)	95.5	75 - 125
Manganese	ug/L	5.00	179.	174(100.)	105.	75 - 125
Molybdenum	ug/L	5.00	134.	135.(100.)	99.6	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	9.61	10.0	96.1	90 - 110
Antimony	ug/L	1.00	9.26	10.0	92.6	90 - 110
Lead	ug/L	1.00	9.92	10.0	99.2	90 - 110
Manganese	ug/L	1.00	10.2	10.0	102.	90 - 110
Molybdenum	ug/L	1.00	10.6	10.0	106.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	9.86	10.0	98.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	9.70	10.0	97.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Barium	ug/L	1.00	9.32	10.0	93.2	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 17 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Interference Check Standard A

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

Interference Check Standard A

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
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		
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		
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	9.86	10.0	98.6	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.78	10.0	97.8	80 - 120

Interference Check Standard AB

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

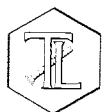
Interference Check Standard AB

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

Serial Dilution

Lab ID = 801339-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	25.0	24.7	25.2	2.08	0 - 10
Molybdenum	ug/L	25.0	20.3	20.4	0.393	0 - 10



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 18 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Metals by EPA 200.8, Total

Batch 060512B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-001 Arsenic	ug/L	06/06/2012 17:50	5.00	0.265	1.0	ND
Chromium	ug/L	06/06/2012 17:50	5.00	0.195	1.0	1.2
801339-002 Arsenic	ug/L	06/06/2012 18:04	5.00	0.265	1.0	5.0
Chromium	ug/L	06/06/2012 18:04	5.00	0.195	1.0	798.

Method Blank

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

Duplicate

Lab ID = 801373-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	5.00	ND	0.00	0	0 - 20
Chromium	ug/L	5.00	563.	528	6.38	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.228	0.200	114.	70 - 130
Chromium	ug/L	1.00	0.159	0.200	79.4	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	94.8	100.	94.8	85 - 115
Chromium	ug/L	5.00	97.4	100.	97.4	85 - 115

Matrix Spike

Lab ID = 801373-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	89.4	100.(100.)	89.4	75 - 125
Chromium	ug/L	5.00	946.	903(375)	112.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	10.3	10.0	103.	90 - 110
Chromium	ug/L	1.00	10.2	10.0	102.	90 - 110

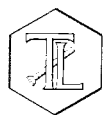
MRCVS - Primary

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

MRCVS - Primary

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

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 20 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Interference Check Standard A

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

Interference Check Standard A

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

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.72	10.0	97.2	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.86	10.0	98.6	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.94	10.0	99.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.71	10.0	97.1	80 - 120

Serial Dilution

Lab ID = 801339-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	798.	798	0.0125	0 - 10



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 21 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Metals by EPA 200.8, Total

Batch 062012A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-001 Copper	ug/L	06/22/2012 21:46	5.00	0.235	5.0	ND
Nickel	ug/L	06/22/2012 21:46	5.00	0.355	10.0	ND
801339-002 Copper	ug/L	06/22/2012 21:53	5.00	0.235	5.0	ND
Nickel	ug/L	06/22/2012 21:53	5.00	0.355	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Nickel	ug/L	1.00	ND
Copper	ug/L	1.00	ND

Duplicate

Lab ID = 802226-001

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

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	1.00	1.00	100.	70 - 130
Copper	ug/L	1.00	0.947	1.00	94.7	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	5.00	110.	100.	110.	85 - 115
Copper	ug/L	5.00	100.	100.	100.	85 - 115

Matrix Spike

Lab ID = 802226-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nickel	ug/L	5.00	95.2	100.(100.)	95.2	75 - 125
Copper	ug/L	5.00	93.9	100.(100.)	93.9	75 - 125

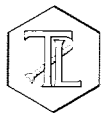
Matrix Spike Duplicate

Lab ID = 802226-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nickel	ug/L	5.00	95.7	100.(100.)	95.7	75 - 125
Copper	ug/L	5.00	94.3	100.(100.)	94.3	75 - 125

MRCCS - Secondary

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 24 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Reactive Silica by SM4500-Si D

Batch 05Si12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-002 Silica	mg/L	05/07/2012	25.0	0.532	1.00	23.1

Method Blank

Parameter	Unit	DF	Result
Silica	mg/L	1.00	ND

Duplicate

Lab ID = 801391-003

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	0.202	0.220	91.7	90 - 110

Matrix Spike

Lab ID = 801391-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Silica	mg/L	1.00	0.439	0.400(0.400)	110.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.100	0.110	90.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.414	0.400	103.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.414	0.400	103.	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 25 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Total Dissolved Solids by SM 2540 C

Batch 05TDS12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-001 Total Dissolved Solids	mg/L	05/04/2012	1.00	0.400	250.	4570
801339-002 Total Dissolved Solids	mg/L	05/04/2012	1.00	0.400	250.	4750

Method Blank

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

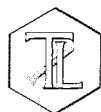
Duplicate

Lab ID = 801373-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4640	4420	4.86	0 - 5

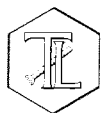
Lab Control Sample

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


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
Project Number: 424973.01.DM
Page 26 of 33
Printed 6/25/2012
Total Organic Carbon (T/DOC) SM 5310 C

Batch 05TOC12B

Total Organic Carbon (TOC) Data						
Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-002 Total Organic Carbon	mg/L	05/17/2012 19:34	1.00	0.0103	0.300	1.23
Method Blank						
Parameter	Unit	DF	Result			
Total Organic Carbon	mg/L	1.00	ND			
Duplicate					Lab ID = 801417-001	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Organic Carbon	mg/L	1.00	1.19	1.18	0.844	0 - 20
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	19.5	20.0	97.3	90 - 110
Matrix Spike					Lab ID = 801417-002	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	10.3	10.7(10.0)	95.9	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.52	10.0	95.2	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.78	10.0	97.8	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.64	10.0	96.4	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.59	10.0	95.9	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 27 of 33

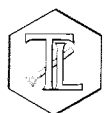
Project Number: 424973.01.DM

Printed 6/25/2012

Total Phosphate, SM 4500-PB,E

Batch 05TP12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-002 Phosphate, Total As P	mg/L	05/03/2012	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 = 801339-002		
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Phosphate, Total As P	mg/L	1.00	ND	0.00	0	0 - 20
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.106	0.100	106.	90 - 110
Matrix Spike				Lab ID = 801339-002		
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0530	0.0650(0.0650)	81.5	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0580	0.0600	96.7	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0624	0.0650	96.0	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 28 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Ammonia Nitrogen by SM4500-NH3D

Batch 05NH312A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-001 Ammonia as N	mg/L	05/07/2012	1.00	0.00120	0.500	ND
801339-002 Ammonia as N	mg/L	05/07/2012	1.00	0.00120	0.500	ND

Method Blank

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

Duplicate

Lab ID = 801339-002

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	9.63	10.0	96.3	90 - 110

Lab Control Sample Duplicate

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 = 801339-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.28	6.00(6.00)	105.	75 - 125

Matrix Spike Duplicate

Lab ID = 801339-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.62	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	6.05	6.00	101.	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 29 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Metals by EPA 200.8, Dissolved

Batch 061212A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-002 Manganese	ug/L	06/12/2012 23:06	5.00	0.270	1.0	5.7

Method Blank

Parameter	Unit	DF	Result
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 800964-009

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

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	0.225	0.200	113.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	5.00	98.1	100.	98.1	85 - 115

Matrix Spike

Lab ID = 800964-009

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

Matrix Spike Duplicate

Lab ID = 800964-009

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Manganese	ug/L	5.00	102.	100.(100.)	102.	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

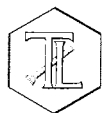
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.60	10.0	96.0	90 - 110

MRCVS - Primary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.75	10.0	97.5	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 31 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Metals by 200.7, Dissolved

Batch 052412A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-002 Iron	ug/L	05/24/2012 14:50	1.00	1.34	20.0	ND

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate

Lab ID = 801373-003

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	21.9	26.3	18.2	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2140	2000	107.	85 - 115

Matrix Spike

Lab ID = 801373-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	2480	2030(2000)	123.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5090	5000	102.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5420	5000	108.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4570	5000	91.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5050	5000	101.	90 - 110

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 A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	1910	2000	95.7	80 - 120



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 32 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2180	2000	109.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	1950	2000	97.4	80 - 120

Turbidity by SM 2130 B

Batch 05TUC12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-001 Turbidity	NTU	05/02/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 801339-001

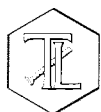
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.80	8.00	97.5	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.85	8.00	98.1	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 33 of 33

Project Number: 424973.01.DM

Printed 6/25/2012

Turbidity by SM 2130 B

Batch 05TUC12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801339-002 Turbidity	NTU	05/02/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 801339-002

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

Lab Control Sample

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

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	7.59	8.00	94.9	90 - 110

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


Mona Nassimi
Manager, Analytical Services



Truesdall Laboratories, Inc.

Total Dissolved Solids by SM 2540 C**Calculations**Batch: 05TDS12D
Date Analyzed: 5/9/12

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	67.7812	67.7816	67.7815	0.0001	No	0.0003	3.0	25.0	ND	1
801338-1	20	51.4877	51.5469	51.5469	0.0000	No	0.0592	2960.0	125.0	2960.0	1
801338-2	10	51.4257	51.4781	51.478	0.0001	No	0.0523	5230.0	250.0	5230.0	1
801339-1	10	49.2776	49.3233	49.3233	0.0000	No	0.0457	4570.0	250.0	4570.0	1
801339-2	10	49.6827	49.7304	49.7302	0.0002	No	0.0475	4750.0	250.0	4750.0	1
801367-1	100	68.5128	68.5391	68.5388	0.0003	No	0.0260	260.0	25.0	260.0	1
801373-1	10	51.1901	51.2339	51.2335	0.0004	No	0.0434	4340.0	250.0	4340.0	1
801373-2	10	48.1840	48.2281	48.2277	0.0004	No	0.0437	4370.0	250.0	4370.0	1
801373-3	10	48.0115	48.0559	48.0557	0.0002	No	0.0442	4420.0	250.0	4420.0	1
801421-2	200	108.5309	108.5487	108.5487	0.0000	No	0.0178	89.0	12.5	89.0	1
801421-4	100	67.0572	67.0705	67.0701	0.0004	No	0.0129	129.0	25.0	129.0	1
801373-3D	10	49.0186	49.0653	49.065	0.0003	No	0.0464	4640.0	250.0	4640.0	1
LCS	100	108.5868	108.6359	108.6358	0.0001	No	0.0490	490.0	25.0	490.0	1
801432	495	167.3462	167.3489	167.3485	0.0004	No	0.0023	4.6	5.1	ND	1
801428-17	50	67.2132	67.2502	67.2498	0.0004	No	0.0366	732.0	50.0	732.0	1
QC1304	100	67.1053	67.1389	67.1389	0.0000	No	0.0336	336.0	25.0	336.0	1
QC	100	74.7344	74.7688	74.7687	0.0001	No	0.0343	343.0	25.0	343.0	1
QC	100	73.1398	73.1732	73.1728	0.0004	No	0.0330	330.0	25.0	330.0	1
PE1304	100	74.7105	74.744	74.744	0.0000	No	0.0335	335.0	25.0	335.0	1
PE	100	76.5483	76.5822	76.5819	0.0003	No	0.0336	336.0	25.0	336.0	1
PE	100	78.4005	78.4347	78.4347	0.0000	No	0.0342	342.0	25.0	342.0	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)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	490	500	98.0%	90-110%	Yes
LCS2					

LCS Recovery

$$P = \left(\frac{LC}{LT} \right) \times 100$$

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801373-3	0.0442	0.0464	2.4%	≤5%	Yes

Duplicate Determination Difference

$$\% \text{ Difference} = \frac{|A - B|}{C} \times 100$$

$$\text{where } C = \frac{A + B}{2}$$

A = Weight of the first sample in (g).

B = Weight of the second sample in (g).

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS12D
Date Analyzed: 5/9/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
801338-1	5110	0.58	3321.5	0.89
801338-2	8590	0.61	5583.5	0.94
801339-1	7590	0.60	4933.5	0.93
801339-2	7920	0.60	5148	0.92
801367-1	401	0.65	260.65	1.00
801373-1	7660	0.57	4979	0.87
801373-2	7760	0.56	5044	0.87
801373-3	7740	0.57	5031	0.88
801421-2	154	0.58	100.1	0.89
801421-4	205	0.63	133.25	0.97
801373-3D	7740	0.60	5031	0.92
LCS				
801432	9.21	ND	5.9865	ND
801428-17	1292	0.57	839.8	0.87
QC1304	586	0.57	380.9	0.88
QC	586	0.59	380.9	0.90
QC	586	0.56	380.9	0.87
PE1304	618	0.54	401.7	0.83
PE	618	0.54	401.7	0.84
PE	618	0.55	401.7	0.85






Alkalinity by SM 2320B

Calculations

Analytical Batch: 05ALK12A
 Matrix: Water
 Date of Analysis: 5/7/12

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	5.40	50	0.02		0.0	0.00		0.0	5	ND	ND	ND	ND	
801298-3	9.13	50	0.02	0.8	16.0	7.45		149.0	5	149.0	117.0	32	ND	
801298-3 DUP	9.15	50	0.02	0.8	16.0	7.40		148.0	5	148.0	116.0	32	ND	
801298-4	8.49	50	0.02	0.45	9.0	6.65		133.0	5	133.0	115.0	18	ND	
801298-5	8.27	50	0.02		0.0	7.10		142.0	5	142.0	142.0	ND	ND	
801298-6	8.13	50	0.02		0.0	6.15		123.0	5	123.0	123.0	ND	ND	
801299-1	7.75	50	0.02		0.0	7.25		145.0	5	145.0	145.0	ND	ND	
801299-2	7.79	50	0.02		0.0	7.70		154.0	5	154.0	154.0	ND	ND	
801321-7	7.49	50	0.02		0.0	11.90		238.0	5	238.0	238.0	ND	ND	
801321-8	7.39	50	0.02		0.0	8.45		169.0	5	169.0	169.0	ND	ND	
801300-1	8.26	50	0.02		0.0	9.45		189.0	5	189.0	189.0	ND	ND	
801300-3	9.36	50	0.02	1.3	25.0	8.80		176.0	5	176.0	126.0	50	ND	
801300-5	7.73	50	0.02		0.0	8.85		177.0	5	177.0	177.0	ND	ND	
801311	8.11	50	0.02		0.0	4.25		85.0	5	85.0	85.0	ND	ND	
801339-2	7.35	50	0.02		0.0	7.80		156.0	5	156.0	156.0	ND	ND	
801339-2 MS	9.06	50	0.02	1.8	35.0	12.40		248.0	5	248.0	178.0	70	ND	
801339-2 MSD	9.00	50	0.02	1.7	34.0	12.40		248.0	5	248.0	180.0	68	ND	
LCS	10.59	50	0.02	2.3	45.0	4.90		98.0	5	98.0	8.0	90	ND	
LCSD	10.53	50	0.02	2.3	46.0	4.90		98.0	5	98.0	6.0	92	ND	

Calculations as follows:

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

Where:

T = Total Alkalinity, mg CaCO₃/L
 P = Phenolphthalein Alkalinity, mg CaCO₃/L
 A = mL standard acid used
 N = normality of standard acid

$$\text{Low Alkalinity:} = \frac{(2 \times B - C) \times N \times 50000}{\text{mL sample}}$$

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)

Blank Summary

Reporting Limit, RL	Measured Value, ppm	Accept Limit	QC Within Control?
5 ppm	0	<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	98	100	98.0%	90-110	Yes
LCSD	98	100	98.0%	90-110	Yes

Duplicate Determination Difference Summary

Lab Number I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Acceptance Limit	QC Within Control?
801298-3	149	148	0.7%	≤20%	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?
801339-2	156	1	100	100	248	256.00	92%	75-125	Yes	0.0%	≤20%	Yes
	156	1	100	100	248	256.00	92%		Yes			

Melissa S.

Hope T.

