Pacific Gas and Electric Company

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May 15, 2006

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: **Board Order R7-2004-0103**
WDID No. 7B 36 2033 001
PG&E Topock Compressor Station, Needles, California
Interim Measure No. 3 Groundwater Treatment System
Discharge to Injection Well(s)
April 2006 Monitoring Report

Dear Mr. Perdue:

Enclosed is the Board Order R7-2004-0103 Combined April 2006 Monitoring Report for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station, Interim Measure (IM) No. 3 Groundwater Treatment System. This report is being submitted in compliance with the Waste Discharge Requirements (WDRs) issued by the Colorado River Basin Regional Water Quality Control Board (Water Board) under Board Order R7-2004-0103.

WDRs under Board Order R7-2004-0103 apply to IM No. 3 Treatment System discharge by subsurface injection wells only. In addition, the Water Board issued WDRs for IM No. 3 Treatment System discharge to the Colorado River (Board Order R7-2004-0100) and IM No. 3 Treatment System discharge to the PG&E Compressor Station (Board Order R7-2004-0080). Reporting of Board Order R7-2004-0080 and Board Order R7-2004-0100 activities are submitted under separate covers.

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

Sincerely,

Curt Russell
Topock Onsite Project Manager

Enclosures:

Board Order R7-2004-0103 April 2006 Monitoring Report for the IM No. 3 Groundwater Treatment System.

cc: José Cortez, Water Board
Liann Chavez, Water Board
Tom Vandenberg, Water Board
Norman Shopay, DTSC

April 2006 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

Waste Discharge Requirements
Board Order No. R7-2004-0103
PG&E Topock Compressor Station
Needles, California

Prepared for

California Regional Water Quality Control Board
Colorado River Basin Region

on behalf of

Pacific Gas and Electric Company

May 15, 2006

CH2MHILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

April 2006 Monitoring Report
Interim Measures No. 3 Groundwater Treatment System
Waste Discharge Requirements Order No. R7-2004-0103
PG&E Topock Compressor Station
Needles, California

Prepared for
Pacific Gas and Electric Company

May 15, 2006

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

Dennis Fink

Dennis Fink, P.E. No. 68986
Project Engineer

Contents

Appendix

Acronyms and Abbreviations

gpm	gallons per minute
IM	Interim Measure
MBC	MBC Applied Environmental Sciences Laboratories
MRP	Monitoring and Reporting Program
PG&E	Pacific Gas and Electric Company
pst	Pacific Standard Time
STL	Severn Trent Laboratories, Inc.
Truesdail	Truesdail Laboratories, Inc.
Water Board	California Regional Water Quality Control Board, Colorado River Basin Region
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 and management of extracted groundwater. The groundwater extraction, treatment, and injection systems collectively are referred to as IM No. 3. Figure 1 provides a map of the project area (Figures are located at the end of this report).

California Regional Water Quality Control Board, Colorado River Basin Region (Water Board) Board Order No. R7-2004-0103 authorizes PG&E to inject treated groundwater into injection wells located on San Bernardino County Assessor's Parcel No. 650-151-06. The Monitoring and Reporting Program (MRP) under the order requires monthly monitoring reports to be submitted by the 15th day of the following month.

This report covers monitoring activities related to operation of the IM No. 3 groundwater treatment system during April 2006.

In addition to Board Order No. R7-2004-0103, the Water Board issued Waste Discharge Requirements (WDR) for IM No. 3 treatment system discharge to the Colorado River (Board Order R7-2004-0100) and IM No. 3 treatment system discharge to the PG&E Compressor Station (Board Order R7-2004-0080). To date, there has been no IM No. 3 treatment system discharge to the Colorado River or the PG&E Compressor Station. PG&E has no plans to discharge IM No. 3 treatment system effluent to the Colorado River or the PG&E Compressor Station at this time. Reporting of Board Order R7-2004-0080 and Board Order R7-2004-0100 activities will be submitted under separate cover.

2.0 Sampling Station Locations

Table 1 lists the locations of sampling stations (Tables are located at the end of this report). Sampling station locations are provided in the process and instrumentation diagrams: Figures TP-PR-10-10-04, TP-PR-10-10-08, and TP-PR-10-10-06.

3.0 Description of Activities

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

During April 2006, groundwater was pumped from extraction wells TW-3D and PE-1. The target groundwater extraction system pump rate was 135 gallons per minute (gpm) during April 2006 (excluding planned and unplanned downtime, which is described in Section 4.0).

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

- **Treated Effluent**: Treated water that is discharged to the injection well(s).
- **Reverse Osmosis Concentrate**: Treatment byproduct that is transported and disposed of offsite.
- **Sludge:** Treatment byproduct that is transported offsite for disposal each time a sludge waste storage bin reaches capacity or within 90 days of the start date for accumulation in the storage container.

4.0 Groundwater Treatment System Flow Rates

The April 2006 treatment system monthly average flow rates are presented in Table 2. System influent flow rate was measured by flow meters at groundwater extraction wells TW-2S, TW-2D, TW-3D, and PE-1 (Figure TP-RP-10-10-03). The treatment system effluent flow rate was measured by flow meters in the piping into injection well IW-2 and IW-3 (Figure TP-RP-10-10-11). The reverse osmosis concentrate flow rate was measured by a flow meter at the piping carrying water from reverse osmosis concentrate tank T-701 to the truck load-out station (Figure TP-RP-10-10-08).

The IM No. 3 facility also treated approximately 17,075 gallons of water generated from monitoring well development and groundwater monitoring activities during April 2005 as approved by the Regional Board on January 26, 2006, according to the conditions of Order No. R7-2004-0103.

Periods of planned and unplanned extraction system downtime during April 2006 are summarized below. The times shown are in Pacific Standard Time (pst) to be consistent with other data collected (e.g. water level data) at the site.

- **April 4, 2006 (planned)**: The IM No. 3 extraction well system was shut down from 10:24 a.m. until 4:50 p.m. to complete non-intrusive testing of the high-pressure piping on the Reverse Osmosis unit. Extraction system downtime was 6 hours 26 minutes.
- **April 5, 2006 (unplanned)**: The IM No. 3 extraction well system was shut down from 1:50 p.m. until 3:44 p.m. due to a power failure at the site. Extraction system downtime was 1 hour 54 minutes.
- **April 6, 2006 (unplanned)**: The IM No. 3 extraction well system was shut down from 1:02 p.m. until 1:12 p.m. to switch from generator power back to Needles power. Extraction system downtime was 10 minutes.
- **April 12, 2006 (unplanned)**: The IM No. 3 extraction well system was shut down from 3:22 p.m. until 5:58 p.m. due to a pump motor failure on the reverse osmosis unit. Extraction system downtime was 2 hours 36 minutes.
- **April 14, 2006 (unplanned)**: The IM No. 3 extraction well system was shut down from 3:41 p.m. until 3:56 p.m. (15 minutes) and from 6:27 p.m. to 6:37 p.m. (10 minutes) due to a power failure at the site. Extraction system downtime was 25 minutes.
- **April 19, 2006 (unplanned)**: The IM No. 3 extraction well system was shut down from 11:42 a.m. until 11:51 a.m. during a change out of microfilter modules. Extraction system downtime was 9 minutes.
- **April 26, 2006 (planned)**: The IM No. 3 extraction well system was shut down from 2:11 a.m. until 6:20 p.m. to complete general facility maintenance. Extraction system downtime was 16 hours 9 minutes.

5.0 Sampling and Analytical Procedures

All samples were collected at the designated sampling locations and placed directly into containers provided by Truesdail Laboratories, Inc. (Truesdail) or Severn Trent Laboratories, Inc. (STL). 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 or STL via courier service 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. STL is certified by the California Department of Health Services (Certification No. 1118) under the Environmental Laboratory Accreditation Program. MBC is certified by the California Department of Health Services (Certification No. 1788) under the State of California's Environmental Laboratory Accreditation Program.

All 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 United States Environmental Protection Agency.

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, reverse osmosis concentrate, and sludge sampling was conducted in accordance with the sampling frequency required by the MRP. The sampling analytical results are shown in Tables 3, 4, 5, and 6, respectively.

Groundwater quality is being monitored in observation and compliance wells according to procedures and schedules approved in the *Groundwater Compliance Monitoring Plan for Interim Measures No. 3 Injection Area* (CH2M HILL, 2005). Quarterly groundwater monitoring analytical results for the injection area are reported in a separate document, in conjunction with groundwater level maps of the same monitoring wells.

6.0 Analytical Results

Laboratory reports prepared by the certified analytical laboratory(ies) are presented in Appendix A. The analytical results from groundwater treatment system influent, effluent, reverse osmosis concentrate, and sludge samples are presented in Tables 3, 4, 5, and 6, respectively.

In accordance with the WDR reporting requirements, the following sampling frequency schedule was followed:

- The influent was sampled monthly; sample date April 5, 2006.
- The effluent was sampled weekly; sample dates April 5, 12, 20, and 27, 2006.
- The reverse osmosis concentrate was sampled monthly; sample date April 5, 2006.
- The sludge was sampled monthly; sample date April 5, 2006. WDR requirements state that sludge is to be sampled each time sludge is transported offsite unless sludge is transported offsite more frequently than monthly, in which case the sampling frequency shall be monthly. The sludge is required to have an aquatic bioassay test quarterly; an aquatic bioassay test was conducted with a sludge sample from the April 5, 2006, sampling event.

Table 7 identifies the laboratory that performed each analysis and lists the following required information:

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

7.0 Conclusions

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

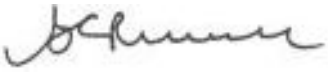
In addition, no incidents of noncompliance were identified during the reporting period, and no events that caused an immediate or potential threat to human health or the environment, or new releases of hazardous waste or hazardous waste constituents, or new solid waste management units were identified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

8.0 Certification

PG&E submitted a signature delegation letter to the Water Board on August 12, 2005. The letter delegated PG&E signature authority to Mr. Curt Russell and Ms. Yvonne Meeks for correspondence regarding Board Order R7-2004-0103.

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 Onsite Project Manager

Date: May 15, 2006

Tables

TABLE 1
Sampling Station Descriptions
April 2006 Report for IM 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 TP-RP-10-10-08).
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:
[a] The sample event is included at the end of the sample ID (e.g. SC-100B-WDR-015).

TABLE 2
Flow Monitoring Results
April 2006 Report for IM No. 3 Groundwater Treatment System

Parameter	System Influent[a,d]	System Effluent[b,d]	Reverse Osmosis Concentrate[c,d]
Average Monthly Flowrate (gpm)	128.7	116.7	11.6

gpm: gallons per minute.
[a] Extraction wells TW-3D and PE-1 were operated during April 2006.
[b] All effluent was discharged into injection wells IW-02 during April 2006.
[c] Reverse Osmosis flow meter reading from FIT-701.
[d] The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates is approximately 0.3 percent, which is within the range of acceptable accuracy considering the margin of error for onsite instrumentation, the water contained within the sludge, and differences in the inventory of water in the treatment system between the beginning and end of the reporting period.

TABLE 3
Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)
Influent Monitoring Results [a]
April 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		**Monthly**																					
Analytes		TDS	Turbidity	Specific Conductance	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
Units [b]		mg/L	NTU	µmhos/cm	pHunits	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
Sample ID	**Date**																							
SC-100B-WDR-041	4/5/2006	5740	ND (0.1)	10500	7.35	2020	2140	ND (520)	ND (0.5)	ND (3.0)	ND (5.0)	ND (300)	1.14	31.1	2.24	ND (2.0)	ND (500)	14.3	ND (20)	3.38	0.0068	686	ND (300)	197

NOTES:

(---) = not required by the WDR Monitoring and Reporting Program
µg/L = micrograms per liter
mg/L = milligrams per liter
NTU = nephelometric turbidity units
µmhos/cm = micromhos per centimeter
ND = parameter not detected at the listed reporting limit
J = concentration or reporting limits estimated by laboratory or validation

[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 WDRs

TABLE 4
Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)
Effluent Monitoring Results[a]
April 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

WDRs Effluent Limits [b]	Ave. Monthly	NA	NA	NA	6.5-8.4	25	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Max Daily	NA	NA	NA	6.5-8.4	50	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Required Sampling Frequency		**Weekly**						**Monthly**															
Analytes		TDS	Turbidity	Specific Conductance	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
Units [c]		mg/L	NTU	µmhos/cm	pHunits	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
Sample ID	**Date**																						
SC-700B-WDR-041	4/5/2006	4270	ND (0.1)	7900	7.59	ND (1.0)	ND (1.0)	ND (520)	ND (0.5)	ND (3.0)	ND (5.0)	ND (300)	0.997	32.7	2.18	ND (2.0)	ND (500)	9.20	ND (20)	2.47	0.0179	480	ND (300)	406
SC-700B-WDR-042	4/12/2006	4510	ND (0.1)	8290	7.76	ND (1.0)	ND (1.0)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SC-700B-WDR-043	4/20/2006	3310	ND (0.1)	6490	7.38	ND (1.0)	ND (1.0)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SC-700B-WDR-044	4/27/2006	4120	0.192 J	7670	7.99	6.50	ND (1.0)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

NOTES:

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

a 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)

b In addition to the listed effluent limits, the WDRs 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 WDRs

TABLE 5
Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)
Reverse Osmosis Concentrate Results [a]
April 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		**Monthly**																				
Analytes / **Units** [b] / **Sample ID**	**Date**	TDS mg/L	Specific Conductance µmhos/cm	pH pHunits	Chromium mg/L	Hexavalent Chromium mg/L	Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Cadmium mg/L	Cobalt mg/L	Copper mg/L	Fluoride mg/L	Lead mg/L	Molybdenum mg/L	Mercury mg/L	Nickel mg/L	Selenium mg/L	Silver mg/L	Thallium mg/L	Vanadium mg/L	Zinc mg/L
SC-701-WDR-041	4/5/2006	22900	37800	7.81	ND (0.001)	ND (0.002)	ND (0.003)	ND (0.005)	ND (0.3)	ND (0.0052)	ND (0.0052)	ND (0.01)	0.0455	1.70	ND (0.0052)	0.0641	ND (0.0002)J	ND (0.02)	ND (0.021)	ND (0.01)	ND (0.0052)	0.0311	0.0231

NOTES:

(---) = not required by the WDR Monitoring and Reporting Program
µg/L = micrograms per liter
mg/L = milligrams per liter
µmhos/cm = micromhos per centimeter
ND = parameter not detected at the listed reporting limit
J = concentration or reporting limits estimated by laboratory or validation

[a] Sampling Location for all Reverse Osmosis Samples is tap on pipe T-701 (see attached P&ID TP-PR-10-10-08)

[b] Units reported in this table are those units required in the WDRs

TABLE 6
Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)
Sludge Monitoring Results[a]
April 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		Monthly [c]																		Quaterly [d]		
Sample ID	Date / Analytes / Units [b]	Chromium mg/kg	Hexavalent Chromium mg/kg	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Cobalt mg/kg	Copper mg/kg	Fluoride mg/kg	Lead mg/kg	Molybdenum mg/kg	Mercury mg/kg	Nickel mg/kg	Selenium mg/kg	Silver mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg	Bioassay % Survival at 750 mg/L [e]	Bioassay % Survival at 500 mg/L [e]	Bioassay % Survival at 250 mg/L [e]
SC-Sludge-WDR-041	4/5/2006	21000	97.0	ND (45)J	14.0	96.0	ND (3.8)	ND (3.8)	ND (38)	130	9.12	ND (3.8)	58.0	3.30 J	44.0	4.90	ND (7.5)	15.0	97.0	36.0	100	100	100

NOTES:

(---) = not required by the WDR Monitoring and Reporting Program
ND = parameter not detected at the listed reporting limit
J = concentration or reporting limits estimated by laboratory or validation
mg/kg = milligrams per kilogram
mg/L = milligrams per liter

[a] Sampling Location for all Sludge Samples is the Sludge Collection Tanks (see attached P&ID TP-PR-10-10-06)

[b] Units reported in this table are those units required in the WDR

[c] Sludge shall be tested for the listed constituents each time sludge is transported offsite, unless transport is more frequent than monthly, in which case the sampling frequency shall be monthly.

[d] Sludge shall have an aquatic bioassay test performed each time sludge is transported offsite, unless transport is more frequent than quaterly, in which case the sampling frequency shall be quaterly.

[e] Concentration of sludge per 1 liter of water.

TABLE 7
Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)
Monitoring Information
April 2006 Monthly Report for Interim Measures 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-041	J. Lundberg	4/5/2006	3:15:00 PM	TLI	EPA 120.1	SC	4/6/2006	Emilia Haley
					TLI	EPA 150.1	PH	4/6/2006	Emilia Haley
					TLI	EPA 160.1	TDS	4/6/2006	Emilia Haley
					TLI	EPA 180.1	TRB	4/6/2006	Gautam Savani
					TLI	EPA 200.7	MN	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	NI	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	FE	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	CRT	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	BA	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	B	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	AL	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	ZN	4/11/2006	Riddhi Patel
					TLI	EPA 200.8	AS	4/11/2006	Victoria Than
					TLI	EPA 200.8	CU	4/11/2006	Victoria Than
					TLI	EPA 200.8	MO	4/11/2006	Victoria Than
					TLI	EPA 200.8	PB	4/11/2006	Victoria Than
					TLI	EPA 200.8	SB	4/11/2006	Victoria Than
					TLI	EPA 300.0	SO4	4/6/2006	Vanna Kho
					TLI	EPA 300.0	FL	4/6/2006	Vanna Kho
					TLI	EPA 300.0	NO3N	4/6/2006	Vanna Kho
					TLI	EPA 350.2	NH3N	4/10/2006	Alex Hernandez
					TLI	EPA 354.1	NO2N	4/7/2006	Hope Trinidad
					TLI	EPA Method 218.6	CR6	4/6/2006	Jorge Arriaga
SC-700B	SC-700B-WDR-041	J. Lundberg	4/5/2006	3:15:00 PM	TLI	EPA 120.1	SC	4/6/2006	Emilia Haley
					TLI	EPA 150.1	PH	4/6/2006	Emilia Haley
					TLI	EPA 160.1	TDS	4/6/2006	Emilia Haley
					TLI	EPA 180.1	TRB	4/6/2006	Gautam Savani
					TLI	EPA 200.7	BA	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	ZN	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	NI	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	MN	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	CRT	4/7/2006	Riddhi Patel
					TLI	EPA 200.7	B	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	AL	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	FE	4/11/2006	Riddhi Patel
					TLI	EPA 200.8	AS	4/11/2006	Victoria Than
					TLI	EPA 200.8	CU	4/11/2006	Victoria Than