050212a



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-359]

Rec'd 05/01/12
S 801339

COC Number

TURNAROUND TIME

10 Days

DATE 5/01/12

PAGE 1 OF 1

COMPANY	CH2M HILL /E2																	COMMENTS	
PROJECT NAME	PG&E Topock IM3																		
PHONE	530-229-3303 FAX 530-339-3303																		
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612																		
P.O. NUMBER	424973.01.DM																		
SAMPLERS (SIGNATURE) <i>P. Knight</i>																		NUMBER OF CONTAINERS	
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr(VI) (218.6) Lab Filtered	Alkalinity (2320-B)	EC (120.1)	TDS (2540 c)	Turb (2130)	Total Metals (200.7) See List Below	Ammonia (4500-NH3)	Total P (4500-P)	Anions (300.0) F, NO3, SO4	TOC (5310 C)	Dissolved Metals (200.7) Fe, Mn lab filtered	Soluble Silica - Reactive (4500-Si CorD)	NO2 (4500-NO2B)			
SC-700B-WDR-359	5/01/12	15:09		X		X	X	X	X	X		X			X		4		
SC-100B-WDR-359	5/01/12	15:01		X	X	X	X	X	X	X	X	X	X	X	X		9		
For Sample Conditions See Form Attached																			
				ALERT!! Level III QC															
																		13	TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished) <i>P. Knight</i>	Printed Name <i>P. Knight</i>	Company/ Agency <i>CH2M HILL</i>	Date/ Time <i>5-1-12 15:38</i>	SAMPLE CONDITIONS	
Signature (Received) <i>B. Dayag</i>	Printed Name <i>B. DAYAG</i>	Company/ Agency <i>TLI</i>	Date/ Time <i>5-1-12 15:38</i>	RECEIVED	COOL <input checked="" type="checkbox"/> WARM <input type="checkbox"/>
Signature (Relinquished) <i>B. Dayag</i>	Printed Name <i>B. DAYAG</i>	Company/ Agency <i>TLI</i>	Date/ Time <i>5-1-12 20:40</i>	CUSTODY SEALED	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Signature (Received) <i>Linda</i>	Printed Name <i>Shelburne</i>	Company/ Agency <i>TLI</i>	Date/ Time <i>5/1/12 20:40</i>	SPECIAL REQUIREMENTS:	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time		

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

[illegible]

Mr
Gw 5/10/12
133

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
801312(1-2,4)	<1	>2	4-3-12	BE	NO	YES 15:45
801320(1-2)	<1	<2	5-2-12	BE	YES	3010A
801321(1-3)	↓	↓	↓	↓	↓	↓
801329(1-10)	↓	↓	↓	↓	NO	NO
801330	↓	>2	↓	↓	NO	YES 7:45 AM
801334	>1	<2	↓	↓	YES	3010A
801338(1-2)	<1	>2	↓	↓	↓	↓
801339(1-2)	↓	<2	↓	↓	↓	↓
801339(1-2)	↓	>2	↓	↓	↓	↓
801340(1-22)	↓	<2	↓	↓	↓	↓
801344(1-69)	<1	<2	↓	↓	NO	NO
801345(1-10)	↓	↓	↓	↓	↓	↓
801346(1-48)	↓	>2	↓	↓	↓	YES 14:00
801347(1-18)	↓	>2	↓	↓	↓	↓
801348(1-94)	↓	<2	↓	↓	↓	NO
801349(1-33)	↓	>2	↓	↓	↓	YES 14:00
801350(1-33)	↓	>2	↓	↓	↓	↓
801341(1-2)	↓	<2	↓	↓	↓	NO
801351	>1	↓	↓	↓	YES	3010A
801358(7-9)	<1	>2	↓	↓	NO	YES 15:00
801358	>1	↓	↓	↓	YES	3010A YES
801373(1-3)	>1	>2	5-3-12	BE	YES	3010A
801366(10-12)	<1	>2	↓	↓	NO	YES 7:30
801368	<1	<2	↓	↓	NO	NO
801371(1-2)	↓	↓	↓	↓	↓	↓
801370-4	>1	↓	↓	↓	YES	3010A
801394(1-3)	<1	>2	5-4-12	BE	NO	YES
801330	<1	<2	5-7-12	BE	NO	NO
801412	↓	↓	↓	↓	↓	↓
801421(1-2)	<1	>2	5-8-12	BE	NO	YES 9:00 AM
801428(17/24)	<1	↓	↓	↓	↓	↓
801427	↓	<2	↓	↓	↓	NO
801426	↓	↓	↓	↓	↓	↓
801437(1-2)	↓	>2	↓	↓	↓	YES 15:00
801432	↓	↓	↓	↓	↓	↓
801433-8	↓	↓	↓	↓	↓	↓
801445	>1	>2	5-9-12	BE	YES	3010A
801447	↓	>	↓	↓	↓	↓
801445	>1	<2	5-9-12	BE	YES	3010A
801447	>1	↓	↓	↓	↓	↓
801446	<1	↓	↓	↓	NO	NO
801448	↓	↓	↓	↓	↓	↓
801449	↓	↓	↓	↓	↓	↓
801450	↓	↓	↓	↓	↓	↓
801460	>1	>2	↓	↓	YES	3010A YES 15:00
801461	<1	>2	↓	↓	YES	3010A
801471	<1	>2	5-10-12	BE	NO	YES 8:30
801472(10-12)	↓	↓	↓	↓	↓	↓
801462(1-19)	↓	<2	↓	↓	YES	3010A

5-9-12 BE
5-9-12 BE



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E 2

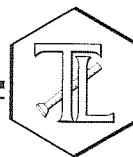
Lab # SP1339

Date Delivered: 05/01/12 Time: 20:40 By: ☐ Mail ☒ Field Service ☐ Client

1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all requested analyses understood and acceptable? ☒ Yes ☐ No ☐ N/A
6. Were samples received in a chilled condition?
Temperature (if yes)? 3°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☒ Client
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. Shabunine

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

June 19, 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-360 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 801461

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-360 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.

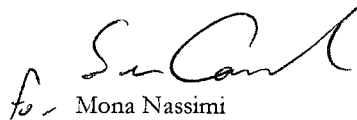
The samples were received and delivered with the chain of custody on May 8, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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.

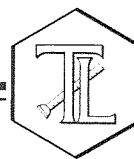
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


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.: 801461

Date: June 19, 2012

Collected: May 8, 2012

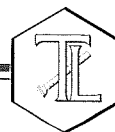
Received: May 8, 2012

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 / Maksim Gorbunov

TRUESDAIL LABORATORIES, INC.

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

Attention: Shawn Duffy

Laboratory No.: 801461

Date Received: May 8, 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
801461-001	SC-700B-WDR-360	E120.1	NONE	5/8/2012	14:50	EC	7430	umhos/cm	2.00
801461-001	SC-700B-WDR-360	E200.8	NONE	5/8/2012	14:50	Chromium	ND	ug/L	1.0
801461-001	SC-700B-WDR-360	E200.8	NONE	5/8/2012	14:50	Manganese	4.6	ug/L	1.0
801461-001	SC-700B-WDR-360	E218.6	LABFLT	5/8/2012	14:50	Chromium, hexavalent	ND	ug/L	1.0
801461-001	SC-700B-WDR-360	SM2130B	NONE	5/8/2012	14:50	Turbidity	0.130	NTU	0.100
801461-001	SC-700B-WDR-360	SM2540C	NONE	5/8/2012	14:50	Total Dissolved Solids	4180	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.

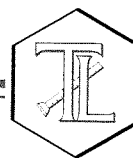
Quality Control data will always have three (3) significant figures.

005

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

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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. 801461

Page 1 of 8

Printed 6/19/2012

Samples Received on 5/8/2012 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-360	801461-001	05/08/2012 14:50	Water

Specific Conductivity - EPA 120.1

Batch 05EC12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801461-001 Specific Conductivity	umhos/cm	05/11/2012	1.00	0.0950	2.00	7430

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 801461-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7420	7430	0.135	0 - 10

Lab Control Sample

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

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	992	998	99.4	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 8

Project Number: 424973.01.DM

Printed 6/19/2012

Chrome VI by EPA 218.6

Batch 05CrH12H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801461-001 Chromium, Hexavalent	ug/L	05/09/2012 13:50	5.00	0.125	1.0	ND
Method Blank						
Parameter	Unit	DF	Result			
Chromium, Hexavalent	ug/L	1.00	ND			
Duplicate					Lab ID = 801340-014	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	29.5	29.7	0.571	0 - 20
Low Level Calibration Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.194	0.200	97.1	70 - 130
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.83	5.00	96.6	90 - 110
Matrix Spike					Lab ID = 801340-013	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	77.8	79.9(50.0)	95.7	90 - 110
Matrix Spike					Lab ID = 801340-014	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	78.0	79.7(50.0)	96.7	90 - 110
Matrix Spike					Lab ID = 801340-015	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	30.1	31.0(25.0)	96.2	90 - 110
Matrix Spike					Lab ID = 801340-016	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	41.0	41.4(25.0)	98.4	90 - 110
Matrix Spike					Lab ID = 801340-017	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	31.4	32.1(25.0)	97.4	90 - 110
Matrix Spike					Lab ID = 801340-020	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	126.	126(75.0)	99.6	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 6/19/2012

Matrix Spike

Lab ID = 801340-021

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	173.	176.(100.)	96.9	90 - 110

Matrix Spike

Lab ID = 801340-022

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	184.	188.(100.)	96.5	90 - 110

Matrix Spike

Lab ID = 801461-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.943	1.06(1.00)	87.8	90 - 110

Matrix Spike

Lab ID = 801461-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.63	5.07(5.00)	91.1	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.85	5.00	97.0	90 - 110

MRCVS - Primary

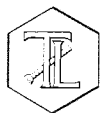
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.66	10.0	96.6	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.69	10.0	96.9	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.71	10.0	97.1	95 - 105



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 8

Project Number: 424973.01.DM

Printed 6/19/2012

Metals by EPA 200.8, Total

Batch 061512A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801461-001 Chromium	ug/L	06/15/2012 22:26	5.00	0.195	1.0	ND
Manganese	ug/L	06/15/2012 22:26	5.00	0.270	1.0	4.6

Method Blank

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

Duplicate

Lab ID = 801750-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	3.00	2.90	3.49	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.140	0.200	70.0	70 - 130
Manganese	ug/L	1.00	0.154	0.200	76.9	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	94.6	100.	94.6	85 - 115
Manganese	ug/L	5.00	94.7	100.	94.7	85 - 115

Matrix Spike

Lab ID = 801750-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	101.	100.(100.)	101.	75 - 125
Manganese	ug/L	5.00	104.	103.(100.)	101.	75 - 125

Matrix Spike Duplicate

Lab ID = 801750-001

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	104.	103.(100.)	101.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.72	10.0	97.2	90 - 110
Manganese	ug/L	1.00	9.41	10.0	94.1	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.69	10.0	96.9	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 6/19/2012

Total Dissolved Solids by SM 2540 C

Batch 05TDS12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801461-001 Total Dissolved Solids	mg/L	05/10/2012	1.00	0.400	250.	4180

Method Blank

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

Duplicate

Lab ID = 801441-008

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	1190	1190	0.336	0 - 5

Lab Control Sample

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

Turbidity by SM 2130 B

Batch 05TUC12G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801461-001 Turbidity	NTU	05/09/2012	1.00	0.0140	0.100	0.130

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 801461-001

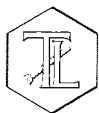
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	0.128	0.130	1.55	0 - 20

Lab Control Sample

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

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.12	8.00	102.	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 6/19/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


Mona Nassimi
Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C**Calculations**Batch: 05TDS12E
Date Analyzed: 5/13/12

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	112.3609	112.3609	112.3609	0.0000	No	0.0000	0.0	25.0	ND	1
801437-1	100	74.9410	74.9972	74.9964	0.0008	Yes	0.0554	554.0	25.0	554.0	1
801437-2	50	51.0652	51.0941	51.094	0.0001	No	0.0288	576.0	50.0	576.0	1
801441-1	50	72.6498	72.706	72.7059	0.0001	No	0.0561	1122.0	50.0	1122.0	1
801441-2	50	50.4226	50.4611	50.4607	0.0004	No	0.0381	762.0	50.0	762.0	1
801441-3	50	47.5322	47.5667	47.5664	0.0003	No	0.0342	684.0	50.0	684.0	1
801441-4	50	50.9615	50.995	50.9948	0.0002	No	0.0333	666.0	50.0	666.0	1
801441-5	50	51.0856	51.1143	51.1143	0.0000	No	0.0287	574.0	50.0	574.0	1
801441-6	100	72.9640	73.0147	73.0137	0.0010	Yes	0.0497	497.0	25.0	497.0	1
801441-7	50	73.4952	73.5472	73.5472	0.0000	No	0.0520	1040.0	50.0	1040.0	1
801441-8	50	47.9051	47.9647	47.9647	0.0000	No	0.0596	1192.0	50.0	1192.0	1
801441-8D	50	49.3568	49.4166	49.4165	0.0001	No	0.0597	1194.0	50.0	1194.0	1
LCS	100	111.5161	111.5661	111.5661	0.0000	No	0.0500	500.0	25.0	500.0	1
801441-9	50	47.2292	47.287	47.2868	0.0002	No	0.0576	1152.0	50.0	1152.0	1
801441-10	50	76.5145	76.5569	76.5566	0.0003	No	0.0421	842.0	50.0	842.0	1
801461	10	48.6030	48.6451	48.6448	0.0003	No	0.0418	4180.0	250.0	4180.0	1
801471	100	73.5967	73.6272	73.6272	0.0000	No	0.0305	305.0	25.0	305.0	1
801497	100	72.4193	72.4509	72.4509	0.0000	No	0.0316	316.0	25.0	316.0	1
801435-1	100	68.2206	68.2653	68.2653	0.0000	No	0.0447	447.0	25.0	447.0	1
801435-2	50	72.3893	72.4655	72.4655	0.0000	No	0.0762	1524.0	50.0	1524.0	1

Calculation as follows:

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)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	500	500	100.0%	90-110%	Yes
LCS2					

LCS Recovery

$$P = \left(\frac{LC}{LT} \right) \times 100$$

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801441-8	0.0596	0.0597	0.1%	≤5%	Yes

Duplicate Determination Difference

$$\% \text{ Difference} = \frac{|A - B|}{C} \times 100$$

$$\text{where } C = \frac{A + B}{2}$$

A = Weight of the first sample in (g).

B = Weight of the second sample in (g).

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS12E
Date Analyzed: 5/13/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
801437-1	964	0.57	626.6	0.88
801437-2	1037	0.56	674.05	0.85
801441-1	1684	0.67	1094.6	1.03
801441-2	1218	0.63	791.7	0.96
801441-3	1152	0.59	748.8	0.91
801441-4	1135	0.59	737.75	0.90
801441-5	1008	0.57	655.2	0.88
801441-6	883	0.56	573.95	0.87
801441-7	1508	0.69	980.2	1.06
801441-8	1708	0.70	1110.2	1.07
801441-8D	1708	0.70	1110.2	1.08
LCS				
801441-9	1679	0.69	1091.35	1.06
801441-10	1334	0.63	867.1	0.97
801461	7400	0.56	4810	0.87
801471	545	0.56	354.25	0.86
801497	545	0.58	354.25	0.89
801435-1	770	0.58	500.5	0.89
* 801435-2	1369	1.11	889.85	1.71

* due to spl matrix ~ caramelized



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

[IM3Plant-WDR-360]

801461

COC Number

TURNAROUND TIME

10 Days

DATE 05/08/12

PAGE 1 OF 1

COMPANY E2				<div style="text-align: center;"> Rec'd 05/08/12 801461 </div>												COMMENTS					
PROJECT NAME PG&E Topock																					
PHONE (530) 229-3303 FAX (530) 339-3303																					
ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612																					
P.O. NUMBER 424973.01.DM TEAM 1																					
SAMPLERS (SIGNATURE) <i>CKnight</i>																					
SAMPLE I.D.				DATE				TIME				DESCRIPTION				Cr6 (218.6) Lab Filtered Total Metals (200.7) Cr, Mn Specific Conductance (120.1) TDS (SM2540C) Turbidity (SM2130)				NUMBER OF CONTAINERS	
SC-700B-WDR-360				05/08/12				14:50				Water				X X X X X X					
																3	TOTAL NUMBER OF CONTAINERS				

ALERT!!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished) <i>Scott O'Donnell</i>	Printed Name <i>Scott O'Donnell</i>	Company/Agency <i>Ch2mhill</i>	Date/Time <i>5-8-12 1515</i>	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/> 3 °C °F
Signature (Received) <i>B. DAYAG</i>	Printed Name <i>B. DAYAG</i>	Company/Agency <i>TLI</i>	Date/Time <i>5-8-12 1515</i>	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Signature (Relinquished) <i>B. Dayag</i>	Printed Name <i>B. DAYAG</i>	Company/Agency <i>TLI</i>	Date/Time <i>5-8-12 2100</i>	SPECIAL REQUIREMENTS:		
Signature (Received) <i>Shabunna</i>	Printed Name <i>Linda</i>	Company/Agency <i>TLI</i>	Date/Time <i>MAY 08 2012 11:00</i>			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time			
Signature (Received)	Printed Name	Company/Agency	Date/Time			

MVG
5/2/12

NRG
5/24/12

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
801312(1-2,4)	<1	>2	4-3-12	BE	NO	YES 15:45
801320(1-2)	<1	<2	5-2-12	BE	YES	3010A
801321(1-3)	↓	↓	↓	↓	↓	↓
801329(1-10)	↓	↓	↓	↓	NO	NO
801330	↓	>2	↓	↓	NO	YES 7:45 AM
801334	>1	<2	↓	↓	YES	3010A
801338(1-2)	<1	>2	↓	↓	↓	↓
801339(1-2)	↓	<2	↓	↓	↓	↓
801339(1-2)	↓	>2	↓	↓	↓	↓
801340(1-22)	↓	<2	↓	↓	↓	↓
801344(1-69)	<1	<2	↓	↓	NO	NO
801345(1-10)	↓	↓	↓	↓	↓	↓
801346(1-48)	↓	>2	↓	↓	↓	YES 14:00
801347(1-18)	↓	>2	↓	↓	↓	↓
801348(1-94)	↓	<2	↓	↓	↓	NO
801349(1-33)	↓	>2	↓	↓	↓	YES 14:00
801350(1-33)	↓	>2	↓	↓	↓	↓
801341(1-2)	↓	<2	↓	↓	↓	NO
801351	>1	↓	↓	↓	YES	3010A
801358(1-9)	<1	>2	↓	↓	NO	YES 15:00
801358	>1	↓	↓	↓	YES	3010A YES
801373(1-3)	>1	>2	5-3-12	BE	YES	3010A
801366(10-12)	<1	>2	↓	↓	NO	YES 7:30
801368	<1	<2	↓	↓	NO	NO
801371(1-2)	↓	↓	↓	↓	↓	↓
801370-4	>1	↓	↓	↓	YES	3010A
801394(1-3)	<1	>2	5-4-12	BE	NO	YES
801330	<1	<2	5-7-12	BE	NO	NO
801412	↓	↓	↓	↓	↓	↓
801421(1-2)	<1	>2	5-8-12	BE	NO	YES 9:00 AM
801428(17-24)	<1	↓	↓	↓	↓	↓
801427	↓	<2	↓	↓	↓	NO
801426	↓	↓	↓	↓	↓	↓
801437(1-2)	↓	>2	↓	↓	↓	YES 15:00
801432	↓	↓	↓	↓	↓	↓
801433-8	↓	↓	↓	↓	↓	↓
801445	>1	>2	5-9-12	BE	YES	3010A
801447	↓	>	↓	↓	↓	↓
801445	>1	<2	5-9-12	BE	YES	3010A
801447	>1	↓	↓	↓	↓	↓
801446	<1	↓	↓	↓	NO	NO
801448	↓	↓	↓	↓	↓	↓
801449	↓	↓	↓	↓	↓	↓
801450	↓	↓	↓	↓	↓	↓
801460	>1	>2	↓	↓	YES	3010A YES 15:00
801461	<1	>2	↓	↓	YES	3010A ↓
801471	<1	>2	5-10-12	BE	NO	YES 8:30
801472(10-12)	↓	↓	↓	↓	↓	↓
801462(1-19)	↓	<2	↓	↓	YES	3010A

5-9-12 BE
5-9-12 BE



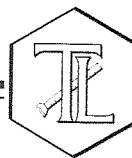
Sample Integrity & Analysis Discrepancy Form

Client: ELLab # 80/461Date Delivered: 05/08/12 Time: 11:00 By: ☐ Mail ☒ Field Service ☐ Client

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

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

June 19, 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-361 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 801606

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-361 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 May 15, 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.


f- Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

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

Laboratory No.: 801606

Date: June 19, 2012

Collected: May 15, 2012

Received: May 15, 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 / Maksim Gorbunov