TABLE 7
Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)
Monitoring Information
April 2006 Monthly Report for Interim Measures 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-041	J. Lundberg	4/5/2006	3:15:00 PM	TLI	EPA 200.8	MO	4/11/2006	Victoria Than
					TLI	EPA 200.8	PB	4/11/2006	Victoria Than
					TLI	EPA 200.8	SB	4/11/2006	Victoria Than
					TLI	EPA 300.0	FL	4/6/2006	Vanna Kho
					TLI	EPA 300.0	SO4	4/6/2006	Vanna Kho
					TLI	EPA 300.0	NO3N	4/6/2006	Vanna Kho
					TLI	EPA 350.2	NH3N	4/10/2006	Alex Hernandez
					TLI	EPA Method 218.6	CR6	4/6/2006	Jorge Arriaga
SC-700B	SC-700B-WDR-042	J. Lundberg	4/12/2006	3:30:00 PM	TLI	EPA 120.1	SC	4/14/2006	Alex Hernandez
					TLI	EPA 150.1	PH	4/13/2006	Alex Hernandez
					TLI	EPA 160.1	TDS	4/13/2006	Emilia Haley
					TLI	EPA 180.1	TRB	4/13/2006	Gautam Savani
					TLI	EPA 200.7	CRT	4/13/2006	Victoria Than-Thiem
					TLI	EPA Method 218.6	CR6	4/13/2006	Jorge Arriaga
SC-700B	SC-700B-WDR-043	Gary Sibble	4/20/2006	1:18:00 PM	TLI	EPA 120.1	SC	4/21/2006	Alex Hernandez
					TLI	EPA 150.1	PH	4/21/2006	Alex Hernandez
					TLI	EPA 160.1	TDS	4/21/2006	Emilia Haley
					TLI	EPA 180.1	TRB	4/21/2006	Gautam Savani
					TLI	EPA 200.7	CRT	4/28/2006	Riddhi Patel
					TLI	EPA Method 218.6	CR6	4/20/2006	Jorge Arriaga
SC-700B	SC-700B-WDR-044	Gary Sibble	4/27/2006	1:15:00 PM	TLI	EPA 120.1	SC	4/28/2006	Alex Hernandez
					TLI	EPA 150.1	PH	4/28/2006	Alex Hernandez
					TLI	EPA 160.1	TDS	5/1/2006	Emilia Haley
					TLI	EPA 180.1	TRB	5/2/2006	Gautam Savani
					TLI	EPA 200.8	CRT	5/3/2006	Victoria Than-Thiem
					TLI	EPA Method 218.6	CR6	4/28/2006	Jorge Arriaga
SC-701	SC-701-WDR-041	J. Lundberg	4/5/2006	3:15:00 PM	TLI	EPA 120.1	SC	4/6/2006	Emilia Haley
					TLI	EPA 150.1	PH	4/6/2006	Emilia Haley
					TLI	EPA 160.1	TDS	4/6/2006	Emilia Haley
					TLI	EPA 200.7	BA	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	CRT	4/7/2006	Riddhi Patel
					TLI	EPA 200.7	NI	4/11/2006	Riddhi Patel
					TLI	EPA 200.7	ZN	4/11/2006	Riddhi Patel
					TLI	EPA 200.8	CU	4/11/2006	Victoria Than
					TLI	EPA 200.8	AG	4/11/2006	Victoria Than
					TLI	EPA 200.8	AS	4/11/2006	Victoria Than

TABLE 7
Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)
Monitoring Information
April 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-701	SC-701-WDR-041	J. Lundberg	4/5/2006	3:15:00 PM	TLI	EPA 200.8	BE	4/11/2006	Victoria Than
					TLI	EPA 200.8	CO	4/11/2006	Victoria Than
					TLI	EPA 200.8	MO	4/11/2006	Victoria Than
					TLI	EPA 200.8	PB	4/11/2006	Victoria Than
					TLI	EPA 200.8	SB	4/11/2006	Victoria Than
					TLI	EPA 200.8	SE	4/14/2006	Victoria Than
					TLI	EPA 200.8	TL	4/11/2006	Victoria Than
					TLI	EPA 200.8	V	4/11/2006	Victoria Than
					TLI	EPA 200.8	CD	4/11/2006	Victoria Than
					TLI	EPA 245.1	HG	4/7/2006	Victoria Than
					TLI	EPA 300.0	FL	4/6/2006	Vanna Kho
					TLI	EPA Method 218.6	CR6	4/6/2006	Jorge Arriaga
SC-Sludge	SC-Sludge-WDR-041	J. Lundberg	4/5/2006	3:45:00 PM	STL	EPA 160.3	MOIST	4/11/2006	Florian Zimmermann
					TLI	EPA 300.0	FL	4/6/2006	Giawad Ghenniwa
					STL	EPA 6010B	SE-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	MO	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	NI	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	NI-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	PB	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	PB-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	PB-TCLP	4/21/2006	Josephine Asuncion
					STL	EPA 6010B	SB	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	SE	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	CU-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	SE-TCLP	4/21/2006	Josephine Asuncion
					STL	EPA 6010B	TH-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	TL	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	V	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	VA-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	ZN	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	ZN-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	SB-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	BA-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	AG	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	AG-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	AG-TCLP	4/21/2006	Josephine Asuncion
					STL	EPA 6010B	AS	4/11/2006	Josephine Asuncion

TABLE 7
Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)
Monitoring Information
April 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-Sludge	SC-Sludge-WDR-041	J. Lundberg	4/5/2006	3:45:00 PM	STL	EPA 6010B	AS-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	MO-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	BA	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	CU	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	BA-TCLP	4/21/2006	Josephine Asuncion
					STL	EPA 6010B	CRT	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	AS-TCLP	4/21/2006	Josephine Asuncion
					STL	EPA 6010B	CRT-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	BE	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	CO-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	CO	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	CD-TCLP	4/21/2006	Josephine Asuncion
					STL	EPA 6010B	CD-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	CD	4/11/2006	Josephine Asuncion
					STL	EPA 6010B	BE-STLC	4/25/2006	Josephine Asuncion
					STL	EPA 6010B	CRT-TCLP	4/21/2006	Josephine Asuncion
					STL	EPA 7471A	HG	4/12/2006	Hao Ton
					STL	EPA 7471A	HG-STLC	4/25/2006	Hao Ton
					STL	EPA 7471A	HG-TCLP	4/21/2006	Hao Ton
					STL	SW 7199	CR6	4/7/2006	Yuriy Zakhrabov
					STL	SW 7199	CR6	4/21/2006	Yuriy Zakhrabov

TABLE 7
Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)
Monitoring Information
April 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-Sludge	SC-Sludge-WDR-041	J. Lundberg	04/05/2006	3:45:00 PM	MBC	96-Hour Acute Aquatic Toxicity Screening Test	BIO	04/11/2006 - 04/15/2006	Chris Lim, Brandie L. Smith, and Catherine L. Gongol

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 TP-PR-10-10-08)

TLI = Truesdail Laboratories, Inc.
STL = Severn Trent Laboratories, Inc.

SC = specific conductance
PH = pH
TDS = total dissolved solids
TRB = turbidity
CRT = chromium
CR6 = hexavalent chromium
FL = fluoride
AL = aluminum
B = boron
FE = iron
MN = manganese
ZN = zinc
SB = antimony
AS = arsenic
BA = barium
CU = copper
MO = molybdenum
NI = nickel
PB = lead
HG = mercury
SE = selenium
TL = thallium
CO = cobalt
CD = cadmium
BE = beryllium
AG = silver
V = vanadium
NO3N = nitrate (as N)
NH3N = ammonia (as N)
NO2N = nitrite (as N)
SO4 = sulfate