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

Attention: Shawn Duffy

Laboratory No.: 801606

Date Received: May 15, 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
801606-001	SC-700B-WDR-361	E120.1	NONE	5/15/2012	15:07	EC	7320	umhos/cm	2.00
801606-001	SC-700B-WDR-361	E200.8	NONE	5/15/2012	15:07	Chromium	ND	ug/L	1.0
801606-001	SC-700B-WDR-361	E200.8	NONE	5/15/2012	15:07	Manganese	6.2	ug/L	1.0
801606-001	SC-700B-WDR-361	E218.6	LABFLT	5/15/2012	15:07	Chromium, hexavalent	ND	ug/L	0.20
801606-001	SC-700B-WDR-361	SM2130B	NONE	5/15/2012	15:07	Turbidity	ND	NTU	0.100
801606-001	SC-700B-WDR-361	SM2540C	NONE	5/15/2012	15:07	Total Dissolved Solids	4070	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. 801606

Page 1 of 9

Printed 6/19/2012

Samples Received on 5/15/2012 8:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-361	801606-001	05/15/2012 15:07	Water

Specific Conductivity - EPA 120.1

Batch 05EC12F

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801606-001 Specific Conductivity	umhos/cm	05/16/2012	1.00	0.0950	2.00	7320

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 801606-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7320	7320	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

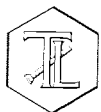
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	704	706	99.7	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	992	998	99.4	90 - 110

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008



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 9

Project Number: 424973.01.DM

Printed 6/19/2012

Chrome VI by EPA 218.6

Batch 05CrH12L

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801606-001 Chromium, Hexavalent	ug/L	05/16/2012 14:21	1.00	0.0250	0.20	ND

Method Blank

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

Duplicate

Lab ID = 801603-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.330	0.351	6.23	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.172	0.200	86.2	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.91	5.00	98.2	90 - 110

Matrix Spike

Lab ID = 801340-012

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.78	1.76(1.00)	102.	90 - 110

Matrix Spike

Lab ID = 801603-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.34	1.35(1.00)	98.6	90 - 110

Matrix Spike

Lab ID = 801603-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.39	1.38(1.00)	101.	90 - 110

Matrix Spike

Lab ID = 801603-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.69	1.68(1.00)	102.	90 - 110

Matrix Spike

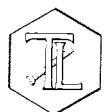
Lab ID = 801603-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.86	1.84(1.00)	102.	90 - 110

Matrix Spike

Lab ID = 801604-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.55	8.59(5.00)	99.2	90 - 110



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

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Matrix Spike						Lab ID = 801604-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.00(1.00)	101.	90 - 110
Matrix Spike						Lab ID = 801604-003
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.89	7.86(5.00)	100.	90 - 110
Matrix Spike						Lab ID = 801604-004
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.55	8.61(5.00)	98.8	90 - 110
Matrix Spike						Lab ID = 801604-005
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.32	9.23(5.00)	102.	90 - 110
Matrix Spike						Lab ID = 801604-006
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.04	1.00(1.00)	104.	90 - 110
Matrix Spike						Lab ID = 801604-007
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.00	1.00(1.00)	100.	90 - 110
Matrix Spike						Lab ID = 801604-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.44	1.46(1.00)	97.6	90 - 110
Matrix Spike						Lab ID = 801606-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.13	1.12(1.00)	101.	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	9.91	10.0	99.1	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.88	10.0	98.8	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.87	10.0	98.7	95 - 105

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 9

Project Number: 424973.01.DM

Printed 6/19/2012

Metals by EPA 200.8, Total

Batch 061512A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801606-001 Chromium	ug/L	06/15/2012 23:37	5.00	0.195	1.0	ND
Manganese	ug/L	06/15/2012 23:37	5.00	0.270	1.0	6.2

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	0.140	0.200	70.0	70 - 130
Manganese	ug/L	1.00	0.154	0.200	76.9	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	96.5	100.	96.5	85 - 115
Manganese	ug/L	5.00	96.9	100.	96.9	85 - 115

Matrix Spike

Lab ID = 801603-001

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	95.0	100.(100.)	95.0	75 - 125

Matrix Spike Duplicate

Lab ID = 801603-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	103.	100.(100.)	103.	75 - 125
Manganese	ug/L	5.00	104.	100.(100.)	104.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.72	10.0	97.2	90 - 110
Manganese	ug/L	1.00	9.41	10.0	94.1	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	9.72	10.0	97.2	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 9

Project Number: 424973.01.DM

Printed 6/19/2012

Total Dissolved Solids by SM 2540 C

Batch 05TDS12G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801606-001 Total Dissolved Solids	mg/L	05/18/2012	1.00	0.400	250.	4070

Method Blank

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

Duplicate

Lab ID = 801604-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	324	312	3.77	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	501	500.	100.	90 - 110

Turbidity by SM 2130 B

Batch 05TUC12L

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801606-001 Turbidity	NTU	05/16/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 801606-001

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	8.46	8.00	106.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.36	8.00	104.	90 - 110



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 6/19/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 
Mona Nassimi
Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C**Calculations**Batch: 05TDS12G
Date Analyzed: 5/22/12

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	110.7304	110.7307	110.7305	0.0002	No	0.0001	1.0	25.0	ND	1
801584-1	100	68.8405	68.8976	68.8976	0.0000	No	0.0571	571.0	25.0	571.0	1
801584-2	100	69.3457	69.403	69.4028	0.0002	No	0.0571	571.0	25.0	571.0	1
801603-1	100	65.9481	65.982	65.982	0.0000	No	0.0339	339.0	25.0	339.0	1
801603-2	100	67.7749	67.8090	67.8089	0.0001	No	0.0340	340.0	25.0	340.0	1
801603-3	100	67.7169	67.7464	67.7462	0.0002	No	0.0293	293.0	25.0	293.0	1
801603-4	100	68.1028	68.128	68.128	0.0000	No	0.0252	252.0	25.0	252.0	1
801604-1	100	68.0327	68.0815	68.0815	0.0000	No	0.0488	488.0	25.0	488.0	1
801604-3	100	67.4834	67.5113	67.5116	0.0002	No	0.0282	282.0	25.0	282.0	1
801604-4	100	74.7342	74.7598	74.7597	0.0001	No	0.0255	255.0	25.0	255.0	1
801604-5	100	67.7871	67.8183	67.8183	0.0000	No	0.0312	312.0	25.0	312.0	1
801604-5D	100	92.0995	92.1319	92.1319	0.0000	No	0.0324	324.0	25.0	324.0	1
LCS	100	110.3321	110.3823	110.3822	0.0001	No	0.0501	501.0	25.0	501.0	1
801604-6	100	100.6770	100.705	100.705	0.0000	No	0.0280	280.0	25.0	280.0	1
801604-7	100	112.9704	112.9987	112.9987	0.0000	No	0.0283	283.0	25.0	283.0	1
801604-8	100	110.3667	110.4185	110.4182	0.0003	No	0.0515	515.0	25.0	515.0	1
801606	10	47.9638	48.0045	48.0045	0.0000	No	0.0407	4070.0	250.0	4070.0	1
801652-1	50	47.9544	48.0101	48.01	0.0001	No	0.0556	1112.0	50.0	1112.0	1
801652-2	50	46.9976	47.0426	47.0424	0.0002	No	0.0448	896.0	50.0	896.0	1
801652-3	50	51.0745	51.1046	51.1043	0.0003	No	0.0298	596.0	50.0	596.0	1
801652-5	100	115.2361	115.2962	115.2959	0.0003	No	0.0598	598.0	25.0	598.0	1
801652-6	100	103.4165	103.4663	103.4663	0.0000	No	0.0498	498.0	25.0	498.0	1
801653	100	104.2370	104.2648	104.2648	0.0000	No	0.0278	278.0	25.0	278.0	1

Calculation as follows:

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)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	501	500	100.2%	90-110%	Yes
LCS2					

LCS Recovery

$$P = \left(\frac{LC}{LT} \right) \times 100$$

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801604-5	0.0312	0.0324	1.9%	≤5%	Yes

Duplicate Determination Difference

$$\% \text{ Difference} = \frac{|A - B|}{C} \times 100$$

$$\text{where } C = \frac{A + B}{2}$$

A = Weight of the first sample in (g).

B = Weight of the second sample in (g).

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name


Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS12G
Date Analyzed: 5/22/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
801584-1	926	0.62	601.9	0.95
801584-2	938	0.61	609.7	0.94
801603-1	521	0.65	338.65	1.00
801603-2	521	0.65	338.65	1.00
801603-3	467	0.63	303.55	0.97
801603-4	416	0.61	270.4	0.93
801604-1	821	0.59	533.65	0.91
801604-3	477	0.59	310.05	0.91
801604-4	477	0.53	310.05	0.82
801604-5	530	0.59	344.5	0.91
801604-5D	530	0.61	344.5	0.94
LCS				
801604-6	421	0.67	273.65	1.02
801604-7	420	0.67	273	1.04
801604-8	795	0.65	516.75	1.00
801606	7320	0.56	4758	0.86
801652-1	1664	0.67	1081.6	1.03
801652-2	1553	0.58	1009.45	0.89
801652-3	1006	0.59	653.9	0.91
801652-5	976	0.61	634.4	0.94
801652-6	820	0.61	533	0.93
801653	432	0.64	280.8	0.99






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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-361]

COC Number

TURNAROUND TIME 10 Days
DATE 05/15/12 PAGE 1 OF 1

801606

COMPANY	E2											COMMENTS		
PROJECT NAME	PG&E Topock													
PHONE	(530) 229-3303	FAX	(530) 339-3303											
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612													
P.O. NUMBER	424973.01.DM	TEAM	1											
SAMPLERS (SIGNATURE)	C. Knight													
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6 (2186)	Lab Filtered	Total Metals (200.7)	Cr, Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)	NUMBER OF CONTAINERS			
SC-700B-WDR-361	05/15/12	15:07	Water	x	x	x	x		x		3	pH = 6 (200.7)		
											3	TOTAL NUMBER OF CONTAINERS		

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/>
Chris Knight	Chris Knight	CH2M HILL	5-15-12 15:17			3.7 °C
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
B. Dayag	B. DAYAG	TLI	5-15-12 15:17			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:		
B. Dayag	B. DAYAG	TLI	5-15-12 20:30			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			
Linda	Shabunina	TLI	5/15/12 20:30			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

[illegible]

04/17/12

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
801497	<1	<2	5-10-12	BE	YES	3010A
801488		>2			NO	YES 10:15
801500	>1	<2			YES	3010A
801503(1-10)	<1	<2			NO	NO
801504(1-10)						
801505(1-10)						
801506(1-143)						
801508	<1	<2	5-11-12	BE	NO	NO
801513	>1				YES	3010A
801525	<1					
801527(1-151)		<2			NO	NO
801536(1-21)	<1	<2	5-14-12	BE	NO	NO
801537(1-21)						
801517						
801528(3-12)					YES	3010A
801543	<1	<2			NO	NO
801546(1-4)					YES	3010A
801547						
801548(1-3)		>2				YES 15:00
801554		<2			NO	NO
801555						
801561(1-2,4)	<1	>2	5-15-12	BE	NO	YES 14:00
801582		>2				14:00
801578	>1	<2			YES	3010A
801580(1-37)	<1	>2			NO	YES 20:00
801581(1-104)		<2			NO	NO
T 801603(1-4)	<1	<2	5-16-12	BE	YES	3010A
D 801603(1-4)						
801605(1-11)						
801604(133-8)						
T 801606		>2				
801591		<2			NO	NO
801643	<1	<2	5-17-12	BE	NO	NO
801652(1-3)	<1				YES	3010A
801653(1-10)						
801641(11-13)					NO	NO
801646(1-331)		>2				YES 18:30
801647(1-15)						
801647(1-54)						19:00
801649(1-54)						
801669(1-9)						
801675(1-182)						NO
801676(1-10)						
801677(1-10)						



Sample Integrity & Analysis Discrepancy Form

Client: E2

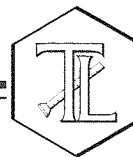
Lab # SN606

Date Delivered: 05/15/12 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)? 3°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☒ 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: [Signature]

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June 17, 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-362 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 801750

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-362 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 May 22, 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.

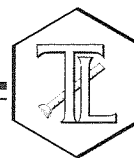
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

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

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Laboratory No.: 801750

Date: June 17, 2012

Collected: May 22, 2012

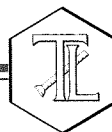
Received: May 22, 2012

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 / Maksim Gorbunov

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

Laboratory No.: 801750
Date Received: May 22, 2012

Attention: Shawn Duffy

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801750-001	SC-700B-WDR-362	E120.1	NONE	5/22/2012	13:30	EC	7420	umhos/cm	2.00
801750-001	SC-700B-WDR-362	E200.8	NONE	5/22/2012	13:30	Chromium	ND	ug/L	1.0
801750-001	SC-700B-WDR-362	E200.8	NONE	5/22/2012	13:30	Manganese	3.1	ug/L	1.0
801750-001	SC-700B-WDR-362	E218.6	LABFLT	5/22/2012	13:30	Chromium, hexavalent	ND	ug/L	1.0
801750-001	SC-700B-WDR-362	SM2130B	NONE	5/22/2012	13:30	Turbidity	ND	NTU	0.100
801750-001	SC-700B-WDR-362	SM2540C	NONE	5/22/2012	13:30	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. 801750

Page 1 of 9

Printed 6/17/2012

Samples Received on 5/22/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-362	801750-001	05/22/2012 13:30	Water

Specific Conductivity - EPA 120.1

Batch 05EC12H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801750-001 Specific Conductivity	umhos/cm	05/25/2012	1.00	0.0950	2.00	7420

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 801753-009

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	901	901	0.00	0 - 10

Duplicate

Lab ID = 801775-005

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	908	908	0.00	0 - 10

Lab Control Sample

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

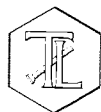
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	706	706	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	984	998	98.6	90 - 110

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

008


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
Page 3 of 9
Project Number: 424973.01.DM
Printed 6/17/2012
Chrome VI by EPA 218.6

Batch 05CrH12R

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801750-001 Chromium, Hexavalent	ug/L	05/24/2012 18:13	5.00	0.130	1.0	ND

Method Blank

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

Duplicate

Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0360	0.0419	15.1	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.196	0.200	98.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.89	5.00	97.8	90 - 110

Matrix Spike

Lab ID = 801750-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.56	5.00(5.00)	91.3	90 - 110

Matrix Spike

Lab ID = 801750-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.06(1.00)	95.6	90 - 110

Matrix Spike

Lab ID = 801753-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.00	1.04(1.00)	96.3	90 - 110

Matrix Spike

Lab ID = 801753-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	01000	1.04(1.00)	96.4	90 - 110

Matrix Spike

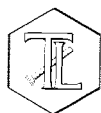
Lab ID = 801753-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.04(1.00)	102.	90 - 110

Matrix Spike

Lab ID = 801753-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.04(1.00)	97.3	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 9

Project Number: 424973.01.DM

Printed 6/17/2012

Metals by EPA 200.8, Total

Batch 061312A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801750-001 Chromium	ug/L	06/13/2012 15:34	5.00	0.195	1.0	ND
Manganese	ug/L	06/13/2012 15:34	5.00	0.270	1.0	3.1

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	0.206	0.200	103.	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	104.	100.	104.	85 - 115
Manganese	ug/L	5.00	101.	100.	101.	85 - 115

Matrix Spike

Lab ID = 801750-001

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	104.	103.(100.)	100.	75 - 125

Matrix Spike Duplicate

Lab ID = 801750-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	105.	100.(100.)	105.	75 - 125
Manganese	ug/L	5.00	106.	103.(100.)	103.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.80	10.0	98.0	90 - 110
Manganese	ug/L	1.00	9.66	10.0	96.6	90 - 110

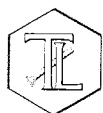
MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	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	10.3	10.0	103.	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 9

Project Number: 424973.01.DM

Printed 6/17/2012

Total Dissolved Solids by SM 2540 C

Batch 05TDS12I

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801750-001 Total Dissolved Solids	mg/L	05/24/2012	1.00	0.400	250.	4230

Method Blank

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

Duplicate

Lab ID = 801750-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4210	4230	0.474	0 - 5

Lab Control Sample

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

Turbidity by SM 2130 B

Batch 05TUC12P

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801750-001 Turbidity	NTU	05/23/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 801750-001

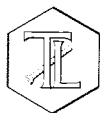
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.51	8.00	106.	90 - 110

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.69	8.00	109.	90 - 110



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 6/17/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 

Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 05TDS12I

Date Analyzed: 5/28/12

[illegible]

Calculation as follows:

Filterable residue (TDS), mg/L =

Where:

A = weight of dish + residue in grams.
B = weight of dish in grams.
C = mL of sample filtered.

$$\left(\frac{A - B}{C} \right) \times 10^6$$

RL= reporting limit.
ND = not detected (below the reporting limit)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	496	500	99.2%	90-110%	Yes
LCSD					

LCS Recovery

$$P = \left(\frac{LC}{LT} \right) \times 100$$

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801750	0.0423	0.0421	0.2%	≤5%	Yes

Duplicate Determination Difference

$$\% \text{ Difference} = \frac{|A - B - C|}{C} \times 100$$

where $C = \frac{A+B}{2}$

A = Weight of the first sample in (g).

B = Weight of the second sample in (g).

C = Average weight in (g).

Jenny T.

Analyst Printed Name


Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS12I
Date Analyzed: 5/28/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
801715	1207	0.72	784.55	1.11
801747-1	795	0.60	516.75	0.93
801747-2	942	0.62	612.3	0.95
801747-3	1214	0.60	789.1	0.93
801747-4	555	0.61	360.75	0.95
801747-5	872	0.58	566.8	0.90
801747-6	755	0.65	490.75	0.99
801747-7	644	0.59	418.6	0.90
801747-8	1218	0.60	791.7	0.93
801750	7450	0.57	4842.5	0.87
801750D	7450	0.57	4842.5	0.87
LCS				
801751-1	7580	0.57	4927	0.88
801751-2	7640	0.60	4966	0.93
801751-3	7600	0.56	4940	0.85
801799	1468	0.61	954.2	0.94
801814	2600	0.63	1690	0.96




S 801750



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(714)730-6239 FAX: (714) 730-6462
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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-362]

80/750

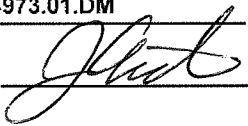
COC Number

TURNAROUND TIME

10 Days

DATE 05/22/12

PAGE 1 OF 1

COMPANY		E2		<div style="display: flex; justify-content: space-between;"> <div> <p>PROJECT NAME PG&E Topock</p> <p>PHONE (530) 229-3303 FAX (530) 339-3303</p> <p>ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612</p> <p>P.O. NUMBER 424973.01.DM TEAM 1</p> <p>SAMPLERS (SIGNATURE) </p> </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</div> </div>																	
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															
SAMPLE I.D.				DATE		TIME		DESCRIPTION		COMMENTS											
SC-700B-WDR-362				05/22/12		1330		Water		<div style="display: flex; justify-content: space-between;"> <div> <p>Cr6 (218.6) Lab Filtered</p> <p>Total Metals (200.7) Cr, Mn</p> <p>Specific Conductance (120.1)</p> <p>TDS (SM2540C)</p> <p>Turbidity (SM2130)</p> </div> <div> <p>3</p> <p>pu = 6 (see 7)</p> </div> </div>											
										TOTAL NUMBER OF CONTAINERS											

ALERT!!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL <input checked="" type="checkbox"/> WARM <input type="checkbox"/>
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time		
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time		

040

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
5/23/12	801747-1	9.5	N/A	N/A	N/A	Gw
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
5/23/12	801750	7	2 mL	9.5	10:30 Am	Gw
5/23/12	801753-1	9.5	N/A	N/A	N/A	Gw
	-2					
	-3					
	-4					
	-5					
	-6					
	-7					
	-8					
	-9					
	-10					
	-11					
	-12					
	-13					
	-14					

Qw 5/3=112

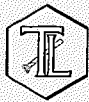
Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
801714	<1	<2	5-22-12	BE	No	No
801715 (D9T)	↓	↓	↓	↓	yes	3010 A
801725	↓	↓	↓	↓	No	No
801726	↓	↓	↓	↓	↓	↓
801727	↓	↓	↓	↓	↓	↓
801728	↓	↓	↓	↓	↓	↓
801729	>1	↓	↓	↓	yes	3010 A
801730	↓	↓	↓	↓	↓	↓
801731	↓	↓	↓	↓	↓	↓
801747 (4-8)	<1	<2	5-23-12	BE	XCS	3010 A
801750	↓	>2	↓	↓	↓	yes 10:00
801751 (6-3)	↓	↓	↓	↓	↓	↓
801752 (1-4)	↓	<2	↓	↓	↓	↓
801753 (1-14)	↓	↓	↓	↓	↓	↓
801754 (1-11)	<1	<2	5-24-12	BE	yes	3010 A
801757 (1-3)	↓	>2	↓	↓	No	XCS 11:00 AM
801764 (10-12)	↓	↓	↓	↓	↓	↓
801767	↓	<2	↓	↓	↓	No
801790 (1-10)	↓	↓	↓	↓	↓	↓
801791 (1-10)	↓	↓	↓	↓	↓	↓
801792 (1-10)	↓	↓	↓	↓	↓	↓
801793 (1-72)	↓	>2	↓	↓	↓	XCS 5-27-12 18
801715	<1	>2	3/25/12	ht	-	yes 5:30 pm
801747 (1-7)	↓	↓	↓	↓	↓	↓
801799	<1	>2	5/29/12	BE	No	yes 18:00
801818	<1	<2	↓	↓	↓	No
801828	↓	↓	↓	↓	↓	↓
801827	↓	↓	↓	↓	↓	↓
801839 (10)	<1	<2	5-30-12	BE	yes	3010 A
801840 (T)	↓	>2	↓	↓	↓	yes 14:00
801841 (1-2)	>1	<2	↓	↓	↓	↓
801845 (1-12)	<1	>2	↓	↓	No	yes 18:30
801848	>1	<2	↓	↓	yes	3010 A
801849 (1-12)	<1	>2	↓	↓	No	yes 18:30
801860 (1-3)	<1	>2	5/31/12	KK	No	yes 10 pm
801871	>1	<2	5/31/12	BE	yes	3010 A
801883 (1-5)	<1	<2	6-1-12	BE	No	No
801892	<1	<2	6-5-12	BE	No	No
801893	↓	↓	↓	↓	↓	↓
801898 (1-2)	↓	>2	↓	↓	↓	XCS 11:00
801910-6	↓	↓	↓	↓	↓	↓
801907	↓	<2	↓	↓	XCS	3010 A
801908	↓	↓	↓	↓	↓	↓
801909 (1-3)	↓	↓	↓	↓	↓	↓
801912 (1-10)	↓	↓	↓	↓	No	No
801913 (1-10)	↓	↓	↓	↓	↓	↓
801914	>1	<2	↓	↓	yes	3010 A
801915	<1	↓	↓	↓	No	No
801916	↓	↓	↓	↓	↓	↓

need F./t

using HCl per client request

BE 5-31-12



Sample Integrity & Analysis Discrepancy Form

Client: EA

Lab # SP1750

Date Delivered: 05/22/12 Time: 2:30 By: ☐ Mail ☒ Field Service ☐ Client

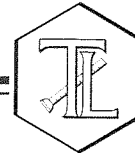
1. Was a Chain of Custody received and signed? ☒ Yes ☐ No ☐ N/A
2. Does Customer require an acknowledgement of the COC? ☐ Yes ☐ No ☒ N/A
3. Are there any special requirements or notes on the COC? ☐ Yes ☐ No ☒ N/A
4. If a letter was sent with the COC, does it match the COC? ☐ Yes ☐ No ☒ N/A
5. Were all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

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14201 FRANKLIN AVENUE
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www.truesdail.com

June 19, 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-363 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 801840

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-363 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 May 29, 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.

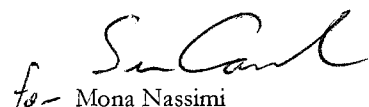
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

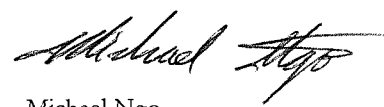
The sample duplicate for Total Dissolved Solids by SM 2540C had a relative percent difference of 5.79%, which exceeded the acceptance limits of 0 – 5%. Mr. Duffy was notified and accepted the data.

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
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Laboratory No.: 801840

Date: June 19, 2012

Collected: May 29, 2012

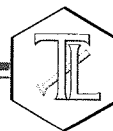
Received: May 29, 2012

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 / Maksim Gorbunov

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

Attention: Shawn Duffy

Laboratory No.: 801840
Date Received: May 29, 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
801840-001	SC-700B-WDR-363	E120.1	NONE	5/29/2012	14:00	EC	7830	umhos/cm	2.00
801840-001	SC-700B-WDR-363	E200.8	NONE	5/29/2012	14:00	Chromium	ND	ug/L	1.0
801840-001	SC-700B-WDR-363	E200.8	NONE	5/29/2012	14:00	Manganese	3.0	ug/L	1.0
801840-001	SC-700B-WDR-363	E218.6	LABFLT	5/29/2012	14:00	Chromium, hexavalent	0.27	ug/L	0.20
801840-001	SC-700B-WDR-363	SM2130B	NONE	5/29/2012	14:00	Turbidity	ND	NTU	0.100
801840-001	SC-700B-WDR-363	SM2540C	NONE	5/29/2012	14:00	Total Dissolved Solids	4530	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

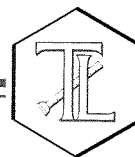
Note: The following "Significant Figures" rule has been applied to all results:
Results below 0.01ppm will have two (2) significant figures.
Result above or equal to 0.01ppm will have three (3) significant figures.
Quality Control data will always have three (3) significant figures.

005

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

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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. 801840

Page 1 of 8

Printed 6/19/2012

Samples Received on 5/29/2012 9:00:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-363	801840-001	05/29/2012 14:00	Water

Specific Conductivity - EPA 120.1

Batch 05EC12K

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801840-001 Specific Conductivity	umhos/cm	05/31/2012	1.00	0.0950	2.00	7830

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 801840-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7820	7830	0.128	0 - 10

Lab Control Sample

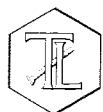
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	712	706	101.	90 - 110

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	990.	998	99.2	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 8

Project Number: 424973.01.DM

Printed 6/19/2012

Chrome VI by EPA 218.6

Batch 05CrH12U

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801840-001 Chromium, Hexavalent	ug/L	05/30/2012 15:46	1.00	0.0250	0.20	0.27

Method Blank

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

Duplicate

Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.0420	0.0458	8.66	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.194	0.200	97.0	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.85	5.00	97.1	90 - 110

Matrix Spike

Lab ID = 801775-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.986	1.04(1.00)	94.0	90 - 110

Matrix Spike

Lab ID = 801775-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.980	1.04(1.00)	94.3	90 - 110

Matrix Spike

Lab ID = 801775-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.00	1.03(1.00)	97.5	90 - 110

Matrix Spike

Lab ID = 801775-004

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.00	1.03(1.00)	97.2	90 - 110

Matrix Spike

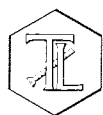
Lab ID = 801775-005

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.992	1.04(1.00)	95.2	90 - 110

Matrix Spike

Lab ID = 801775-006

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.04(1.00)	96.3	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 6/19/2012

Matrix Spike						Lab ID = 801775-007
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.999	1.04(1.00)	95.9	90 - 110
Matrix Spike						Lab ID = 801775-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.04(1.00)	97.0	90 - 110
Matrix Spike						Lab ID = 801775-009
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.01	1.04(1.00)	97.6	90 - 110
Matrix Spike						Lab ID = 801775-010
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.993	1.03(1.00)	96.4	90 - 110
Matrix Spike						Lab ID = 801775-011
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.994	1.04(1.00)	95.4	90 - 110
Matrix Spike						Lab ID = 801839-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.837	1.00(1.00)	83.7	90 - 110
Matrix Spike						Lab ID = 801839-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	5.00	4.74	5.00(5.00)	94.7	90 - 110
Matrix Spike						Lab ID = 801840-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.26	1.27(1.00)	99.0	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.87	5.00	97.4	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100.	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100.	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.92	10.0	99.2	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 6/19/2012

Metals by EPA 200.8, Total

Batch 061312A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801840-001 Chromium	ug/L	06/13/2012 16:17	5.00	0.195	1.0	ND
Manganese	ug/L	06/13/2012 16:17	5.00	0.270	1.0	3.0

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	0.206	0.200	103.	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	104.	100.	104.	85 - 115
Manganese	ug/L	5.00	101.	100.	101.	85 - 115

Matrix Spike

Lab ID = 801750-001

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	104.	103.(100.)	100.	75 - 125

Matrix Spike Duplicate

Lab ID = 801750-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	105.	100.(100.)	105.	75 - 125
Manganese	ug/L	5.00	106.	103.(100.)	103.	75 - 125

MRCSS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.80	10.0	98.0	90 - 110
Manganese	ug/L	1.00	9.66	10.0	96.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	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	10.3	10.0	103.	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 7 of 8

Project Number: 424973.01.DM

Printed 6/19/2012

Total Dissolved Solids by SM 2540 C

Batch 05TDS12J

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801840-001 Total Dissolved Solids	mg/L	05/30/2012	1.00	0.400	250.	4530

Method Blank

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

Duplicate

Lab ID = 801840-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4800	4530	5.79	0 - 5

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Dissolved Solids	mg/L	1.00	499	500.	99.8	90 - 110

Turbidity by SM 2130 B

Batch 05TUC12T

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801840-001 Turbidity	NTU	05/30/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 801840-001

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	8.50	8.00	106.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.28	8.00	104.	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 8

Project Number: 424973.01.DM

Printed 6/19/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for 

Mona Nassimi

Manager, Analytical Services



E2 SC

Calculations

Batch: 05TDS12J

Date Analyzed: 5/31/12

[illegible]

Calculation as follows:

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)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	499	500	99.8%	90-110%	Yes
LCSD					

LCS Recovery

$$P = \left(\frac{LC'}{LT'} \right) \times 100$$

P = Percent recovery.

LC = Measured LCS value (ppm).

 LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
804750	0.0453	0.048	2.9%	≤5%	Yes

Duplicate Determination Difference

$$\% \text{ Difference} = \frac{|A - B - C|}{C} \times 100$$

where $C = \frac{A+B}{2}$

A = Weight of the first sample in (g)

B = Weight of the second sample in (g).

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

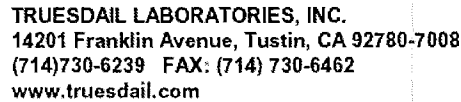
Hope T.

Reviewer Printed Name

Reviewer Signature _____

TDS/EC CHECK

[illegible]



[IM3Plant-WDR-363]

801840

PAGE 1 OF 1

**For Sample Conditions
See Form Attached**

ALERT!!
Level III QC

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	5-29-12 1515	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/>	4.80 °C
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	5-29-12 1515	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	5-29-12 2100	SPECIAL REQUIREMENTS:			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	5/29/12 1:00				
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)
801714	<1	<2	5-22-12	BE	NO	NO
801715 (09T)	↓	↓	↓	↓	yes	3010A
801725	↓	↓	↓	↓	NO	NO
801726	↓	↓	↓	↓	↓	↓
801727	↓	↓	↓	↓	↓	↓
801728	↓	↓	↓	↓	↓	↓
801729	>1	↓	↓	↓	yes	3010A
801730	↓	↓	↓	↓	↓	↓
801731	↓	↓	↓	↓	↓	↓
801747 (4-8) (1-7)	<1	<2	5-23-12	BE	XCS	3010A
801750	↓	>2	↓	↓	↓	yes 10:00
801751 (6-3)	↓	↓	↓	↓	↓	↓
801752 (36-7)	↓	<2	↓	↓	↓	↓
801753 (1-14)	↓	↓	↓	↓	↓	↓
801775 (1-11)	<1	<2	5-24-12	BE	XCS	3010A
801737 (1-3)	↓	>2	↓	↓	NO	XCS 11:00 AM
801764 (10-12)	↓	↓	↓	↓	↓	"
801767	↓	<2	↓	↓	↓	NO
801790 (1-10)	↓	↓	↓	↓	↓	↓
801791 (1-10)	↓	↓	↓	↓	↓	↓
801792 (1-10)	↓	↓	↓	↓	↓	↓
801793 (4-72)	↓	>2	↓	↓	↓	XCS 5-27-12
801715	<1	>2	3/25/12	BE	-	yes 5:30 pm
801747 (1-7)	↓	↓	↓	↓	↓	↓
801799	<1	>2	5/29/12	BE	NO	XCS 18:00
801818	<1	<2	↓	↓	↓	NO
801828	↓	↓	↓	↓	↓	↓
801827	↓	↓	↓	↓	↓	↓
801839 (0)	<1	<2	5-30-12	BE	XCS	3010A
801840 (T)	↓	>2	↓	↓	↓	yes 14:00
801841 (1-2)	>1	<2	↓	↓	↓	↓
801845 (1-12)	<1	>2	↓	↓	NO	XCS 18:30
801848	>1	<2	↓	↓	yes	3010A
801849 (1-12)	<1	>2	↓	↓	NO	XCS 18:30
801860 (1-3)	<1	>2	5/31/12	KK	NO	yes 10pm
801871	>1	<2	5-31-12	BE	yes	3010A
801883 (1-5)	<1	<2	6-1-12	BE	NO	NO
801892	<1	<2	6-5-12	BE	NO	NO
801893	↓	↓	↓	↓	↓	↓
801898 (1-2)	↓	>2	↓	↓	↓	XCS 11:00
801900-6	↓	↓	↓	↓	↓	↓
801907	↓	<2	↓	↓	XCS	3010A
801908	↓	↓	↓	↓	↓	↓
801909 (1-3)	↓	↓	↓	↓	↓	↓
801912 (1-10)	↓	↓	↓	↓	NO	NO
801913 (1-10)	↓	↓	↓	↓	↓	↓
801914	>1	<2	↓	↓	yes	3010A
801915	<1	↓	↓	↓	NO	NO
801916	↓	↓	↓	↓	↓	↓

need P./t

using HCl per client request

BE 5-31-12



Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 801840

Date Delivered: 05/29/12 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)? 4.8°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. Shabazz

Analytical Bench Log Book

WDR pH Results

Warning: If the 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.

	Date of Sample	Time of Sample	Date of Analysis	Time of Analysis	PH Meter Model #	Date of Calibration	Time of Calibration	Slope of the Curve	Analyst Name (for the pH result)	pH Result
SC-700B	5-1-12	15:01	5-1-12	15:11	#1 METEK	5-1-12	0100	-56.5		

Notes:

SC-700B	5-1-12	15:09	5-1-12	15:15	#1 METEK	5-1-12	0100	-56.3	C. Knight	7.8
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Notes:

SC-700B	5-8-12	14:56	5-8-12	15:05	METER#1	5-8-12	0100	-56.1	C. Knight	7.3
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Notes:

SC-700B	5-15-12	15:07	5-8-12	15:13	METER#1	5-15-12	0100	-55.7	C. Knight	7.3
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Notes:

SC-700B	5-22-12	1330	5-22-12		METER#1	5-15-12	0100	-55.3 (D)	A. DE	7.2
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Notes:

SC-700B	5-29-12	1400	5-29-12	1405	METER#1	5-29-12	0100	-55.8	How Phelps	7.3
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Notes:

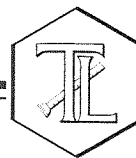
Notes:

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

IN TRANSPOSED FROM WORKSHEET INCORRECTLY JA

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

June 28, 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-364 PROJECT, GROUNDWATER
MONITORING,
TLI NO.: 801944

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-364 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 June 5, 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.