Figures

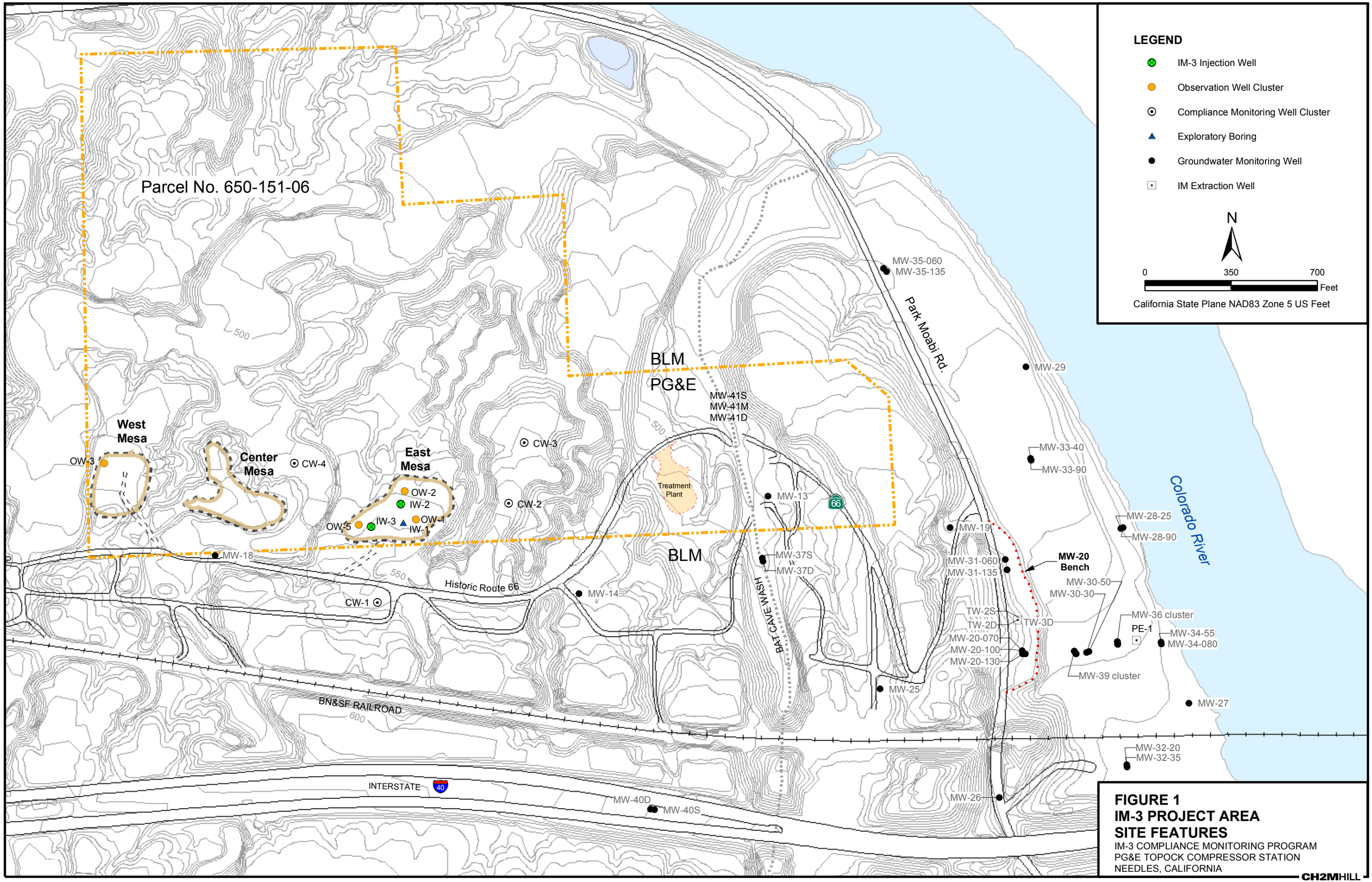


FIGURE 1
IM-3 PROJECT AREA
SITE FEATURES
IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

BAO \\ZINFANDEL\PROJ\PACIFICGASELECTRICCO\TOPOCKPROGRAM\GIS\MXD\2006\IM3_PROJECT_AREA.MXD IM3_PROJECT_AREA.PDF 3/9/2006 15:54:15

CONTROL PANEL LCP-100

WELL TW-3D CONTROL

WELL TW-2S CONTROL

WELL TW-2D CONTROL

WELL PE-1 CONTROL

LEAK DETECTION PANEL - 003

ALM

120V

LSH LVL RUN ON RM PRESS FLOW

LSHH

HOA

HS 102

HS 100

HS 101

HS 103

HOLD

LSH 002

LSHH 002

FUTURE

4"-RW-140-1HB

V-RW-140-01

VALVE VAULT No. 2

4" IN 8"-RW-141-1KB

NOTE 1

4"-RW-139-1HB

V-RW-139-01

4" IN 8"-RW-142-1KB

3"-RW-138-1HB

V-RW-138-01

3" IN 6"-RW-137-1KB

4"-RW-105-1HB

V-RW-105-05

4" IN 8"-FUTURE

4" IN 8"-RW-135-1KB

LSH 102A

NOTE 1

FI 102

LSH 001

LSHH 001

VENT

LT 100

PIT 100

FE 100

FIT 100

PE 100

V-1390

Well TW-2S Flowmeter

3"x2"

V-RW-105-02

MAG

3"-RW-105-1HB THROTTLING

V-RW-105-01

VALVE VAULT No. 1

3" IN 6"-RW-104-1KB

LSH 100A

NOTE 1

1"

V-1390

LT 101

PIT 101

FE 101

FIT 101

PE 101

Well TW-2D Flowmeter

4" x 3"

EJ-RW-105-01

V-RW-102-02

3"-RW-102-1HB THROTTLING

V-RW-102-01

3" IN 6"-RW-101-1KB

LSH 101A

NOTE 1

4" IN 8"-RW-127-1KB SPARE

4" IN 8"-RW-127-1KB

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

SPARE TO VALVE VAULT 4

NOTES 1 & 2

V-RW-105-06 THROTTLING

V-RW-105-03

V-RW-105-04

4" IN 8"-RW-107-1KB

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

TO RAW WATER STORAGE

V-RW-108-02 THROTTLING

4"-RW-130-1HB

V-RW-130-02

V-RW-130-01

Well PE-1 Flowmeter

LT 103

PIT 103

FE 103

FIT 103

PE 103

V-RW-108-01

3"-RW-108-1HB

4" IN 8"-RW-131-1KB

NOTE 1

LSH

TO BAKER TANKS V-RW-131-01

LSH 103A

NOTE 1

4" IN 8"-RW-133-1KB

4"x3"

V-RW-132-02

V-RW-132-01

3"-RW-132-1HB

3"x2"

Well TW-3D Flowmeter

VENT

LT 102

PI 102

PIT 102

FIT 102

PRV 102

PE 102

FE 102

LSH 102

SET AT 120 PSI

V-1390

3"x2"

3"-RW-134-1HB

V-RW-134-01

MAG

4"x3"

V-RW-134-02

WELL VAULT No. 4

P-102

LE 102

EXTRACTION WELL TW-3D

135 GPM x 248 FT. H20

PI 100

LSH 100

V-RW-103-02

3"-RW-103-1HB

V-RW-103-01

WELL VAULT No. 2

P-100

LE 100

EXTRACTION WELL TW-2S

40 GPM x 180 FT. H20

PI 101

PRV 101

LSH 101

V-RW-100-02

3"-RW-100-1HB

V-RW-100-01

WELL VAULT No. 1

P-101

LE 101

EXTRACTION WELL TW-2D

90 GPM x 245 FT. H20

PI 103

PRV 103

LSH 103

WELL VAULT No. 3

P-103

LE 103

EXTRACTION WELL PE-1

40 GPM x 235 FT. H20

NOTES

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

NO.	DATE	REVISION	BY	CHK
8	12/07/05	REMOVED PE-1 HOLDS	JBW	SDH
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ
3	03/16/05	DELETED NOTES. APPROVED FOR CONSTRUCTION	EFC	AJ
4	07/20/05	RELIEF VALVE SETTINGS. WELL PE-1 LINE TAGS. HOLDS REMOVED. APPROVED FOR CONSTRUCTION	EFC	AJ
5	09/27/05	FINAL RECORD ISSUE	EFC	AJ
6	10/06/05	REVISED FINAL RECORD – ADDED TW-3D	EFC	AJ
7	10/19/05	REVISED AS NOTED	EFC	AJ

REVISION APPROVAL		REV 8 DATE 12/06/05	
DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED
CIVIL	—	ELECTRICAL	—
STRUCTURAL	—	INST & CONTROL	—
MECHANICAL	AJ	ARCHITECTURAL	—
PROCESS	—	ENVIRONMENTAL	—
PIPING	SDH	GEN. ARRANG.	—

PRINT DISTRIBUTION

DATE	
STATUS	
REV.	
CLIENT	
FIELD	
INTRA CO.	

STATUS	REV	DATE	SDE	PEM
ISSUED				
PRELIMINARY				
FOR REVIEW AND APPROVAL	D	07/28/04		
APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP
REVISED & APPROVED FOR CONSTRUCTION	7	12/9/05	for KLM	AJ

SCALE NONE

RESPONSIBLE ENGINEER: Kenneth L. Martins CH4876 Exp. 6-30-06

REGISTERED PROFESSIONAL ENGINEER — KENNETH L. MARTINS — No. CH4876 — Exp. 6-30-06 — CIVIL — STATE OF CALIFORNIA

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

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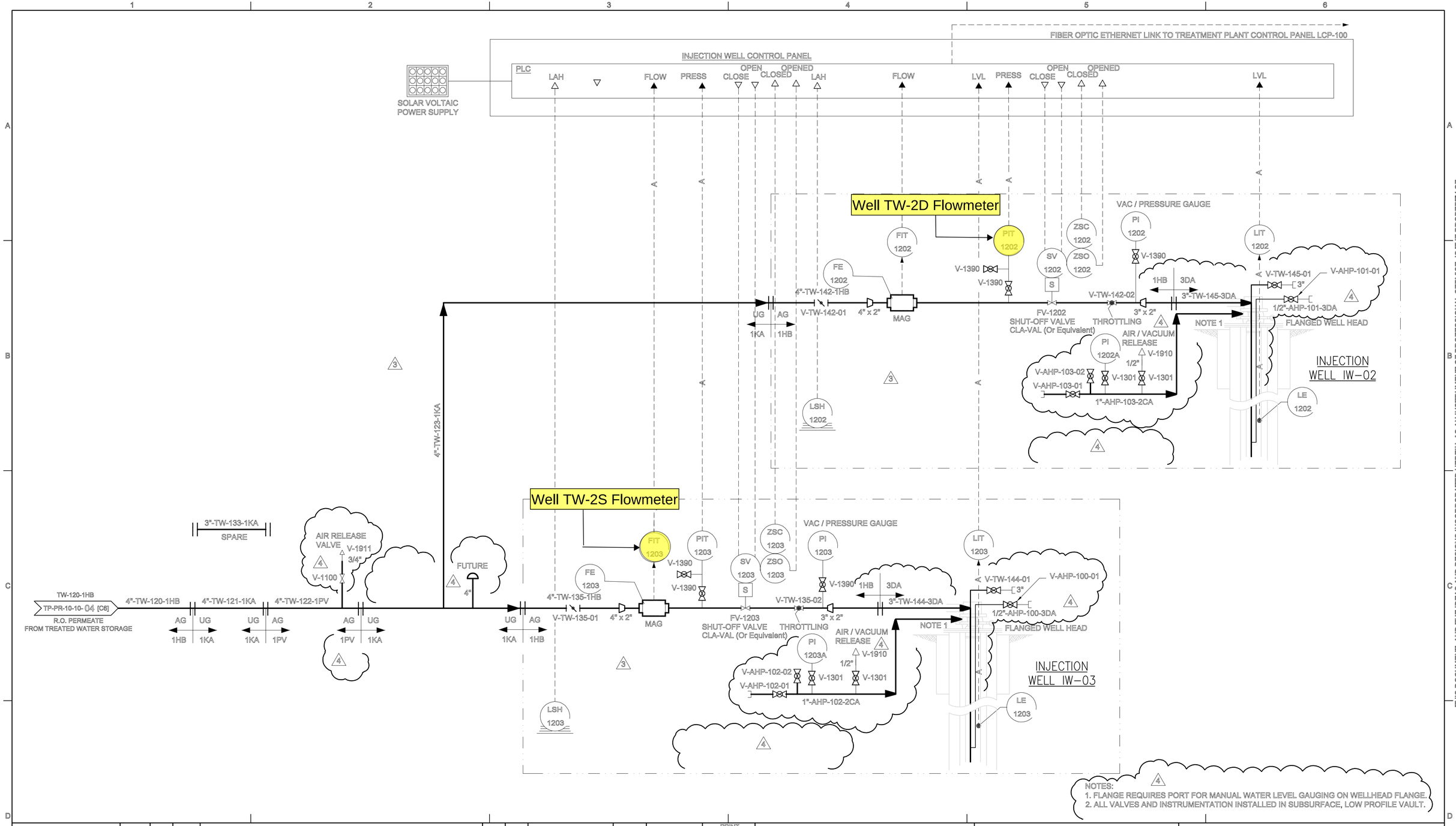
FILENAME: tppr101003.dwg PLOT DATE: 19-OCT-2005 PLOT TIME:



NO.	DATE	REVISION	BY	CHK
A	07/28/04	FOR INTERNAL REVIEW	EFC	AJ
0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ
3	02/14/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ
4	03/10/05	REMOVED HOLD AND APPROVED FOR CONSTRUCTION	EFC	AJ

REVISION APPROVAL		REV 4	DATE 03/10/05	PRINT DISTRIBUTION	
DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE	
CIVIL		ELECTRICAL		STATUS	
STRUCTURAL		INST & CONTROL		REV.	
MECHANICAL		ARCHITECTURAL		CLIENT	
PROCESS		ENVIRONMENTAL		FIELD	
PIPING		GEN. ARRANG.		INTRA CO.	

STATUS				
ISSUED	REV	DATE	SDE	PEM
PRELIMINARY				
FOR REVIEW AND APPROVAL	A	07/28/04		
APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP
REVISED & APPROVED FOR CONSTRUCTION	4	/ /		

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

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 11
INJECTION WELLS

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

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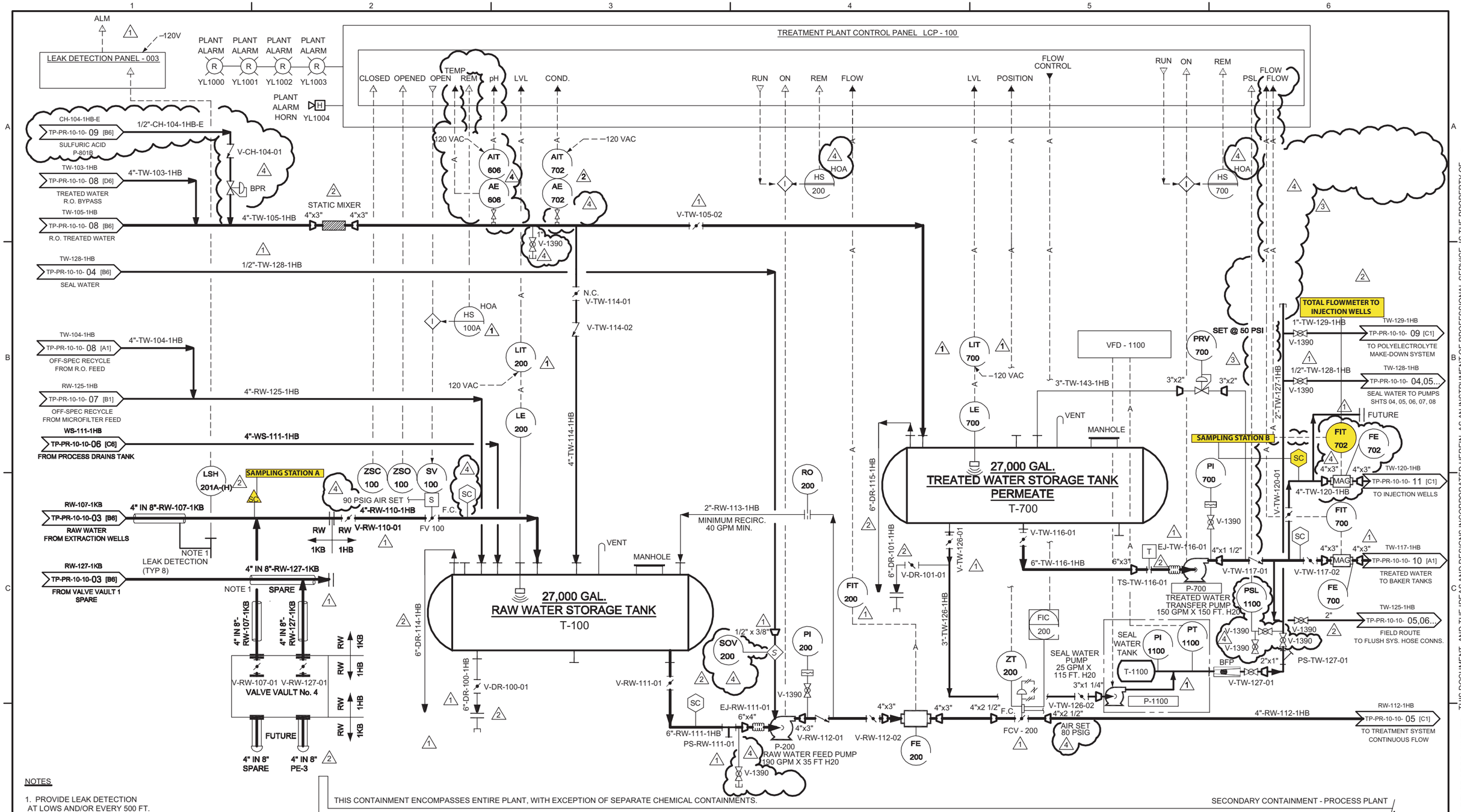

NOTES

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

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

SECONDARY CONTAINMENT - PROCESS PLANT

NO.	DATE	REVISION	BY	CHK
0	07/28/04	FOR INTERNAL REVIEW	EFC	AJ
0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ
3	02/14/05	ADDED RECIRC. LINE AND PRV VALVE TO T-700 – APPROVED FOR CONSTRUCTION	EFC	AJ
4	09/21/05	REVISED PER AS-BUILT CONDITIONS	EFC	AJ

REVISION APPROVAL					
DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE	REV 4 DATE 09/21/05
CIVIL		ELECTRICAL		STATUS	
STRUCTURAL		INST & CONTROL		REV.	
MECHANICAL		ARCHITECTURAL		CLIENT	
PROCESS		ENVIRONMENTAL		FIELD	
PIPING		GEN. ARRANG.		INTRA CO.	

PRINT DISTRIBUTION

STATUS	REV	DATE	SDE	PEM
ISSUED				
PRELIMINARY				
FOR REVIEW AND APPROVAL	D	07/28/04		
APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP
REVISED & APPROVED FOR CONSTRUCTION	4	/ /		