The total and total dissolved metals were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

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

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

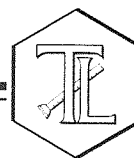
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


for Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



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

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

Attention: Shawn Duffy

Sample: Two (2) Groundwaters

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

Laboratory No.: 801944

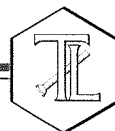
Date: June 28, 2012

Collected: June 5, 2012

Received: June 5, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2320B	Total Alkalinity	Melissa Scharfe
SM 4500-Si D	Soluble Silica	Jenny Tankunakorn
SM 4500-P B,E	Total Phosphorus	Jenny Tankunakorn
SM 5310C	Total Organic Carbon	Jenny Tankunakorn
SM 2130B	Turbidity	Gautam Savani
EPA 300.0	Anions	Giawad Ghenniwa
SM 4500-NH3 D	Ammonia	Maria Mangarova
SM 4500-NO2 B	Nitrite as N	Jenny Tankunakorn
EPA 200.7	Metals by ICP	Ethel Suico
EPA 200.8	Metals by ICP/MS	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	George Wahba



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

Laboratory No.: 801944
Date Received: June 5, 2012

Attention: Shawn Duffy

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

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801944-001	SC-700B-WDR-364	E120.1	NONE	6/5/2012	10:30	EC	7440	umhos/cm	2.00
801944-001	SC-700B-WDR-364	E200.7	NONE	6/5/2012	10:30	Aluminum	ND	ug/L	50.0
801944-001	SC-700B-WDR-364	E200.7	NONE	6/5/2012	10:30	BORON	978	ug/L	200
801944-001	SC-700B-WDR-364	E200.7	NONE	6/5/2012	10:30	Iron	ND	ug/L	20.0
801944-001	SC-700B-WDR-364	E200.7	NONE	6/5/2012	10:30	Molybdenum	19.3	ug/L	10.0
801944-001	SC-700B-WDR-364	E200.7	NONE	6/5/2012	10:30	Zinc	ND	ug/L	10.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Antimony	ND	ug/L	5.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Arsenic	ND	ug/L	1.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Barium	11.4	ug/L	10.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Chromium	ND	ug/L	1.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Copper	ND	ug/L	5.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Lead	ND	ug/L	10.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Manganese	1.7	ug/L	1.0
801944-001	SC-700B-WDR-364	E200.8	NONE	6/5/2012	10:30	Nickel	ND	ug/L	10.0
801944-001	SC-700B-WDR-364	E218.6	LABFLT	6/5/2012	10:30	Chromium, hexavalent	ND	ug/L	0.20
801944-001	SC-700B-WDR-364	E300	NONE	6/5/2012	10:30	Fluoride	2.19	mg/L	0.500
801944-001	SC-700B-WDR-364	E300	NONE	6/5/2012	10:30	Nitrate as N	3.17	mg/L	1.00
801944-001	SC-700B-WDR-364	E300	NONE	6/5/2012	10:30	Sulfate	506	mg/L	25.0
801944-001	SC-700B-WDR-364	SM2130B	NONE	6/5/2012	10:30	Turbidity	ND	NTU	0.100
801944-001	SC-700B-WDR-364	SM2540C	NONE	6/5/2012	10:30	Total Dissolved Solids	4090	mg/L	250
801944-001	SC-700B-WDR-364	SM4500NH3D	NONE	6/5/2012	10:30	Ammonia-N	ND	mg/L	0.500
801944-001	SC-700B-WDR-364	SM4500NO2B	NONE	6/5/2012	10:30	Nitrite as N	ND	mg/L	0.0050

005



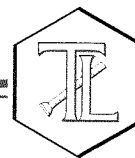
Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801944-002	SC-100B-WDR-364	E120.1	NONE	6/5/2012	10:30	EC	7700	umhos/cm	2.00
801944-002	SC-100B-WDR-364	E200.7	NONE	6/5/2012	10:30	Aluminum	ND	ug/L	50.0
801944-002	SC-100B-WDR-364	E200.7	NONE	6/5/2012	10:30	BORON	997	ug/L	200
801944-002	SC-100B-WDR-364	E200.7	NONE	6/5/2012	10:30	Iron	ND	ug/L	20.0
801944-002	SC-100B-WDR-364	E200.7	LABFLT	6/5/2012	10:30	Iron	ND	ug/L	20.0
801944-002	SC-100B-WDR-364	E200.7	NONE	6/5/2012	10:30	Molybdenum	24.2	ug/L	10.0
801944-002	SC-100B-WDR-364	E200.7	NONE	6/5/2012	10:30	Zinc	ND	ug/L	10.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Antimony	ND	ug/L	5.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Arsenic	3.4	ug/L	1.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Barium	25.7	ug/L	10.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Chromium	747	ug/L	1.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Copper	ND	ug/L	5.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Lead	ND	ug/L	10.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Manganese	4.9	ug/L	1.0
801944-002	SC-100B-WDR-364	E200.8	LABFLT	6/5/2012	10:30	Manganese	4.8	ug/L	1.0
801944-002	SC-100B-WDR-364	E200.8	NONE	6/5/2012	10:30	Nickel	ND	ug/L	10.0
801944-002	SC-100B-WDR-364	E218.6	LABFLT	6/5/2012	10:30	Chromium, hexavalent	752	ug/L	10.0
801944-002	SC-100B-WDR-364	E300	NONE	6/5/2012	10:30	Fluoride	2.64	mg/L	0.500
801944-002	SC-100B-WDR-364	E300	NONE	6/5/2012	10:30	Nitrate as N	2.99	mg/L	1.00
801944-002	SC-100B-WDR-364	E300	NONE	6/5/2012	10:30	Sulfate	531	mg/L	25.0
801944-002	SC-100B-WDR-364	SM2130B	NONE	6/5/2012	10:30	Turbidity	ND	NTU	0.100
801944-002	SC-100B-WDR-364	SM2320B	NONE	6/5/2012	10:30	Alkalinity	135	mg/L	5.00
801944-002	SC-100B-WDR-364	SM2320B	NONE	6/5/2012	10:30	Bicarbonate	135	mg/L	5.00
801944-002	SC-100B-WDR-364	SM2320B	NONE	6/5/2012	10:30	Carbonate	ND	mg/L	5.00
801944-002	SC-100B-WDR-364	SM2540C	NONE	6/5/2012	10:30	Total Dissolved Solids	4490	mg/L	250
801944-002	SC-100B-WDR-364	SM4500NH3D	NONE	6/5/2012	10:30	Ammonia-N	ND	mg/L	0.500
801944-002	SC-100B-WDR-364	SM4500NO2B	NONE	6/5/2012	10:30	Nitrite as N	ND	mg/L	0.0050
801944-002	SC-100B-WDR-364	SM4500-PB_E	NONE	6/5/2012	10:30	Total Phosphorous-P	ND	mg/L	0.0200
801944-002	SC-100B-WDR-364	SM4500SI	LABFLT	6/5/2012	10:30	Soluble Silica	20.3	mg/L	1.00
801944-002	SC-100B-WDR-364	SM5310C	NONE	6/5/2012	10:30	Total Organic Carbon	0.426	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.

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. 801944

Page 1 of 30

Printed 6/28/2012

Samples Received on 6/5/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-364	801944-001	06/05/2012 10:30	Water
SC-100B-WDR-364	801944-002	06/05/2012 10:30	Water

Anions By I.C. - EPA 300.0

Batch 06AN12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-001 Fluoride	mg/L	06/06/2012 10:36	5.00	0.155	0.500	2.19
Nitrate as Nitrogen	mg/L	06/06/2012 10:36	5.00	0.135	1.00	3.17
Sulfate	mg/L	06/06/2012 13:50	50.0	5.70	25.0	506.
801944-002 Fluoride	mg/L	06/06/2012 10:48	5.00	0.155	0.500	2.64
Nitrate as Nitrogen	mg/L	06/06/2012 10:48	5.00	0.135	1.00	2.99
Sulfate	mg/L	06/06/2012 14:01	50.0	5.70	25.0	531.

Method Blank

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

Duplicate

Lab ID = 801944-002

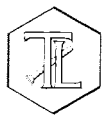
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Fluoride	mg/L	5.00	2.66	2.64	0.604	0 - 20
Nitrate as Nitrogen	mg/L	5.00	3.05	2.99	2.08	0 - 20

Duplicate

Lab ID = 801949-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chloride	mg/L	100	266.	274	2.93	0 - 20
Sulfate	mg/L	100	144.	152	5.16	0 - 20

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.91	4.00	97.7	90 - 110
Fluoride	mg/L	1.00	4.08	4.00	102.	90 - 110
Sulfate	mg/L	1.00	19.9	20.0	99.4	90 - 110
Nitrate as Nitrogen	mg/L	1.00	3.97	4.00	99.2	90 - 110

Matrix Spike

Lab ID = 801944-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Fluoride	mg/L	5.00	23.8	22.6(20.0)	106.	85 - 115
Nitrate as Nitrogen	mg/L	5.00	24.4	23.0(20.0)	107.	85 - 115

Matrix Spike

Lab ID = 801949-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chloride	mg/L	100	651.	674(400.)	94.3	85 - 115
Sulfate	mg/L	100	376.	352(200.)	112.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	3.95	4.00	98.8	90 - 110
Fluoride	mg/L	1.00	4.08	4.00	102.	90 - 110
Sulfate	mg/L	1.00	19.9	20.0	99.3	90 - 110
Nitrate as Nitrogen	mg/L	1.00	3.98	4.00	99.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.98	3.00	99.3	90 - 110

MRCVS - Primary

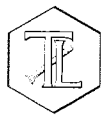
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chloride	mg/L	1.00	2.98	3.00	99.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Fluoride	mg/L	1.00	3.16	3.00	105.	90 - 110
Sulfate	mg/L	1.00	15.0	15.0	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Sulfate	mg/L	1.00	15.0	15.0	100.	90 - 110
Nitrate as Nitrogen	mg/L	1.00	2.99	3.00	99.6	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.98	3.00	99.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.98	3.00	99.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrate as Nitrogen	mg/L	1.00	2.94	3.00	98.0	90 - 110

Nitrite SM 4500-NO2 B

Batch 06NO212B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-001 Nitrite as Nitrogen	mg/L	06/06/2012 15:40	1.00	0.000360	0.0050	ND
801944-002 Nitrite as Nitrogen	mg/L	06/06/2012 15:41	1.00	0.000360	0.0050	ND

Method Blank

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

Duplicate

Lab ID = 801944-001

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	0.0376	0.0400	94.0	90 - 110

Matrix Spike

Lab ID = 801944-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0196	0.0200(0.0200)	98.0	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0189	0.0200	94.5	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0206	0.0200	103	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nitrite as Nitrogen	mg/L	1.00	0.0206	0.0200	103	90 - 110

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 4 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Alkalinity by SM 2320B

Batch 06ALK12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-002 Alkalinity as CaCO ₃	mg/L	06/12/2012	1.00	0.555	5.00	135
Bicarbonate (Calculated)	mg/L	06/12/2012	1.00	0.555	5.00	135
Carbonate (Calculated)	mg/L	06/12/2012	1.00	0.555	5.00	ND

Method Blank

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

Duplicate

Lab ID = 801944-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	138	135	2.20	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	98.0	100.	98.0	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	97.0	100.	97.0	90 - 110

Matrix Spike

Lab ID = 801949-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	226	240.(100.)	86.0	75 - 125

Matrix Spike Duplicate

Lab ID = 801949-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Alkalinity as CaCO ₃	mg/L	1.00	229	240.(100.)	89.0	75 - 125



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Specific Conductivity - EPA 120.1

Batch 06EC12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-001 Specific Conductivity	umhos/cm	06/07/2012	1.00	0.116	2.00	7440
801944-002 Specific Conductivity	umhos/cm	06/07/2012	1.00	0.116	2.00	7700

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 801945-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	8370	8370	0.00	0 - 10

Lab Control Sample

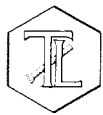
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	709	706	100.	90 - 110

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	981	998	98.3	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Chromium VI by EPA 218.6

Batch 06CrH12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-001 Chromium, Hexavalent	ug/L	06/06/2012 12:14	1.00	0.0250	0.20	ND
801944-002 Chromium, Hexavalent	ug/L	06/06/2012 14:41	50.0	1.25	10.0	752.

Method Blank

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

Duplicate

Lab ID = 801948-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.40	4.43	0.577	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.200	0.200	100.0	70 - 130

Lab Control Sample

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

Matrix Spike

Lab ID = 801944-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.12(1.00)	92.5	90 - 110

Matrix Spike

Lab ID = 801944-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1740	1750(1000)	98.9	90 - 110

Matrix Spike

Lab ID = 801945-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.3	16.5(10.0)	98.2	90 - 110

Matrix Spike

Lab ID = 801948-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.34	9.43(5.00)	98.2	90 - 110

Matrix Spike

Lab ID = 801948-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.50	8.68(5.00)	96.4	90 - 110

Matrix Spike

Lab ID = 801948-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.91	8.06(5.00)	97.0	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 8 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Metals by EPA 200.7, Total

Batch 062212A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-001 Iron	ug/L	06/22/2012 13:56	1.00	1.34	20.0	ND
Zinc	ug/L	06/22/2012 13:56	1.00	3.89	10.0	ND
801944-002 Iron	ug/L	06/22/2012 14:24	1.00	1.34	20.0	ND
Zinc	ug/L	06/22/2012 14:24	1.00	3.89	10.0	ND

Method Blank

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

Duplicate

Lab ID = 801944-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Iron	ug/L	1.00	ND	0.00	0	0 - 20
Zinc	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	108.	100.	108	85 - 115
Zinc	ug/L	1.00	99.9	100.	99.9	85 - 115

Matrix Spike

Lab ID = 801944-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	94.8	100.(100.)	94.8	75 - 125
Zinc	ug/L	1.00	104.	100.(100.)	104.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5170	5000	103.	95 - 105
Zinc	ug/L	1.00	5060	5000	101.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4870	5000	97.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4940	5000	98.9	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4860	5000	97.2	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 10 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Metals by EPA 200.7, Total

Batch 062512A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-001 Boron	ug/L	06/25/2012 12:35	1.00	1.50	200.	978.
Molybdenum	ug/L	06/25/2012 12:35	1.00	4.02	10.0	19.3
801944-002 Boron	ug/L	06/25/2012 13:09	1.00	1.50	200.	997.
Molybdenum	ug/L	06/25/2012 13:09	1.00	4.02	10.0	24.2

Method Blank

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

Duplicate

Lab ID = 801944-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Boron	ug/L	1.00	970.	978	0.821	0 - 20
Molybdenum	ug/L	1.00	18.8	19.3	2.62	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Boron	ug/L	1.00	93.6	100.	93.6	85 - 115
Molybdenum	ug/L	1.00	98.7	100.	98.7	85 - 115

Matrix Spike

Lab ID = 801944-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Boron	ug/L	1.00	2820	2980(2000)	91.9	75 - 125
Molybdenum	ug/L	1.00	117.	119.(100.)	97.8	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Boron	ug/L	1.00	4910	5000	98.2	95 - 105
Molybdenum	ug/L	1.00	4940	5000	98.8	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Boron	ug/L	1.00	4740	5000	94.7	90 - 110

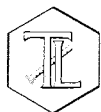
MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Boron	ug/L	1.00	4770	5000	95.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	4960	5000	99.2	90 - 110

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 12 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Metals by EPA 200.7, Total

Batch 062612A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-001 Aluminum	ug/L	06/26/2012 15:26	1.00	2.83	50.0	ND
801944-002 Aluminum	ug/L	06/26/2012 15:31	1.00	2.83	50.0	ND

Method Blank

Parameter	Unit	DF	Result
Aluminum	ug/L	1.00	ND

Duplicate

Lab ID = 801944-002

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

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	2040	2000	102.	85 - 115

Matrix Spike

Lab ID = 801944-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	1.00	1520	2000(2000)	75.8	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	4930	5000	98.6	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	4660	5000	93.1	90 - 110

MRCVS - Primary

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

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	2060	2000	103.	80 - 120

Interference Check Standard A

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	1970	2000	98.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	2030	2000	102.	80 - 120



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 14 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Metals by EPA 200.8, Total

Batch 061812A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-001 Antimony	ug/L	06/18/2012 19:36	5.00	0.420	5.0	ND
Arsenic	ug/L	06/18/2012 19:36	5.00	0.265	1.0	ND
Barium	ug/L	06/18/2012 19:36	5.00	0.205	10.0	11.4
Chromium	ug/L	06/18/2012 19:36	5.00	0.195	1.0	ND
Lead	ug/L	06/18/2012 19:36	5.00	0.265	10.0	ND
Manganese	ug/L	06/18/2012 19:36	5.00	0.270	1.0	1.7
801944-002 Antimony	ug/L	06/18/2012 20:40	5.00	0.420	5.0	ND
Arsenic	ug/L	06/18/2012 20:40	5.00	0.265	1.0	3.4
Barium	ug/L	06/18/2012 20:40	5.00	0.205	10.0	25.7
Chromium	ug/L	06/18/2012 20:40	5.00	0.195	1.0	747.
Lead	ug/L	06/18/2012 20:40	5.00	0.265	10.0	ND
Manganese	ug/L	06/18/2012 20:40	5.00	0.270	1.0	4.9

Method Blank

Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Barium	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Antimony	ug/L	1.00	ND
Lead	ug/L	1.00	ND
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 801944-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	5.00	ND	0.00	0	0 - 20
Barium	ug/L	5.00	12.6	11.4	9.84	0 - 20
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Antimony	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	1.58	1.69	6.48	0 - 20

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 15 of 30****Project Number: 424973.01.DM****Printed 6/28/2012****Low Level Calibration Verification**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.201	0.200	101.	70 - 130
Barium	ug/L	1.00	0.239	0.200	120.	70 - 130
Chromium	ug/L	1.00	0.234	0.200	117.	70 - 130
Antimony	ug/L	1.00	0.231	0.200	115.	70 - 130
Lead	ug/L	1.00	0.201	0.200	101.	70 - 130
Manganese	ug/L	1.00	0.210	0.200	105.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	95.7	100.	95.7	85 - 115
Barium	ug/L	5.00	98.5	100.	98.5	85 - 115
Chromium	ug/L	5.00	96.2	100.	96.2	85 - 115
Antimony	ug/L	5.00	103.	100.	103.	85 - 115
Lead	ug/L	5.00	93.9	100.	93.9	85 - 115
Manganese	ug/L	5.00	94.6	100.	94.6	85 - 115

Matrix Spike

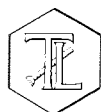
Lab ID = 801944-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	92.7	100.(100.)	92.7	75 - 125
Barium	ug/L	5.00	108	111.(100.)	96.6	75 - 125
Chromium	ug/L	5.00	95.3	100.(100.)	95.3	75 - 125
Antimony	ug/L	5.00	101.	100.(100.)	101.	75 - 125
Lead	ug/L	5.00	85.3	100.(100.)	85.3	75 - 125
Manganese	ug/L	5.00	93.6	102.(100.)	91.9	75 - 125

Matrix Spike Duplicate

Lab ID = 801944-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	96.7	100.(100.)	96.7	75 - 125
Barium	ug/L	5.00	110.	111.(100.)	98.2	75 - 125
Chromium	ug/L	5.00	96.6	100.(100.)	96.6	75 - 125
Antimony	ug/L	5.00	102.	100.(100.)	102.	75 - 125
Lead	ug/L	5.00	85.9	100.(100.)	85.9	75 - 125
Manganese	ug/L	5.00	93.7	102.(100.)	92.0	75 - 125

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 19 of 30****Project Number: 424973.01.DM****Printed 6/28/2012****Interference Check Standard AB**

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.31	10.0	93.1	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		
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

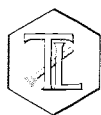
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.23	10.0	92.3	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.06	10.0	90.6	80 - 120

Serial Dilution**Lab ID = 801944-002**

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	25.0	26.2	25.7	1.74	0 - 10
Chromium	ug/L	25.0	732.	747	2.06	0 - 10


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
Page 20 of 30
Project Number: 424973.01.DM
Printed 6/28/2012
Metals by EPA 200.8, Total

Batch 062212A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-001 Copper	ug/L	06/22/2012 15:19	5.00	0.235	5.0	ND
Nickel	ug/L	06/22/2012 15:19	5.00	0.355	10.0	ND
801944-002 Copper	ug/L	06/22/2012 16:44	5.00	0.235	5.0	ND
Nickel	ug/L	06/22/2012 16:44	5.00	0.355	10.0	ND

Method Blank

Parameter	Unit	DF	Result
Nickel	ug/L	1.00	ND
Copper	ug/L	1.00	ND

Duplicate

Lab ID = 801944-001

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

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	0.974	1.00	97.4	70 - 130
Copper	ug/L	1.00	0.812	1.00	81.2	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	5.00	99.3	100.	99.3	85 - 115
Copper	ug/L	5.00	104.	100.	104.	85 - 115

Matrix Spike

Lab ID = 801944-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nickel	ug/L	5.00	95.6	100.(100.)	95.6	75 - 125
Copper	ug/L	5.00	93.6	100.(100.)	93.6	75 - 125

Matrix Spike Duplicate

Lab ID = 801944-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nickel	ug/L	5.00	97.1	100.(100.)	97.1	75 - 125
Copper	ug/L	5.00	95.3	100.(100.)	95.3	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	9.70	10.0	97.0	90 - 110
Copper	ug/L	1.00	9.77	10.0	97.7	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 22 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	10.0	10.0	100.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	1.00	9.49	10.0	94.9	80 - 120
Copper	ug/L	1.00	9.62	10.0	96.2	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

Reactive Silica by SM4500-Si D

Batch 06Si12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-002 Silica	mg/L	06/11/2012	25.0	0.532	1.00	20.3

Method Blank

Parameter	Unit	DF	Result
Silica	mg/L	1.00	ND

Duplicate

Lab ID = 801993-003

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	0.200	0.220	90.8	90 - 110

Matrix Spike

Lab ID = 801993-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Silica	mg/L	1.00	0.376	0.400(0.400)	94.0	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.0992	0.110	90.2	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Silica	mg/L	1.00	0.384	0.400	96.1	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 23 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Total Dissolved Solids by SM 2540 C

Batch 06TDS12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-001 Total Dissolved Solids	mg/L	06/06/2012	1.00	0.400	250.	4090
801944-002 Total Dissolved Solids	mg/L	06/06/2012	1.00	0.400	250.	4490

Method Blank

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

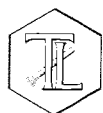
Duplicate

Lab ID = 801974-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	249	256	2.77	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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 24 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Total Organic Carbon (T/DOC) SM 5310 C

Batch 06TOC12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-002 Total Organic Carbon	mg/L	06/06/2012 13:37	1.00	0.0103	0.300	0.426

Method Blank

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

Duplicate

Lab ID = 801922-021

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Organic Carbon	mg/L	1.00	2.71	2.73	0.662	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	19.8	20.0	99.0	90 - 110

Matrix Spike

Lab ID = 801922-022

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	12.2	12.5(10.0)	97.2	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	10.5	10.0	105.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.33	10.0	93.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Total Organic Carbon	mg/L	1.00	9.40	10.0	94.0	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 25 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Total Phosphate, SM 4500-PB,E

Batch 06TP12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-002 Phosphate, Total As P	mg/L	06/11/2012	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 = 801944-002

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	0.102	0.100	102	90 - 110

Matrix Spike

Lab ID = 801944-002

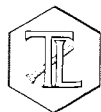
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0663	0.0650(0.0650)	102	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0564	0.0600	94.0	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Phosphate, Total As P	mg/L	1.00	0.0630	0.0650	96.9	90 - 110


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
Page 26 of 30
Project Number: 424973.01.DM
Printed 6/28/2012
Ammonia Nitrogen by SM4500-NH3D
Batch 06NH312B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-001 Ammonia as N	mg/L	06/07/2012	1.00	0.00120	0.500	ND
801944-002 Ammonia as N	mg/L	06/07/2012	1.00	0.00120	0.500	ND

Method Blank

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

Duplicate
Lab ID = 801944-002

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	10.8	10.0	108.	90 - 110

Matrix Spike
Lab ID = 801944-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.84	6.00(6.00)	97.4	75 - 125

Matrix Spike Duplicate
Lab ID = 801944-002

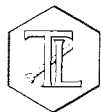
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	5.68	6.00(6.00)	94.6	75 - 125

MRCCS - Secondary

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

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Ammonia as N	mg/L	1.00	6.02	6.00	100.	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 27 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Metals by EPA 200.8, Dissolved

Batch 061912C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-002 Manganese	ug/L	06/20/2012 07:45	5.00	0.270	1.0	4.8

Method Blank

Parameter	Unit	DF	Result
Manganese	ug/L	1.00	ND

Duplicate

Lab ID = 801991-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Manganese	ug/L	5.00	29.9	29.7	0.738	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	0.200	0.200	100.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	5.00	96.6	100.	96.6	85 - 115

Matrix Spike

Lab ID = 801991-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Manganese	ug/L	5.00	122.	130.(100.)	91.9	75 - 125

Matrix Spike Duplicate

Lab ID = 801991-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Manganese	ug/L	5.00	125	130.(100.)	95.3	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.31	10.0	93.1	90 - 110

MRCVS - Primary

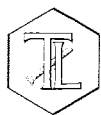
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.38	10.0	93.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.36	10.0	93.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	9.40	10.0	94.0	90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 29 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Metals by 200.7, Dissolved

Batch 062212A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-002 Iron	ug/L	06/22/2012 15:50	1.00	1.34	20.0	ND

Method Blank

Parameter	Unit	DF	Result
Iron	ug/L	1.00	ND

Duplicate

Lab ID = 801991-001

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	112.	100.	112.	85 - 115

Matrix Spike

Lab ID = 801991-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Iron	ug/L	1.00	108.	100.(100.)	108.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5170	5000	103.	95 - 105

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4870	5000	97.4	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4940	5000	98.9	90 - 110

MRCVS - Primary

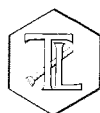
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	4860	5000	97.2	90 - 110

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	1980	2000	98.8	80 - 120



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 30 of 30

Project Number: 424973.01.DM

Printed 6/28/2012

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2060	2000	103.	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	1940	2000	97.2	80 - 120

Turbidity by SM 2130 B

Batch 06TUC12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801944-001 Turbidity	NTU	06/06/2012	1.00	0.0140	0.100	ND
801944-002 Turbidity	NTU	06/06/2012	1.00	0.0140	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 801944-002

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	8.43	8.00	105.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.54	8.00	107.	90 - 110

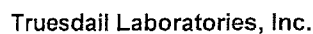
Respectfully submitted,

TRUESDAIL LABORATORIES, INC.



Mona Nassimi

Manager, Analytical Services



B250

Batch: 06TDS12B
Date Analyzed: 6/11/12

Calculation as follows:

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)

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	491	500	98.2%	90-110%	Yes
LCS2					
LCS3					
LCS4					
LCS5					
LCS6					
LCS7					
LCS8					
LCS9					
LCS10					
LCS11					
LCS12					
LCS13					
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LCS91					
LCS92					
LCS93					
LCS94					
LCS95					
LCS96					
LCS97					
LCS98					
LCS99					
LCS100					

$$P = \left(\frac{LC}{LT} \right) \times 100$$

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801974-1	0.0256	0.0249	1.4%	≤5%	Yes

$$\% \text{ Difference} = \frac{|A - B - C|}{C} \times 100$$

where $C = \frac{A+B}{2}$

A = Weight of the first sample in (g).

B = Weight of the second sample in (g).

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature _____

TDS/EC CHECK

[illegible]



E2 SC

Analytical Batch: 06ALK12A

Matrix:	Water
---------	-------

Date of Analysis: 6/12/12

[illegible]

T or P =

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

T = Total Alkalinity, mg CaCO₃/L

P = Phenolphthalein Alkalinity, mg CaCO₃/L

A = mL standard acid used

N = normality of standard acid

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

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)

Blank Summary

Reporting Limit, RL	Measured Value, ppm	Accept Limit	QC Within Control?
5 ppm	0	<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	98	100	98.0%	90-110	Yes
LCSD	97	100	97.0%	90-110	Yes

Duplicate Determination Difference Summary

Lab Number I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Acceptance Limit	QC Within Control?
801944-2	135	138	2.2%	≤20%	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?
801949-2	140	1	100	100	226	240.00	86%	75-125	Yes	0.7%	≤20%	Yes
	140	1	100	100	229	240.00	89%		Yes			

Analyst Printed Name

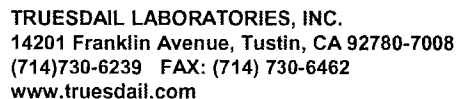
061212a

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature



[IM3Plant-WDR-364]

DATE 6/05/12 PAGE 1 OF 1

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL <input checked="" type="checkbox"/> WARM <input type="checkbox"/> 4.2 °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: The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time		
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time		

Method EPA 218.6 and SW 7199 Sample pH Log

MVG
6/5/12

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
801916	>1	<2	6-5-12	BE	YES	3010A
801919	<1	↓	↓	↓	NO	NO
801918	↓	↓	↓	↓	↓	3010A NO
801920	>1	↓	↓	↓	YES	3010A
801922(1-4)	<1	>2	↓	↓	NO	YES 16.00
801930	↓	<2	↓	↓	YES	3010A
801926(1-3)	↓	>2	↓	↓	NO	YES 16.00
T 801944(1-2)	<1	<2	6-6-12	BE	YES	3010A
D 801944(1-2)	↓	>2	↓	↓	↓	↓
801945(1-2)	↓	↓	↓	↓	↓	↓
801944	↓	<2	↓	↓	↓	↓
801948(1-3)	↓	↓	↓	↓	↓	↓
801949(1-2)	↓	↓	↓	↓	↓	↓
801943	↓	<2	↓	↓	NO	NO
801990(1-6)	<1	<2	6-7-12	BE	YES	3010A
801991-1	<1	<2	↓	↓	↓	↓
801973	>1	<2	↓	↓	↓	↓
801978(10-12)	<1	>2	↓	↓	NO	YES 13:30
802003	>1	>2	↓	↓	YES	3010A
801999	>1	<2	↓	↓	YES	3010A
802005	↓	↓	6-8-12	BE	↓	↓
802009	<1	<2	6-8-12	BE	NO	NO
802012	↓	↓	↓	↓	↓	↓
802013	↓	↓	↓	↓	↓	↓
802020	↓	↓	↓	↓	↓	↓
802033	↓	↓	↓	↓	↓	↓
802036	<1	<2	6-11-12	BE	NO	NO
802037	↓	↓	↓	↓	↓	↓
802038	↓	↓	↓	↓	↓	↓
802039	↓	↓	↓	↓	↓	↓
802040	↓	↓	↓	↓	↓	↓
802041	↓	↓	↓	↓	↓	↓
802042	↓	↓	↓	↓	↓	↓
802043	↓	↓	↓	↓	↓	↓
802044	↓	↓	↓	↓	↓	↓
802045	↓	↓	↓	↓	↓	↓
802046	↓	↓	↓	↓	↓	↓
802047(1-3)	↓	>2	↓	↓	↓	YES 14.00
802048(1-5)	↓	↓	↓	↓	↓	↓
802049(1-9)	↓	↓	↓	↓	↓	↓
802050(1-42)	↓	↓	↓	↓	↓	↓
802051(1-60)	↓	↓	↓	↓	↓	↓
802052(1-9)	↓	↓	↓	↓	↓	↓
802060	↓	<2	↓	↓	↓	NO
802061	↓	↓	↓	↓	↓	↓
802073	>1	<2	6-12-12	BE	YES	3010A
802080	<1	↓	↓	↓	NO	NO
802081	>1	↓	↓	↓	YES	3010A
802082	<1	↓	↓	↓	NO	NO



Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 801944

Date Delivered: 06/05/12 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)? 4.2°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☒ Client ☒ Yes ☐ No ☐ N/A
12. Were samples pH checked? pH = See C. v. e. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Strabinsky

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

June 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-EW-195, GROUNDWATER MONITORING
PROJECT, TLI NO.: 801945

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-195 groundwater-monitoring project for Total Dissolved and Hexavalent Chromium, Total Dissolved Solids, pH, and Specific Conductivity. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

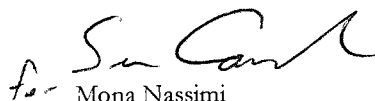
The samples were received and delivered with the chain of custody on June 5, 2012, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.


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

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

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

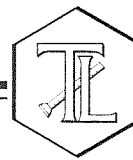
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


Mona Nassimi
Manager, Analytical Services


Michael Ngo
Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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

Attention: Shawn Duffy

Sample: Two (2) Groundwater Samples

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.: 801945

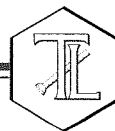
Date: June 21, 2012

Collected: June 5, 2012

Received: June 5, 2012

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 4500-H B	pH	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 200.8	Total Dissolved Chromium	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	George Wahba
SM 3500-CrB	Hexavalent Chromium	Jenny Tankunakorn



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

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project No.: 424973.01.DM

P.O. No.: 424973.01.DM

Laboratory No.: 801945

Date Received: June 5, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
801945-001	PE-01-195	E120.1	NONE	6/5/2012	10:00	EC	4960	umhos/cm	2.00
801945-001	PE-01-195	E200.8	LABFLT	6/5/2012	10:00	Chromium	6.8	ug/L	1.0
801945-001	PE-01-195	E218.6	LABFLT	6/5/2012	10:00	Chromium, hexavalent	6.5	ug/L	0.20
801945-001	PE-01-195	SM2540C	NONE	6/5/2012	10:00	Total Dissolved Solids	2840	mg/L	125
801945-001	PE-01-195	SM4500HB	NONE	6/5/2012	10:00	PH	7.36	pH	4.00
801945-002	TW-03D-195	E120.1	NONE	6/5/2012	10:00	EC	8370	umhos/cm	2.00
801945-002	TW-03D-195	E200.8	LABFLT	6/5/2012	10:00	Chromium	906	ug/L	2.0
801945-002	TW-03D-195	SM2540C	NONE	6/5/2012	10:00	Total Dissolved Solids	4760	mg/L	250
801945-002	TW-03D-195	SM3500-CrB	LABFLT	6/5/2012	10:00	Chromium, hexavalent	922	ug/L	262
801945-002	TW-03D-195	SM4500HB	NONE	6/5/2012	10:00	PH	7.18	pH	4.00

ND: Non Detected (below reporting limit)

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

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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. 801945

Page 1 of 7

Printed 6/21/2012

Samples Received on 6/5/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
PE-01-195	801945-001	06/05/2012 10:00	Water
TW-03D-195	801945-002	06/05/2012 10:00	Water

Specific Conductivity - EPA 120.1

Batch 06EC12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801945-001 Specific Conductivity	umhos/cm	06/07/2012	1.00	0.116	2.00	4960
801945-002 Specific Conductivity	umhos/cm	06/07/2012	1.00	0.116	2.00	8370

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	8370	8370	0.00	0 - 10

Lab Control Sample

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

MRCCS - Secondary

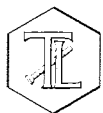
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	708	706	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	981	998	98.3	90 - 110

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

008



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 2 of 7
Printed 6/21/2012

Chrome VI by EPA 218.6

Batch 06CrH12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801945-001 Chromium, Hexavalent	ug/L	06/06/2012 12:24	1.00	0.0250	0.20	6.5

Method Blank

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

Duplicate

Lab ID = 801948-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.40	4.43	0.577	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.200	0.200	100.0	70 - 130

Lab Control Sample

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

Matrix Spike

Lab ID = 801944-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.05	1.12(1.00)	92.5	90 - 110

Matrix Spike

Lab ID = 801944-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	50.0	1740	1750(1000)	98.9	90 - 110

Matrix Spike

Lab ID = 801945-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	16.3	16.5(10.0)	98.2	90 - 110

Matrix Spike

Lab ID = 801948-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.34	9.43(5.00)	98.2	90 - 110

Matrix Spike

Lab ID = 801948-002

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	8.50	8.68(5.00)	96.4	90 - 110

Matrix Spike

Lab ID = 801948-003

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.91	8.06(5.00)	97.0	90 - 110



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 4 of 7
Printed 6/21/2012

Chromium, Hexavalent by SM 3500-Cr B

Batch 06CrH12A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801945-002 Chromium, Hexavalent	ug/L	06/11/2012 18:43	26.2	39.3	262	922.

Method Blank

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

Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	952.	922	3.25	0 - 20

Lab Control Sample

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

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	26.2	3580	3540(2620)	101.	85 - 115

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	60.7	60.0	101.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	60.7	60.0	101.	90 - 110

pH by SM 4500-H B

Batch 06PH12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801945-001 pH	pH	06/06/2012 09:45	1.00	0.0780	4.00	7.36
801945-002 pH	pH	06/06/2012 09:48	1.00	0.0780	4.00	7.18

Duplicate

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
pH	pH	1.00	7.19	7.18	0.139	0 - 20

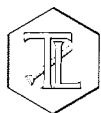
Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.01	7.00	100.	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
pH	pH	1.00	7.03	7.00	100.	90 - 110

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 5 of 7
Printed 6/21/2012

Total Dissolved Solids by SM 2540 C

Batch 06TDS12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801945-001 Total Dissolved Solids	mg/L	06/06/2012	1.00	0.400	125	2840
801945-002 Total Dissolved Solids	mg/L	06/06/2012	1.00	0.400	250.	4760

Method Blank

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

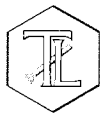
Duplicate

Lab ID = 801974-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	249	256	2.77	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


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
Project Number: 424973.01.DM
Page 6 of 7
Printed 6/21/2012
Metals by EPA 200.8, Dissolved

Batch 061412A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
801945-001 Chromium	ug/L	06/14/2012 21:13	5.00	0.195	1.0	6.8
801945-002 Chromium	ug/L	06/14/2012 21:20	10.0	0.390	2.0	906.

Method Blank

Parameter	Unit	DF	Result
Chromium	ug/L	1.00	ND

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.220	0.200	110.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.5	100.	98.5	85 - 115

Matrix Spike

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.2	100.(100.)	98.2	75 - 125

Matrix Spike Duplicate

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

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.50	10.0	95.0	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	9.49	10.0	94.9	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

Interference Check Standard A

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 7 of 7
Printed 6/21/2012

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	9.23	10.0	92.3	80 - 120

Interference Check Standard AB


Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.76	10.0	97.6	80 - 120

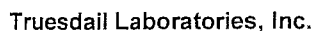
Serial Dilution

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	25.0	75.2	77.0	2.32	0 - 10

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


for Mona Nassimi
Manager, Analytical Services



E2 SC

Batch:	06TDS12B
Date Analyzed:	6/11/12

Calculation as follows:

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)

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	491	500	98.2%	90-110%	Yes
LCS2					
LCS3					
LCS4					
LCS5					
LCS6					
LCS7					
LCS8					
LCS9					
LCS10					
LCS11					
LCS12					
LCS13					
LCS14					
LCS15					
LCS16					
LCS17					
LCS18					
LCS19					
LCS20					
LCS21					
LCS22					
LCS23					
LCS24					
LCS25					
LCS26					
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LCS85					
LCS86					
LCS87					
LCS88					
LCS89					
LCS90					
LCS91					
LCS92					
LCS93					
LCS94					
LCS95					
LCS96					
LCS97					
LCS98					

$$P = \left(\frac{LC}{LT} \right) \times 100$$

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
801974-1	0.0256	0.0249	1.4%	≤5%	Yes

$$\% \text{ Difference} = \frac{|A - B - C|}{C} \times 100$$

where $C = \frac{A+B}{2}$

A = Weight of the first sample in (g).