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

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 04
STORAGE AREA

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

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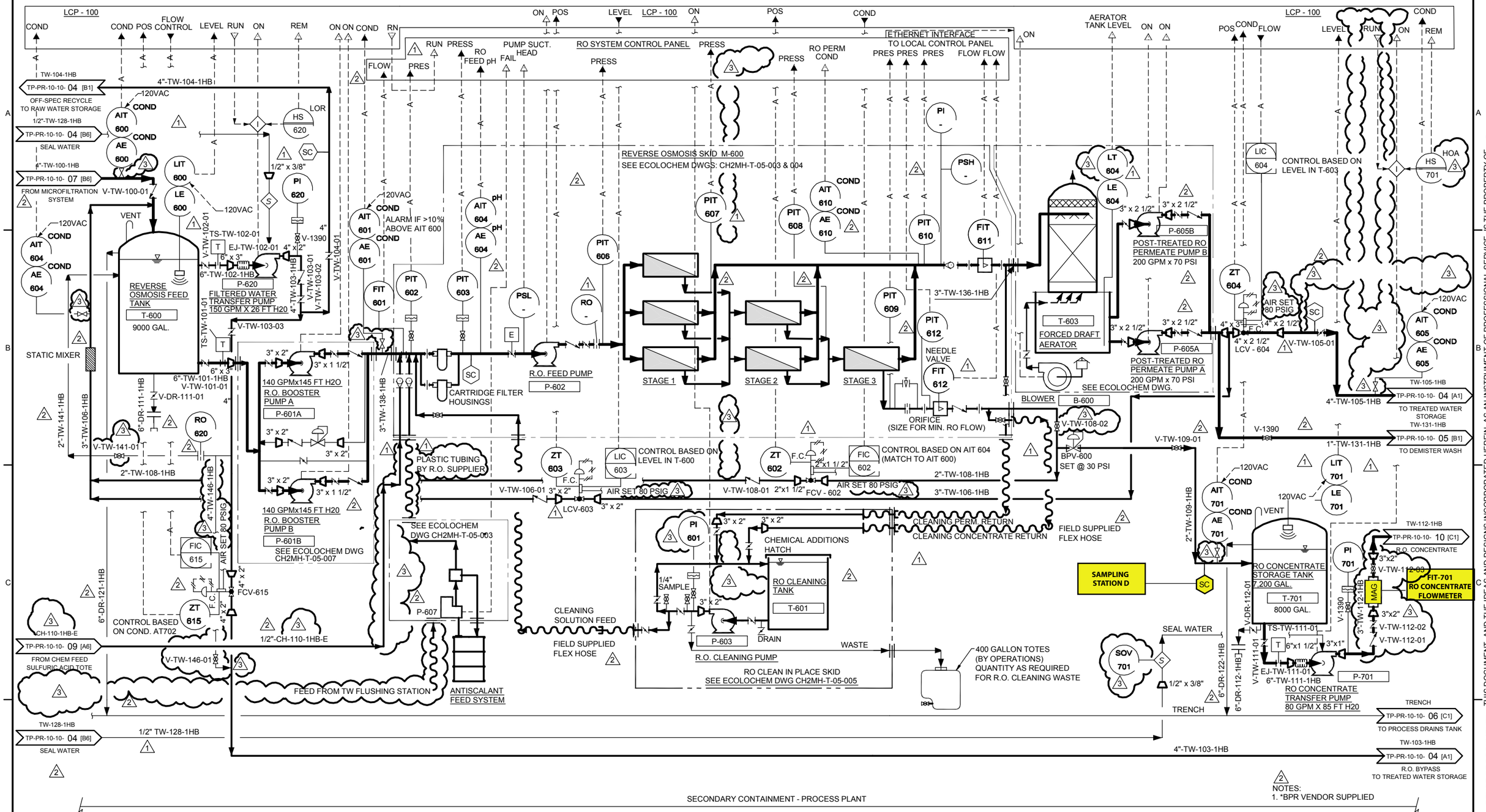

NO.	DATE	REVISION	BY	CHK
D	07/28/04	FOR INTERNAL REVIEW	EFC	AJ
0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ
3	09/21/05	REVISED PER AS-BUILT CONDITIONS	EFC	AJ

REVISION APPROVAL		REV 3 DATE 09/21/05		PRINT DISTRIBUTION
DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE
CIVIL		ELECTRICAL		STATUS
STRUCTURAL		INST & CONTROL		REV.
MECHANICAL		ARCHITECTURAL		CLIENT
PROCESS		ENVIRONMENTAL		FIELD
PIPING		GEN. ARRANG.		INTRA CO.

STATUS	REV	DATE	SDE	PEM
ISSUED				
PRELIMINARY				
FOR REVIEW AND APPROVAL	D	07/28/04		
APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP
REVISED & APPROVED FOR CONSTRUCTION	3	/ /		

RESPONSIBLE ENGINEER: Kenneth L. Martins PE # CH4876 Exp. 6-30-06

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 08
REVERSE OSMOSIS SYSTEM

DWG. NO. TP-PR-10-10-08 REV. 3

FILENAME: tppr101008.dwg PLOT DATE: 21-SEP-2005 PLOT TIME:

BAR IS ONE INCH ON ORIGINAL DRAWING

CONTROL PANEL

PLC

REM ON RUN REM ON RUN HI TORQUE REM ON RUN CLOSE OPEN CLOSE OPEN REM REM OPEN OPEN LAH TURB OPEN REM RUN LVL ON REM REM LT ON RUNOPEN LAH RM OPEN REM LAH LAH

HS 400A LOR | HS 400B LOR | HS 400C LOR | HS 401 HOA | HS 402 LOR | HS 404 HOA

CH-109-1HB-E
TP-PR-10-10- 09 [C6]
POLYELECTROLYTE FEED CH-108-1HB-E
1/2"-CH-109-1HB-E
V-CH-109-01

TP-PR-10-10- 09 [C6]
POLYELECTROLYTE FEED
1/2"-CH-108-1HB-E
V-CH-108-01

HS 400 HOA | HS 410 HOA | NSH 400 TORQUE | AIT 400 TURB 120VAC | LIT 402 120VAC | SV 404

RW-121-1HB
TP-PR-10-10- 05 [C6]
FROM CHEM REDUCTION AND COAGULATION SYSTEM IA-104-3DV
4"-RW-121-1HB

TP-PR-10-10- 09 [D6]
90 PSIG AIR
1"-IA-104-3DV

M-400-A | M-400-B | M-400-C

CL-400 CLARIFIER

6"-DR-107-1HB

SEE PARKSON DRAWING 10066701-01

SV 400 | ZSC 400 ZSO 400 AIR SET 120 PSIG F. C. FV - 400 | AE 400 TURB | SV 401 120 PSIG AIR SET | PI 401 PE 401 | LE 402 | M-402

4"-WS-102-1HB

1/4" / 1" SLOPE TO PRE-TREATED WATER TANK

6"-RW-122-1HB

RW-122-1HB
TP-PR-10-10- 07 [B1]
MICROFILTRATION SYSTEM

120 PSIG AIR SET | HS 403 HOA | SV 403 | PI 404 | PE 404 | V-WS-103-01 | V-WS-103-02

WS-103-1HB
TP-PR-10-10- 05 [B1]
SLUDGE RECYCLE

P-404 SLUDGE RECYCLE PUMP 20 GPM X 30 FT. H2O

2"-WS-103-1HB | V-WS-109-01 | 2"-WS-109-1HB

ZSC 410 ZSO 410 AIR SET 120 PSIG F. C. FV - 410 | SV 410

V-WS-104-01

4"-WS-100-1HB

2"-WS-101-1HB | V-WS-101-01 | P-401 SLUDGE WITHDRAWAL PUMP 20 GPM X 30 FT. H2O

SLUDGE HOLDING TANK 6000 GAL T-402 | VENT | DECANT

2" V-1790 (TYP 5) | 4" (TYP 5) AIR/SIGHT GAP 4"

PI 403 PE 403

3% - 5% SOLIDS | 2"-WS-105-1HB | V-WS-105-01 | P-403 SEPARATOR FEED PUMP 20 GPM X 30 FT. H2O | 2"-WS-106-1HB | V-WS-106-01

HS 900 LOR | V-WS-108-01 | 4"-WS-108-1HB | 2"-WS-107-1HB | V-WS-107-01

4"-WS-110-1HB

TRUCK FILL FOR OFF-SITE DISPOSAL

V-WS-110-01

LIT 900 120VAC | LE 900 | 1/2" x 3/8" | VENT

V-WS-111-02 | V-WS-111-03 | 4"-WS-111-1HB | V-WS-111-01 | PS-WS-111-01 | V-1390 | 1"-DR-106-1HB

WS-111-1HB
TP-PR-10-10- 04 [B1]
TO RAW WATER STORAGE TANK

LSH 405B | FH-WS-106-01 | LSH 405A | SAMPLING STATION E

V-WS-113-01 | 2"-WS-113-1HB | 4" x 2"

UNIT 2 CAKE CAKE | UNIT 1 CAKE CAKE

FH-WS-112-02 | 2"-WS-112-1HB | FH-WS-112-01

LSHH 405

480 VAC | LCP - 405

P-405 PHASE SEPARATOR SUMP PUMP PACKAGE 25 GPM x 25 FT. H2O

PUMPOUT VAULT

PS-405 PHASE SEPARATORS ALTERNATING DURING OPERATION

TRENCH
TP-PR-10-10- 08 [D6]
R.O. GRAVITY DRAINS
TRENCH

DR-109-1HB
TP-PR-10-10- 07 [C6]
FROM M.F. SYSTEM GRAVITY DRAIN
3"-DR-109-1HB

TRENCH
TP-PR-10-10- 07 [D6]
FROM M.F. SYSTEM PRETREATED WATER TANK
TRENCH

4"-WS-104-1HB

DR-110-1HB
TP-PR-10-10- 07 [C6]
FILTER BACKWASH FROM MICROFILTRATION SYSTEM
4"-DR-110-1HB

TRENCH
TP-PR-10-10- 05 [D6]
GRAVITY DRAIN
TRENCH

TW-128-1HB
TP-PR-10-10- 04 [B6]
SEAL WATER
1/2"-TW-128-1HB

SECONDARY CONTAINMENT - PROCESS PLANT

T-900A PROCESS SUMP NOTE 1

PROCESS DRAIN TANK 5,000 GAL. T-900 | P-900 PROCESS DRAIN PUMP | LSH 900 | V-DR-113-01 | VERTICAL WET PIT 175 GPM x 37 FT. H2O | 6"-DR-113-1HB

NOTES:

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

NO.	DATE	REVISION	BY	CHK
0	07/28/04	FOR INTERNAL REVIEW	EFC	AJ
0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ

REVISION APPROVAL		REV 2	DATE 01/23/05
DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED
CIVIL		ELECTRICAL	
STRUCTURAL		INST & CONTROL	
MECHANICAL		ARCHITECTURAL	
PROCESS		ENVIRONMENTAL	
PIPING		GEN. ARRANG.	

PRINT DISTRIBUTION: DATE | STATUS | FIELD | CLIENT | INTRA CO.

STATUS	REV	DATE	SDE	PEM
PRELIMINARY				
FOR REVIEW AND APPROVAL	D	07/28/04		
APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP
REVISED & APPROVED FOR CONSTRUCTION	2	01/23/05		

SCALE NONE

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

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 06
CLARIFICATION AND SLUDGE REMOVAL

DWG. NO. TP-PR-10-10-06 REV. 2

FILENAME: tppr101006.dwg PLOT DATE: 23-JAN-2005 PLOT TIME:

BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

Appendix A
Laboratory Analytical Reports

Table of Contents
TLI Laboratory Data Package

For Laboratory Number: 953517

Section 1.0

Case Narrative

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

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

April 27, 2006

CH2M HILL
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: REVISED CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-041 PROJECT, GROUNDWATER MONITORING,

TLI NO.: 953517

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-041 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, Dissolved Silica, Total Organic Carbon, Ammonia, Total Phosphorus, Nitrite as N, Anions, Title 22 Metals, 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 5, 2006, 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.

During Mercury analysis by EPA 245.1, due to a strong matrix interference, the Matrix Spike recovery at 1X and 2X was below the acceptance limit.

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

K.R.P. Iyer
Quality Assurance/Quality Control Officer

CC: Mr. Mark Cichy, CH2M HILL Redding CA

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www.truesdail.com

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00

Laboratory No.: 953617
Date: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006

ANALYST LIST

EPA 120.1	Specific Conductivity	Emilia Haley
EPA 150.1	pH	Emilia Haley
EPA 160.1	Total Dissolved Solids	Emilia Haley
EPA 365.2	Total Phosphorus	Hope Trinidad
EPA 370.1	Dissolved Silica	Hope Trinidad
EPA 415.2	Total Organic Carbon	Hope Trinidad
EPA 180.1	Turbidity	Gautam Savani
EPA 300.0	Anions	Vanna Kho
EPA 350.2	Ammonia	Alex Hernandez
EPA 354.1	Nitrite as N	Hope Trinidad
EPA 200.7	Metals by ICP	Riddhi Patel
EPA 200.8	Metals by ICP/MS	Victoria Than
EPA 245.1	Mercury	Victoria Than
EPA 218.6	Hexavalent Chromium	Jorge Arriaga

Section 2.0

Summary Table of Final Results

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Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953517
Date Received: April 5, 2006
Date Revised: May 9, 2006

Analytical Results Summary

Lab I.D.	Sample I.D.	Sample Time	EPA 150.1 *pH*	EPA 120.1 *EC*	EPA 160.1 *TDS*	EPA 180.1 *Turbidity*	EPA 218.6 *Hexavalent Chromium*	EPA 350.2 *Ammonia*	EPA 300.0 *Chloride*
			Units	*µmhos/cm*	*mg/L*	*NTU*	*mg/L*	*mg/L*	*mg/L*
953517-1	SC-700B-WDR-041	15:15	7.59	7900	4270	ND	ND	ND	—
953517-2	SC-100B-WDR-041	15:15	7.35	10500	5740	ND	2.14	ND	2740
953517-3	SC-701-WDR-041	15:15	7.81	37800	22900	—	ND	—	—

Lab I.D.	Sample I.D.	Sample Time	EPA 300.0 *Fluoride*	EPA 300.0 *Sulfate*	EPA 300.0 *Nitrate as N*	EPA 354.1 *Nitrite as N*	EPA 370.1 *Dissolved Silica*	EPA 365.2 *Total Phosphorus*
			mg/L	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
953517-1	SC-700B-WDR-041	15:15	2.18	480	2.47	0.0179	—	—
953517-2	SC-100B-WDR-041	15:15	2.24	686	3.38	0.0068	22.1	0.0307
953517-3	SC-701-WDR-041	15:15	1.70	—	—	—	—	—

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

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

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Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953517
Date Received: April 5, 2006

Analytical Results Summary

METALS ANALYSIS: Total Metal Analyses as Requested

Lab I.D.	Sample ID	Date of Analysis: / Time Coll.	Aluminum EPA 200.7 04/11/06 mg/L	Antimony EPA 200.8 04/11/06 mg/L	Arsenic EPA 200.8 04/11/06 mg/L	Barium EPA 200.7 04/11/06 mg/L	Beryllium EPA 200.8 04/11/06 mg/L	Cadmium EPA 200.8 04/11/06 mg/L	Chromium EPA 200.7 04/07/06 mg/L	Cobalt EPA 200.8 04/11/06 mg/L	Copper EPA 200.8 04/11/06 mg/L	Lead EPA 200.8 04/11/06 mg/L
953517-1	SC-700B-WDR-041	15:15	ND	ND	ND	ND	---	---	ND	---	0.0327	ND
953517-2	SC-100B-WDR-041	15:15	ND	ND	ND	ND	---	---	2.02	---	0.0311	ND
953517-3	SC-701-WDR-041	15:15	---	ND	ND	ND	ND	ND	ND	ND	0.0455	ND

Lab I.D.	Sample ID	Date of Analysis: / Time Coll.	Manganese EPA 200.7 04/11/06 mg/L	Mercury EPA 245.1 04/07/06 mg/L	Molybdenum EPA 200.8 04/11/06 mg/L	Nickel EPA 200.7 04/11/06 mg/L	Selenium EPA 200.8 04/14/06 mg/L	Silver EPA 200.8 04/11/06 mg/L	Thallium EPA 200.8 04/11/06 mg/L	Vanadium EPA 200.8 04/11/06 mg/L	Zinc EPA 200.7 04/11/06 mg/L
953517-1	SC-700B-WDR-041	15:15	ND	---	0.0092	ND	---	---	---	---	0.406
953517-2	SC-100B-WDR-041	15:15	ND	---	0.0143	ND	---	---	---	---	0.197
953517-3	SC-701-WDR-041	15:15	---	ND	0.0641	ND	ND	ND	ND	0.0311	0.0231

Lab I.D.	Sample ID	Date of Analysis: / Time Coll.	Boron EPA 200.7 04/11/06 mg/L	Calcium EPA 200.7 04/14/06 mg/L	Iron EPA 200.7 04/11/06 mg/L	Potassium EPA 200.7 04/14/06 mg/L	Sodium EPA 200.7 04/14/06 mg/L	Strontium EPA 200.7 04/11/06 mg/L
953517-1	SC-700B-WDR-041	15:15	0.997	---	ND	---	---	---
953517-2	SC-100B-WDR-041	15:15	1.14	286	ND	37.2	1330	8.58
953517-3	SC-701-WDR-041	15:15	---	---	---	---	---	---

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

Section 3.0

Final Reports

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953517
Date: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: April 10, 2006
Analytical Batch: 04TOC06C

Investigation: Total Organic Carbon by EPA 415.2

Analytical Results for Total Organic Carbon

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
953517-2	SC-100B-WDR-041	15:15	mg/L	1.00	0.500	1.25

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953517-2	1.25	1.30	3.92%	≤ 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	953517-2	1.25	1.00	20.0	20.0	20.4	21.3	95.8%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	10.4	10.0	104%	90% - 110%	Yes
MRCVS#1	10.3	10.0	103%	90% - 110%	Yes
LCS	21.7	20.0	109%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953517
Date: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: April 6, 2006
Analytical Batch: 04TUC06E

Investigation: **Turbidity by Method EPA 180.1**

Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
953517-1	SC-700B-WDR-041	15:15	NTU	1.00	0.100	ND
953517-2	SC-100B-WDR-041	15:15	NTU	1.00	0.100	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953449-15	0.057	0.060	5.13%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.71	8.00	96.4%	90% - 110%	Yes
LCS	7.69	8.00	96.1%	90% - 110%	Yes
LCS	7.70	8.00	96.3%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953517
Date: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: April 6, 2006
Analytical Batch: 04TDS06A

Investigation: Total Dissolved Solids by EPA 160.1

Analytical Results Total Dissolved Solids

TLI I.D.	Field I.D.	Units	Method	RL	Results
953517-1	SC-700B-WDR-041	mg/L	EPA 160.1	250	4270
953517-2	SC-100B-WDR-041	mg/L	EPA 160.1	312	5740
953517-3	SC-701-WDR-041	mg/L	EPA 160.1	833	22900

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	953517-1	4270	4260	0.12%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	498	500	99.6%	90% - 110%	Yes
LCS 2	495	500	99.0%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
RL: Reporting Limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953517

Date: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: April 7, 2006
Analytical Batch: 04TP06B

Investigation:

Total Phosphate as P by EPA 365.3

Analytical Results Total Phosphate as P

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
953517-2	SC-100B-WDR-041	mg/L	EPA 365.3	1.00	0.0200	0.0307

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953517-2	0.0307	0.0372	19.1%	≤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	953517-2	0.0307	1.00	0.130	0.130	0.148	0.161	90.2%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.126	0.130	96.9%	90% - 110%	Yes
MRCVS#1	0.133	0.130	102%	90% - 110%	Yes
LCS	0.263	0.261	101%	90% - 110%	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 953517

Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Date: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: April 6, 2006
Analytical Batch: 04PH06D

Investigation: pH by EPA 150.1

Analytical Results pH

TLI I.D.	Field I.D.	Run Time	Units	MDL	RL	Results
953517-1	SC-700B-WDR-041	13:15	pH Units	0.0570	2.00	7.59
953517-2	SC-100B-WDR-041	13:20	pH Units	0.0570	2.00	7.35
953517-3	SC-701-WDR-041	13:25	pH Units	0.0570	2.00	7.81

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	953517-3	7.81	7.82	0.01	± 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.00	7.00	0.00	± 0.100 Units	Yes
LCS #1	7.06	7.00	0.06	± 0.100 Units	Yes
LCS #2	7.06	7.00	0.06	± 0.100 Units	Yes