B = Weight of the second sample in (g).

C = Average weight in (q).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

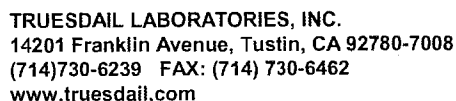
Batch: 06TDS12B
Date Analyzed: 6/11/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
801944-1	7450	0.55	4842.5	0.84
801944-2	7720	0.58	5018	0.89
801945-1	4960	0.57	3224	0.88
801945-2	8260	0.58	5369	0.89
801948-1	536	0.56	348.4	0.87
801948-2	446	0.59	289.9	0.91
801948-3	476	0.58	309.4	0.89
801949-1	1550	0.58	1007.5	0.90
801949-2	1017	0.55	661.05	0.85
801974-1	454	0.56	295.1	0.87
801974-1D	454	0.55	295.1	0.84
LCS				
802014	3530	0.57	2294.5	0.88
802015	228	1.73	148.2	2.67
	228	#VALUE!	148.2	#VALUE!
	228	#VALUE!	148.2	#VALUE!

←
A

A

A



[IM3Plant-EW-195]

801945

COC Number

TURNAROUND TIME

10 Days

DATE 06/05/12

PAGE 1 OF 1

COMPANY														COMMENTS						
PROJECT NAME																				
PHONE														FAX						
ADDRESS																				
P.O. NUMBER																				
SAMPLERS (SIGNATURE)																				
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Dissolved Cr (200.7) Lab filtered	Cr(VI) (3500-Cr B)	pH (150.0) EC (120.1)	TDS (160.1)	Cr(VI) (218.6)												
PE-01-195	06/05/12	10:00	Ground water	X		X	X	X										4	pH = 7 } 200.7 pH = 7 } 200.7	
TW-03D-195	06/05/12	10:00	Ground water	X	X	X	X										4			
ALERT !! Level III QC				See Sample Conditions See Form Attached																
																	8	TOTAL NUMBER OF CONTAINERS		

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL <input checked="" type="checkbox"/> WARM <input type="checkbox"/> 4.2 °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		
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time		

041

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

MVG
6/5/12

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
801916	>1	<2	6-5-12	BE	YES	3010A
801919	<1	↓	↓	↓	NO	NO
801918	↓	↓	↓	↓	↓	3010A NO
801920	>1	↓	↓	↓	YES	3010A
801922(17)	<1	>2	↓	↓	NO	YES 16.00
801930	↓	<2	↓	↓	YES	3010A
801926(11-3)	↓	>2	↓	↓	NO	YES 16.00
T 801944(1-2)	<1	<2	6-6-12	BE	YES	3010A
D 801944(1-2)	↓	>2	↓	↓	↓	↓
801945(1-2)	↓	↓	↓	↓	↓	↓
801944	↓	<2	↓	↓	↓	↓
801948(1-3)	↓	↓	↓	↓	↓	↓
801949(1-2)	↓	↓	↓	↓	↓	↓
801943	↓	<2	↓	↓	NO	NO
801990(1-6)	<1	<2	6-7-12	BE	YES	3010A
801991-1	<1	<2	↓	↓	↓	↓
801973	>1	<2	↓	↓	↓	↓
801978(10-12)	<1	>2	↓	↓	NO	YES 13.30
802003	>1	>2	↓	↓	YES	3010A
801999	>1	<2	↓	↓	YES	3010A
802005	↓	↓	6-8-12	BE	↓	↓
802009	<1	<2	6-8-12	BE	NO	NO
802012	↓	↓	↓	↓	↓	↓
802013	↓	↓	↓	↓	↓	↓
802020	↓	↓	↓	↓	↓	↓
802033	↓	↓	↓	↓	↓	↓
802036	<1	<2	6-11-12	BE	NO	NO
802037	↓	↓	↓	↓	↓	↓
802038	↓	↓	↓	↓	↓	↓
802039	↓	↓	↓	↓	↓	↓
802040	↓	↓	↓	↓	↓	↓
802041	↓	↓	↓	↓	↓	↓
802042	↓	↓	↓	↓	↓	↓
802043	↓	↓	↓	↓	↓	↓
802044	↓	↓	↓	↓	↓	↓
802045	↓	↓	↓	↓	↓	↓
802046	↓	↓	↓	↓	↓	↓
802047(1-3)	↓	>2	↓	↓	↓	YES 14.00
802048(1-5)	↓	↓	↓	↓	↓	↓
802049(1-9)	↓	↓	↓	↓	↓	↓
802050(1-42)	↓	↓	↓	↓	↓	↓
802051(1-60)	↓	↓	↓	↓	↓	↓
802052(1-9)	↓	↓	↓	↓	↓	↓
802060	↓	<2	↓	↓	↓	NO
802061	↓	↓	↓	↓	↓	↓
802073	>1	<2	6-12-12	BE	YES	3010A
802080	<1	↓	↓	↓	NO	NO
802081	>1	↓	↓	↓	YES	3010A
802082	<1	↓	↓	↓	NO	NO



Sample Integrity & Analysis Discrepancy Form

Client: E2

Lab # 801945

Date Delivered: 06/05/12 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)? 4.2°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☐ Yes ☐ No ☒ N/A
12. Were samples pH checked? pH = see c.o.c. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☒ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☐ Other _____
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Shabunine



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

June 25, 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-365 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 802097

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-365 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 June 12, 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.

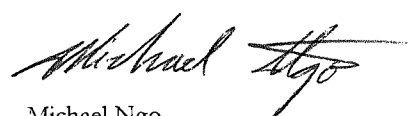
Total Chromium and Total Manganese were analyzed by EPA 200.8 rather than EPA 200.7 as requested on the chain of custody with Mr. Shawn Duffy's approval.

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.

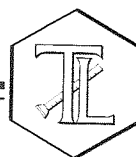
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

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.: 802097

Date: June 25, 2012

Collected: June 12, 2012

Received: June 12, 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	Himani Vaishnav



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.: 802097

Date Received: June 12, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
802097-001	SC-700B-WDR-365	E120.1	NONE	6/12/2012	10:00	EC	7310	umhos/cm	2.00
802097-001	SC-700B-WDR-365	E200.8	NONE	6/12/2012	10:00	Chromium	ND	ug/L	1.0
802097-001	SC-700B-WDR-365	E200.8	NONE	6/12/2012	10:00	Manganese	1.2	ug/L	1.0
802097-001	SC-700B-WDR-365	E218.6	LABFLT	6/12/2012	10:00	Chromium, hexavalent	ND	ug/L	0.20
802097-001	SC-700B-WDR-365	SM2130B	NONE	6/12/2012	10:00	Turbidity	ND	NTU	0.100
802097-001	SC-700B-WDR-365	SM2540C	NONE	6/12/2012	10:00	Total Dissolved Solids	4080	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

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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. 802097

Page 1 of 6

Printed 6/25/2012

Samples Received on 6/12/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-365	802097-001	06/12/2012 10:00	Water

Specific Conductivity - EPA 120.1

Batch 06EC12B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802097-001 Specific Conductivity	umhos/cm	06/15/2012	1.00	0.116	2.00	7310

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 802097-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7310	7310	0.00	0 - 10

Lab Control Sample

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

MRCCS - Secondary

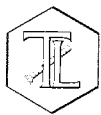
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	705	706	99.8	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	992	998	99.4	90 - 110

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

008



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 6

Project Number: 424973.01.DM

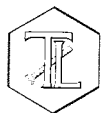
Printed 6/25/2012

Chrome VI by EPA 218.6

Batch 06CrH12G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802097-001 Chromium, Hexavalent	ug/L	06/18/2012 14:39	1.00	0.0250	0.20	ND
Method Blank						
Parameter	Unit	DF	Result			
Chromium, Hexavalent	ug/L	1.00	ND			
Duplicate					Lab ID = 802154-002	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	7.83	7.83	0.00766	0 - 20
Low Level Calibration Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.181	0.200	90.5	70 - 130
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.92	5.00	98.5	90 - 110
Matrix Spike					Lab ID = 802097-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.06	1.12(1.00)	94.1	90 - 110
Matrix Spike					Lab ID = 802154-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.16	1.17(1.00)	99.8	90 - 110
Matrix Spike					Lab ID = 802154-002	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	17.6	17.8(10.0)	97.4	90 - 110
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.91	5.00	98.3	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	10.2	10.0	102.	95 - 105

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TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 3 of 6

Project Number: 424973.01.DM

Printed 6/25/2012

Metals by EPA 200.8, Total

Batch 061512B

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802097-001 Chromium	ug/L	06/16/2012 03:26	5.00	0.195	1.0	ND
Manganese	ug/L	06/16/2012 03:26	5.00	0.270	1.0	1.2

Method Blank

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

Duplicate

Lab ID = 802097-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	1.19	1.20	0.669	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.190	0.200	95.1	70 - 130
Manganese	ug/L	1.00	0.155	0.200	77.6	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	5.00	98.3	100.	98.3	85 - 115
Manganese	ug/L	5.00	92.5	100.	92.5	85 - 115

Matrix Spike

Lab ID = 802097-001

Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	101.	100.(100.)	101.	75 - 125
Manganese	ug/L	5.00	95.3	101.(100.)	94.1	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.0	10.0	100.	90 - 110
Manganese	ug/L	1.00	9.56	10.0	95.6	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.68	10.0	96.8	90 - 110

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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010



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 5 of 6

Project Number: 424973.01.DM

Printed 6/25/2012

Total Dissolved Solids by SM 2540 C

Batch 06TDS12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802097-001 Total Dissolved Solids	mg/L	06/15/2012	1.00	0.400	250.	4080

Method Blank

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

Duplicate

Lab ID = 802097-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4130	4080	1.22	0 - 5

Lab Control Sample

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

Turbidity by SM 2130 B

Batch 06TUC12G

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802097-001 Turbidity	NTU	06/13/2012	1.00	0.00	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 802097-001

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	8.53	8.00	107.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.33	8.00	104.	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 6/25/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


f- Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

E2 SC

Total Dissolved Solids by SM 2540 C**Calculations**Batch: 06TDS12C
Date Analyzed: 6/19/12

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	72.3864	72.3865	72.3864	0.0001	No	0.0000	0.0	25.0	ND	1
802073	50	49.0170	49.1302	49.1301	0.0001	No	0.1131	2262.0	50.0	2262.0	1
802097	10	50.9445	50.9856	50.9853	0.0003	No	0.0408	4080.0	250.0	4080.0	1
802116-5	100	74.9389	74.9823	74.9822	0.0001	No	0.0433	433.0	25.0	433.0	1
802127	100	72.9629	73.0208	73.0204	0.0004	No	0.0575	575.0	25.0	575.0	1
802139	100	67.1025	67.1551	67.1548	0.0003	No	0.0523	523.0	25.0	523.0	1
802152	50	75.9657	76.0179	76.0177	0.0002	No	0.0520	1040.0	50.0	1040.0	1
802154-1	50	65.4602	65.5251	65.5251	0.0000	No	0.0649	1298.0	50.0	1298.0	1
802154-2	50	72.0948	72.1662	72.1658	0.0004	No	0.0710	1420.0	50.0	1420.0	1
802154-3	50	71.3288	71.3897	71.3893	0.0004	No	0.0605	1210.0	50.0	1210.0	1
802154-4	50	68.5116	68.564	68.5636	0.0004	No	0.0520	1040.0	50.0	1040.0	1
802097D	10	51.0843	51.1258	51.1256	0.0002	No	0.0413	4130.0	250.0	4130.0	1
LCS	100	73.4941	73.5443	73.5443	0.0000	No	0.0502	502.0	25.0	502.0	1
802162-1	100	74.2305	74.2539	74.2537	0.0002	No	0.0232	232.0	25.0	232.0	1
802162-2	100	75.7634	75.786	75.7858	0.0002	No	0.0224	224.0	25.0	224.0	1
802162-3	100	67.1975	67.2491	67.249	0.0001	No	0.0515	515.0	25.0	515.0	1
802162-4	100	78.3796	78.4084	78.4081	0.0003	No	0.0285	285.0	25.0	285.0	1
802162-5	100	74.8668	74.8888	74.8885	0.0003	No	0.0217	217.0	25.0	217.0	1
802162-6	100	76.3421	76.3656	76.3655	0.0001	No	0.0234	234.0	25.0	234.0	1
802184-2	100	66.7140	66.7292	66.7292	0.0000	No	0.0152	152.0	25.0	152.0	1
802184-4	100	69.2099	69.2255	69.2255	0.0000	No	0.0156	156.0	25.0	156.0	1

Calculation as follows:

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)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	502	500	100.4%	90-110%	Yes
LCSD					

LCS Recovery

$$P = \left(\frac{LC}{LT} \right) \times 100$$

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
802097	0.0408	0.0413	0.6%	≤5%	Yes

Duplicate Determination Difference

$$\% \text{ Difference} = \frac{|A - B|}{C} \times 100$$

$$\text{where } C = \frac{A + B}{2}$$

A = Weight of the first sample in (g).

B = Weight of the second sample in (g).

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 06TDS12C

Date Analyzed: 6/19/12

Laboratory Number	EC	TDS/EC Ratio: 0.55-.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
802073	2980	0.76	1937	1.17
802097	7320	0.56	4758	0.86
802116-5	737	0.59	479.05	0.90
802127	929	0.62	603.85	0.95
802139	938	0.56	609.7	0.86
802152	1587	0.66	1031.55	1.01
802154-1	1940	0.67	1261	1.03
802154-2	2040	0.70	1326	1.07
802154-3	1820	0.66	1183	1.02
802154-4	1609	0.65	1045.85	0.99
802097D	7320	0.56	4758	0.87
LCS				
802162-1	369	0.63	239.85	0.97
802162-2	364	0.62	236.6	0.95
802162-3	834	0.62	542.1	0.95
802162-4	458	0.62	297.7	0.96
802162-5	341	0.64	221.65	0.98
802162-6	345	0.68	224.25	1.04
802184-2	275	0.55	178.75	0.85
802184-4	285	0.55	185.25	0.84

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Handwritten 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

COC Number

TURNAROUND TIME 10 Days
DATE 06/12/12 PAGE 1 OF 1

802097

[IM3Plant-WDR-365]

COMPANY				E2										<div style="border: 1px solid black; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div> <p>PROJECT NAME PG&E Topock</p> <p>PHONE (530) 229-3303 FAX (530) 339-3303</p> <p>ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612</p> <p>P.O. NUMBER 424973.01.DM TEAM 1</p> <p>SAMPLERS (SIGNATURE) </p> </div> <div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg); transform-origin: center;"> NUMBER OF CONTAINERS </div> </div> </div>									
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																			
SAMPLE I.D.				DATE				TIME		DESCRIPTION		<div style="display: flex; justify-content: space-between;"> <div> <p>Cr6 (218.6) Lab Filtered</p> <p>Total Metals (200.7) Cr, Mn</p> <p>Specific Conductance (120.1)</p> <p>TDS (SM2540C)</p> <p>Turbidity (SM2130)</p> </div> <div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg); transform-origin: center;"> NUMBER OF CONTAINERS </div> </div>											
SC-700B-WDR-365				06/12/12				1000		Water		<div style="display: flex; justify-content: space-between;"> <div> <p>x x x x</p> <p>x</p> </div> <div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg); transform-origin: center;"> NUMBER OF CONTAINERS </div> </div>											
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Rec'd 06/12/12
sl4a 802097

ALERT !!
Level III QC

**For Sample Conditions
See Form Attached**

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/> 4.3 °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			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			

035

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
6/5/12	801907	9.5	N/A	N/A	N/A	Gu
6/5/12	801909-1	9.5	N/A	N/A	N/A	Gu
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
↓	↓ -7	↓	↓	↓	↓	↓
6/5/12	80188908	9.5	N/A	N/A	N/A	Gu
6/6/12	801944-1	7	2 mL	9.5	8:55 Am	Gu
↓	801944-2	↓	↓	↓	9:00 Am	↓
6/6/12	801945-1	7	2 mL	9.5	9:05 Am	Gu
↓	801945-2	↓	↓	↓	9:10 Am	↓
6/6/12	801948-1	9.5	N/A	N/A	N/A	Gu
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓
↓	↓ -5	↓	↓	↓	↓	↓
↓	↓ -6	↓	↓	↓	↓	↓
6/7/12	801991-1	9.5	N/A	N/A	N/A	Gu
↓	↓ -2	↓	↓	↓	↓	↓
6/13/12	802097	7	2 mL / 100	9.5	8:30 Am	Gu
6/14/12	802135-1	9.5	N/A	N/A	N/A	HAV
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	HAV
6/14/12	802152	9.5	N/A	N/A	N/A	MG
↓	802154-1	↓	↓	↓	↓	↓
↓	↓ -2	↓	↓	↓	↓	↓
↓	↓ -3	↓	↓	↓	↓	↓
↓	↓ -4	↓	↓	↓	↓	↓

MVG
6/5/12

Turbidity/pH Check

[illegible]



TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: E 2

Lab # 802097

Date Delivered: 6/12/12 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)? 4.3°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☐ Yes ☐ No ☒ N/A
12. Were samples pH checked? pH = See C.O.C. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☐ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: d. Shabunina

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

June 28, 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-366 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 802226

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-366 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 June 19, 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.: 802226

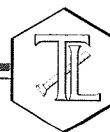
Date: June 28, 2012

Collected: June 19, 2012

Received: June 19, 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	Himani Vaishnav / Maksim Gorbunov



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

Attention: Shawn Duffy

Laboratory No.: 802226
Date Received: June 19, 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
802226-001	SC-700B-WDR-366	E120.1	NONE	6/19/2012	13:00	EC	7350	umhos/cm	2.00
802226-001	SC-700B-WDR-366	E200.8	NONE	6/19/2012	13:00	Chromium	ND	ug/L	1.0
802226-001	SC-700B-WDR-366	E200.8	NONE	6/19/2012	13:00	Manganese	4.2	ug/L	1.0
802226-001	SC-700B-WDR-366	E218.6	LABFLT	6/19/2012	13:00	Chromium, hexavalent	ND	ug/L	0.20
802226-001	SC-700B-WDR-366	SM2130B	NONE	6/19/2012	13:00	Turbidity	ND	NTU	0.100
802226-001	SC-700B-WDR-366	SM2540C	NONE	6/19/2012	13:00	Total Dissolved Solids	4050	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. 802226

Page 1 of 6

Printed 6/28/2012

Samples Received on 6/19/2012 8:00:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-366	802226-001	06/19/2012 13:00	Water

Specific Conductivity - EPA 120.1

Batch 06EC12C

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802226-001 Specific Conductivity	umhos/cm	06/21/2012	1.00	0.116	2.00	7350

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 802226-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7340	7350	0.136	0 - 10

Lab Control Sample

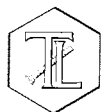
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Specific Conductivity	umhos	1.00	708	706	100.	90 - 110

MRCCS - Secondary

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

MRCVS - Primary

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



TRUESDAIL LABORATORIES, INC.

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 2 of 6

Project Number: 424973.01.DM

Printed 6/28/2012

Chrome VI by EPA 218.6

Batch 06CrH12H

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802226-001 Chromium, Hexavalent	ug/L	06/20/2012 13:19	1.00	0.0250	0.20	ND

Method Blank

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

Duplicate

Lab ID = 802228-002

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.20	1.21	0.397	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.223	0.200	112.	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.86	5.00	97.1	90 - 110

Matrix Spike

Lab ID = 802226-001

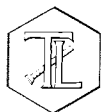
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.02	1.08(1.00)	94.6	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	4.86	5.00	97.3	90 - 110

MRCVS - Primary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	9.53	10.0	95.3	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 6/28/2012****Metals by EPA 200.8, Total**

Batch 062012A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802226-001 Chromium	ug/L	06/20/2012 20:56	5.00	0.195	1.0	ND
Manganese	ug/L	06/20/2012 20:56	5.00	0.270	1.0	4.2

Method Blank

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

Duplicate

Lab ID = 802226-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	3.92	4.19	6.78	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.222	0.200	111.	70 - 130
Manganese	ug/L	1.00	0.206	0.200	103.	70 - 130

Lab Control Sample

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

Matrix Spike

Lab ID = 802226-001

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	106.	104.(100.)	102.	75 - 125

Matrix Spike Duplicate

Lab ID = 802226-001

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	106.	104.(100.)	101.	75 - 125

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	10.3	10.0	103.	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	9.93	10.0	99.3	90 - 110

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



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 6/28/2012

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	9.97	10.0	99.7	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	9.94	10.0	99.4	80 - 120

Interference Check Standard AB

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Manganese	ug/L	1.00	10.2	10.0	102.	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 06TDS12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802226-001 Total Dissolved Solids	mg/L	06/20/2012	1.00	0.757	250.	4050

Method Blank

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

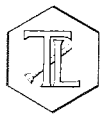
Duplicate

Lab ID = 802226-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4200	4050	3.64	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



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 6/28/2012

Turbidity by SM 2130 B

Batch 06TUC12M

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802226-001 Turbidity	NTU	06/20/2012	1.00	0.100	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 802226-001

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	8.05	8.00	101.	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

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

See Card
for Mona Nassimi
Manager, Analytical Services



Calculations

Batch: 05TDS12D

Date Analyzed: 6/22/12

Calculation as follows:

$$\left(\frac{A - B}{C} \right) \times 10^6$$

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)

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	491	500	98.2%	90-110%	Yes
LCSD					

$$P = \left(\frac{LC}{LT} \right) \times 100$$

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
802226	0.0405	0.042	1.8%	≤5%	Yes

$$\% \text{ Difference} = \frac{|A - B - C|}{C} \times 100$$

where $C = \frac{A+B}{2}$

A = Weight of the first sample in (g)

B = Weight of the second sample in (g).

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature _____

TDS/EC CHECK

Date Analyzed: 6/22/12

[illegible]

A

H

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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-366]

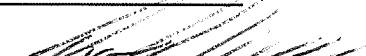
802226

COC Number

TURNAROUND TIME 10 Days

DATE 06/19/12

PAGE 1 OF 1

COMPANY		E2		<div style="text-align: right;"> Rec'd 06/19/12 S15b 802226 </div>												COMMENTS					
PROJECT NAME		PG&E Topock																			
PHONE		(530) 229-3303																FAX		(530) 339-3303	
ADDRESS		155 Grand Ave Ste 1000																Oakland, CA 94612			
P.O. NUMBER		424973.01.DM																TEAM		1	
SAMPLERS (SIGNATURE)						<div style="writing-mode: vertical-rl; transform: rotate(180deg);"> NUMBER OF CONTAINERS </div>															
SAMPLE I.D.		DATE		TIME		DESCRIPTION		<div style="writing-mode: vertical-rl; transform: rotate(180deg);"> Cr6 (218.6) Lab Filtered Total Metals (200.7) Cr, Mn Specific Conductance (120.1) TDS (SM2540C) Turbidity (SM2130) </div>													
SC-700B-WDR-366		06/19/12		1300		Water		<div style="display: flex; justify-content: space-between;"> <div> x x x x x x x x x x x x x x x x </div> <div> 3 </div> </div>													
														<div style="display: flex; justify-content: space-between;"> <div> 3 </div> <div> TOTAL NUMBER OF CONTAINERS </div> </div>							

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	6-19-12 1500	RECEIVED	COOL <input checked="" type="checkbox"/> WARM <input type="checkbox"/> 5.2 °C
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	6-19-12 1500	CUSTODY SEALED	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	6-19-12 2000	SPECIAL REQUIREMENTS:	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	6/19/12 20:00		
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			

035

Hexavalent Chromium

Method EPA 218.6 and SW 7199 Sample pH Log

[illegible]

Mr.
Q 6/20/2003

Turbidity/pH Check

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
802083	>1	<2	6-12-12	BE	XCS	3010A
802097	<1	>2	6-13-12	BE	XCS	3010A YES 15:00
802116(7-9)	↓	↓	↓	↓	NO	↓
802135(1-3)	<1	<2	6-14-12	BE	YES	3010A
802121(10-12)	↓	>2	↓	↓	NO	XCS: 16:00
802122(1-7)	↓	↓	↓	↓	↓	↓
802126(1-6)	↓	↓	↓	↓	↓	↓
802128	↓	<2	↓	↓	NO	NO
802142(1-34)	↓	>2	↓	↓	NO	XCS: 16:00
802148	>1	<2	↓	↓	XCS	3010A
802149	↓	↓	↓	↓	↓	↓
802152	<1	<2	6-15-12	BE	YES	3010A
802153	↓	↓	↓	↓	↓	↓
802154(1-4)	↓	↓	↓	↓	↓	↓
802168(1-10)	↓	↓	↓	↓	NO	NO
802169(1-10)	↓	↓	↓	↓	↓	↓
802170	>1	↓	↓	↓	XCS	3010A
802171	↓	↓	↓	↓	↓	↓
802184(1-24)	<1	>2	6-18-12	BE	NO	YES 9:00 AM
802226	<1	>2	6-20-12	BE	XCS	3010A XCS 7:30 AM
802194	↓	<2	↓	↓	YES	NO 3010A
802195	↓	↓	↓	↓	↓	↓
802211	↓	↓	↓	↓	↓	↓
802218	↓	>2	↓	↓	NO	YES 11:00 AM
802212	>1	<2	↓	↓	YES	3010A
802213	↓	↓	↓	↓	↓	↓
802214	↓	↓	↓	↓	↓	↓
802215	↓	↓	↓	↓	↓	↓
802216	↓	↓	↓	↓	↓	↓
802255(1-2)	>1	>2	↓	↓	YES	3010A XCS 11:00
802235(10-12)	<1	>2	6-21-12	BE	NO	YES 8:00 AM
802236(1-3)	↓	↓	↓	↓	↓	↓
802237(1-3)	↓	↓	↓	↓	↓	↓
802245(1-2)	↓	↓	↓	↓	↓	↓
802256	<1	<2	6-22-12	BE	NO	NO
802262	>1	↓	↓	↓	YES	3010A
802264	↓	↓	↓	↓	↓	↓
802265	↓	↓	↓	↓	↓	↓
802268	↓	↓	↓	↓	↓	↓
802267	↓	↓	↓	↓	↓	↓
802277(1-5)	↓	↓	↓	↓	NO	NO BE XCS = 14:00
802274(1-10)	<1	<2	6-25-12	BE	NO	NO
802275(1-5)	<1	<2	6-26-12	BE	NO	NO
802275(6-10)	<1	>2	↓	↓	↓	XCS 9:00 AM
802291	↓	<2	↓	↓	XCS	3010A
802292	↓	<2	↓	↓	↓	↓
802285(1-4)	↓	>2	↓	↓	NO	XCS 11:00 AM
802309	>1	<2	6-27-12	BE	YES	3010A
802317(1-3)	<1	>2	↓	↓	NO	YES 8:30 AM



Sample Integrity & Analysis Discrepancy Form

Client: E 2

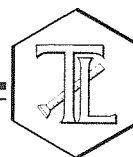
Lab # 802226

Date Delivered: 06/19/12 Time: 20:00 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)? 5.2°C ☒ Yes ☐ No ☐ N/A
7. Were samples received intact
(i.e. broken bottles, leaks, air bubbles, etc.)? ☒ Yes ☐ No ☐ N/A
8. Were sample custody seals intact? ☐ Yes ☐ No ☒ N/A
9. Does the number of samples received agree with COC? ☒ Yes ☐ No ☐ N/A
10. Did sample labels correspond with the client ID's? ☒ Yes ☐ No ☐ N/A
11. Did sample labels indicate proper preservation?
Preserved (if yes) by: ☐ Truesdail ☐ Client ☐ Yes ☐ No ☒ N/A
12. Were samples pH checked? pH = See c.o.c. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☐ RUSH ☒ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water
16. Comments: _____
17. Sample Check-In completed by Truesdail Log-In/Receiving: L. Shabunina

TRUESDAIL LABORATORIES, INC.

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

June 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-367 PROJECT, GROUNDWATER
MONITORING, TLI NO.: 802320

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-367 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 June 26, 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.

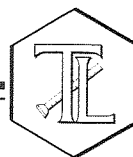
Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


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.: 802320

Date: June 29, 2012

Collected: June 26, 2012

Received: June 26, 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	Himani Vaishnav



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.: 802320

Date Received: June 26, 2012

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
802320-001	SC-700B-WDR-367	E120.1	NONE	6/26/2012	10:00	EC	7320	umhos/cm	2.00
802320-001	SC-700B-WDR-367	E200.8	NONE	6/26/2012	10:00	Chromium	ND	ug/L	1.0
802320-001	SC-700B-WDR-367	E200.8	NONE	6/26/2012	10:00	Manganese	1.2	ug/L	1.0
802320-001	SC-700B-WDR-367	E218.6	LABFLT	6/26/2012	10:00	Chromium, hexavalent	ND	ug/L	0.20
802320-001	SC-700B-WDR-367	SM2130B	NONE	6/26/2012	10:00	Turbidity	ND	NTU	0.100
802320-001	SC-700B-WDR-367	SM2540C	NONE	6/26/2012	10:00	Total Dissolved Solids	4200	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



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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. 802320

Page 1 of 6

Printed 6/29/2012

Samples Received on 6/26/2012 9:30:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-367	802320-001	06/26/2012 10:00	Water

Specific Conductivity - EPA 120.1

Batch 06EC12D

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802320-001 Specific Conductivity	umhos/cm	06/27/2012	1.00	0.116	2.00	7320

Method Blank

Parameter	Unit	DF	Result
Specific Conductivity	umhos	1.00	ND

Duplicate

Lab ID = 802320-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Specific Conductivity	umhos	1.00	7310	7320	0.137	0 - 10

Lab Control Sample

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

MRCCS - Secondary

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

MRCVS - Primary

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

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

008

**Client: E2 Consulting Engineers, Inc.****Project Name: PG&E Topock Project****Page 2 of 6****Project Number: 424973.01.DM****Printed 6/29/2012****Chrome VI by EPA 218.6**

Batch 06CrH12K

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802320-001 Chromium, Hexavalent	ug/L	06/27/2012 13:07	1.00	0.0250	0.20	ND

Method Blank

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

Duplicate

Lab ID = 802320-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.100	0.0975	2.73	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	0.198	0.200	98.9	70 - 130

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.07	5.00	101.	90 - 110

Matrix Spike

Lab ID = 802320-001

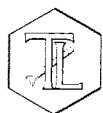
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	1.13	1.10(1.00)	103.	90 - 110

MRCCS - Secondary

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium, Hexavalent	ug/L	1.00	5.07	5.00	101.	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


Client: E2 Consulting Engineers, Inc.
Project Name: PG&E Topock Project
Page 3 of 6
Project Number: 424973.01.DM
Printed 6/29/2012
Metals by EPA 200.8, Total

Batch 062712A

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802320-001 Chromium	ug/L	06/27/2012 13:06	5.00	0.195	1.0	ND
Manganese	ug/L	06/27/2012 13:06	5.00	0.270	1.0	1.2

Method Blank

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

Duplicate

Lab ID = 802320-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20
Manganese	ug/L	5.00	1.19	1.17	2.03	0 - 20

Low Level Calibration Verification

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	0.220	0.200	110.	70 - 130
Manganese	ug/L	1.00	0.207	0.200	103.	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	104.	100.	104.	85 - 115

Matrix Spike

Lab ID = 802320-001

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	105.	101.(100.)	104.	75 - 125

Matrix Spike Duplicate

Lab ID = 802320-001

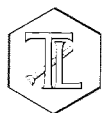
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Chromium	ug/L	5.00	106.	100.(100.)	106.	75 - 125
Manganese	ug/L	5.00	104.	101.(100.)	103.	75 - 125

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	10.1	10.0	101.	90 - 110

MRCVS - Primary

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	10.1	10.0	101.	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 6/29/2012

Total Dissolved Solids by SM 2540 C

Batch 06TDS12E

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802320-001 Total Dissolved Solids	mg/L	06/27/2012	1.00	0.757	250.	4200

Method Blank

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

Duplicate

Lab ID = 802320-001

Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Total Dissolved Solids	mg/L	1.00	4250	4200	1.18	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 06TUC12P

Parameter	Unit	Analyzed	DF	MDL	RL	Result
802320-001 Turbidity	NTU	06/27/2012	1.00	0.100	0.100	ND

Method Blank

Parameter	Unit	DF	Result
Turbidity	NTU	1.00	ND

Duplicate

Lab ID = 802320-001

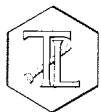
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Turbidity	NTU	1.00	ND	0.00	0	0 - 20

Lab Control Sample

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.02	8.00	100.	90 - 110

Lab Control Sample Duplicate

Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Turbidity	NTU	1.00	8.27	8.00	103.	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 6/29/2012

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.


Mona Nassimi
Manager, Analytical Services



E2 SC

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 06TDS12E
Date Analyzed: 6/28/12

[illegible]

Calculation as follows:

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)

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS1	495	500	99.0%	90-110%	Yes
LCSD					

LCS Recovery

$$P = \left(\frac{LC}{LT} \right) \times 100$$

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
802320	0.42	0.0425	81.6%	≤5%	No

Duplicate Determination Difference

$$\% \text{ Difference} = \frac{|A \text{ or } B - C|}{C} \times 100$$

where $C = \frac{A+B}{2}$

A = Weight of the first sample in (g).

B = Weight of the second sample in (q)

C = Average weight in (g).

Jenny T.

Analyst Printed Name

Analyst Signature

Hope T.

Reviewer Printed Name

Reviewer Signature

TDS/EC CHECK

Date Analyzed:	6/28/12
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Laboratory Number	EC	TDS/EC Ratio: 0.55-0.9	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
802285-2	261	0.49	169.65	0.75
802285-4	587	0.56	381.55	0.86
802320	7330	0.57	4764.5	0.88
802320D	7330	0.58	4764.5	0.89
LCS				

} BH





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-367]

802320

COC Number

TURNAROUND TIME

5 Days

DATE 06/26/12

PAGE 1 OF 1

COMPANY E2				<div style="text-align: center;"> <p>Rec'd 06/26/12</p> <p>802320</p> </div>												COMMENTS			
PROJECT NAME PG&E Topock																			
PHONE (530) 229-3303 FAX (530) 339-3303																			
ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612																			
P.O. NUMBER 424973.01.DM TEAM 1																			
SAMPLERS (SIGNATURE)				<div style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</div>															
SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr6 (218.6) Lab Filtered	Total Metals (200.7) Cr, Mn	Specific Conductance (120.1)	TDS (SM2540C)	Turbidity (SM2130)											
SC-700B-WDR-367	06/26/12	10:00	Water	x	x	x	x	x											
																	3	M = 6 (200.7)	
																	3		TOTAL NUMBER OF CONTAINERS

RUSH

ALERT !!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD					SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL <input checked="" type="checkbox"/>	WARM <input type="checkbox"/>
	ROSE FIELDS	OMI	6-26-12 1520			4.8°C
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
	Hipolito	TLI	6-26-12 1520			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:		
	Hipolito	TLI	6-26-12 2130			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			
	Shaburwaq	TLI	6/26/12 2130			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			

035

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 # 802320

Date Delivered: 06/26/12 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)? 4.8°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.c.e. ☒ Yes ☐ No ☐ N/A
13. Were all analyses within holding time at time of receipt?
If not, notify Project Manager. ☒ Yes ☐ No ☐ N/A
14. Have Project due dates been checked and accepted?
Turn Around Time (TAT): ☒ RUSH ☐ Std ☒ Yes ☐ No ☐ N/A
15. **Sample Matrix:** ☐ Liquid ☐ Drinking Water ☐ Ground Water ☐ Waste Water
☐ Sludge ☐ Soil ☐ Wipe ☐ Paint ☐ Solid ☒ Other Water

16. Comments: _____

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

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	6-5-12	10:30	6-5-12	10:35	METER#1	6-5-12	0200	-55.5	HOW PHELPS	7.4

Notes:

SC-700B	6-5-12	10:30	6-5-12	10:37	METER#1	6-5-12	0200	-55.5	HOW PHELPS	7.4
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Notes:

SC-700B	6-12-12	10:00	6-12-12	10:05	METER#1	6-12-12	100	-55.7	HOW PHELPS	7.1
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Notes:

SC-700B	6-16-12	1300	6-19-12	1305	METER#1	6-19-12	100	-55.9	HOW PHELPS	7.1
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Notes:

SC-700B	6-26-12	1000	6-26-12	1005	METER#1	6-26-12	1:00	-56.0	HOW PHELPS	7.1
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Notes:

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Notes:

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Notes:

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