ND: Below the reporting limit (Not Detected).
RL: Reporting Limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples

Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953517
Date: April 19, 2006
Date Revised: May 9, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: May 9, 2006
Analytical Batch: 04NO206D

Investigation: Nitrite as N by Method EPA 354.1

Analytical Results for Nitrite as N

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
953517-1	SC-700B-WDR-041	15:15	9:36	mg/L	1.00	0.0050	0.0179

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953517-1	0.0179	0.0173	3.4%	< 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	953517-1	0.0179	1.00	0.100	0.100	0.117	0.118	99.1%	75-125%	Yes
MSD	953517-1	0.0179	1.00	0.100	0.100	0.114	0.118	96.1%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0993	0.100	99.3%	90% - 110%	Yes
MRCVS#1	0.0959	0.100	95.9%	90% - 110%	Yes
LCS	0.202	0.200	101%	90% - 110%	Yes
LCSD	0.200	0.200	100%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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

REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953517
Date: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: April 7, 2006
Analytical Batch: 04NO206C

Investigation: **Nitrite as N by Method EPA 354.1**

Analytical Results for Nitrite as N

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
953517-2	SC-100B-WDR-041	15:15	09:33	mg/L	1.00	0.0050	0.0068

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953517-2	0.0068	0.0071	4.3%	≤ 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	953517-2	0.0068	1.00	0.100	0.100	0.116	0.107	109%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0993	0.100	99.3%	90% - 110%	Yes
MRCVS#1	0.102	0.100	102%	90% - 110%	Yes
LCS	0.200	0.200	100%	90% - 110%	Yes

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953517
Date: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: April 10, 2006
Analytical Batch: 04NH306A

Investigation: **Ammonia as N by Method EPA 350.2**

Analytical Results Ammonia as N

TLI I.D.	Field I.D.	Sample Time	Method	Units	DF	RL	Results
953517-1	SC-700B-WDR-041	15:15	EPA 350.2	mg/L	1.00	0.500	ND
953517-2	SC-100B-WDR-041	15:15	EPA 350.2	mg/L	1.00	0.500	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953517-1	ND	ND	0.0%	≤ 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	953517-2	0.00	1.00	10.0	10.0	8.54	10.0	85.4%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	9.58	10.0	95.8%	90% - 110%	Yes

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 953517

Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Date: April 19, 2006
Collected: April 3, 2006
Received: April 5, 2006
Prep/ Analyzed: April 6, 2006
Analytical Batch: 04EC06A

Investigation:

Specific Conductivity by EPA 120.1

Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
953517-1	SC-700B-WDR-041	µmhos/cm	EPA 120.1	10.0	20.0	7900
953517-2	SC-100B-WDR-041	µmhos/cm	EPA 120.1	10.0	20.0	10500
953517-3	SC-701-WDR-041	µmhos/cm	EPA 120.1	10.0	20.0	37800

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953517-2	10500	10500	0.00%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	681	706	96.5%	90% - 110%	Yes
CVS#1	932	994	93.8%	90% - 110%	Yes
LCS	674	706	95.5%	90% - 110%	Yes

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953517
Date: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: April 6, 2006
Analytical Batch: 04AN06E

Investigation: **Chloride by Ion Chromatography using EPA 300.0**

Analytical Results Chloride

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
953517-2	SC-100B-WDR-041	15:15	12:12	mg/L	1000	200	2740

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953517-2	2740	2730	0.37%	≤ 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	953517-2	2740	1000	4.00	4000	6820	6740	102%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	3.95	4.00	98.8%	90% - 110%	Yes
MRCVS#1	3.00	3.00	100%	90% - 110%	Yes
MRCVS#2	2.97	3.00	99.0%	90% - 110%	Yes
MRCVS#3	3.00	3.00	100%	90% - 110%	Yes
MRCVS#4	3.00	3.00	100%	90% - 110%	Yes
LCS	3.97	4.00	99.3%	90% - 110%	Yes
LCSD	3.99	4.00	99.8%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
DF: Dilution Factor.

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953517
Date: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: April 6, 2006
Analytical Batch: 04AN06E

Investigation: **Fluoride by Ion Chromatography using EPA 300.0**

Analytical Results Fluoride

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
953517-1	SC-700B-WDR-041	15:15	09:44	mg/L	1.00	0.200	2.18
953517-2	SC-100B-WDR-041	15:15	09:55	mg/L	1.00	0.200	2.24
953517-3	SC-701-WDR-041	15:15	10:06	mg/L	1.00	0.200	1.70

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953517-1	2.18	2.21	1.37%	≤ 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	953517-1	2.18	1.00	3.00	3.00	5.03	5.18	95.0%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.11	4.00	103%	90% - 110%	Yes
MRCVS#1	3.10	3.00	103%	90% - 110%	Yes
MRCVS#2	3.10	3.00	103%	90% - 110%	Yes
MRCVS#3	3.10	3.00	103%	90% - 110%	Yes
MRCVS#4	3.11	3.00	104%	90% - 110%	Yes
LCS	4.14	4.00	104%	90% - 110%	Yes
LCSD	4.15	4.00	104%	90% - 110%	Yes

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953517
Date: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: April 6, 2006
Analytical Batch: 04AN06E

Investigation: **Nitrate as N by Ion Chromatography using EPA 300.0**

Analytical Results Nitrate as N

TU I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
953517-1	SC-700B-WDR-041	15:15	09:44	mg/L	1.00	0.200	2.47
953517-2	SC-100B-WDR-041	15:15	09:55	mg/L	1.00	0.200	3.38

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953517-1	2.47	2.48	0.40%	≤ 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	953517-1	2.47	1.00	3.00	3.00	5.40	5.47	97.7%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	3.97	4.00	99.3%	90% - 110%	Yes
MRCVS#1	2.98	3.00	99.3%	90% - 110%	Yes
MRCVS#2	2.97	3.00	99.0%	90% - 110%	Yes
MRCVS#3	2.96	3.00	98.7%	90% - 110%	Yes
MRCVS#4	2.96	3.00	98.7%	90% - 110%	Yes
LCS	3.98	4.00	99.5%	90% - 110%	Yes
LCSD	4.00	4.00	100%	90% - 110%	Yes

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953517
Date: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: April 6, 2006
Analytical Batch: 04AN06E

Investigation: **Sulfate by Method EPA 300.0**

Analytical Results Sulfate

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
953517-1	SC-700B-WDR-041	15:15	11:07	mg/L	25.0	12.5	480
953517-2	SC-100B-WDR-041	15:15	11:18	mg/L	40.0	40.0	686

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953517-2	686	687	0.15%	≤ 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	953517-2	686	40.0	20.0	800	1470	1486	98.0%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	19.9	20.0	100%	90% - 110%	Yes
MRCVS#1	15.0	15.0	100%	90% - 110%	Yes
MRCVS#2	15.0	15.0	100%	90% - 110%	Yes
MRCVS#3	14.9	15.0	99.3%	90% - 110%	Yes
MRCVS#4	15.0	15.0	100%	90% - 110%	Yes
LCS	19.9	20.0	100%	90% - 110%	Yes
LCSD	20.0	20.0	100%	90% - 110%	Yes

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953517
Date: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: April 6, 2006
Analytical Batch: 04Si06A

Investigation: Dissolved Silica by EPA 370.1

Analytical Results Dissolved Silica

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
953517-2	SC-100B-WDR-041	15:15	mg/L	50.0	2.00	22.1

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953278	11.6	11.2	3.51%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.398	0.400	99.5%	90% - 110%	Yes
MRCVS#2	0.384	0.400	96.0%	90% - 110%	Yes
LCS	0.826	0.856	96.5%	90% - 110%	Yes

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DF: Dilution Factor

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248
Prep. Batch: 04CrH06D

Laboratory No.: 953517
Date: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: April 6, 2006
Analytical Batch: 04CrH06D

Investigation: Hexavalent Chromium by IC Using Method EPA 218.6

Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
953517-1	SC-700B-WDR-041	15:15	12:55	mg/L	5.00	0.0010	ND
953517-2	SC-100B-WDR-041	15:15	13:14	mg/L	100	0.0200	2.14
953517-3	SC-701-WDR-041	15:15	14:42	mg/L	10.0	0.0020	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953516-2	5.96	5.97	0.17%	≤ 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	953517-1	0.00	5.00	0.00100	0.00500	0.00502	0.00500	100%	90-110%	Yes
MS	953517-2	2.14	100	0.0200	2.00	4.11	4.14	98.5%	90-110%	Yes
MS	953517-3	0.00	10.0	0.00100	0.0100	0.0106	0.0100	106%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00491	0.00500	98.2%	90% - 110%	Yes
MRCVS#1	0.00960	0.0100	96.0%	95% - 105%	Yes
MRCVS#2	0.00954	0.0100	95.4%	95% - 105%	Yes
MRCVS#3	0.00961	0.0100	96.1%	95% - 105%	Yes
MRCVS#4	0.00955	0.0100	95.5%	95% - 105%	Yes
LCS	0.00508	0.00500	102%	90% - 110%	Yes
LCSD	0.00491	0.00500	98.2%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
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Mona Nassimi, Manager
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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Laboratory No.: 953517
Reported: April 19, 2006
Collected: April 5, 2006
Received: April 5, 2006
Analyzed: 4/7-14/2006

Samples: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248
Investigation: Total Metal Analyses as Requested

Analytical Results

SAMPLE ID: SC-700B-WDR-041 **Time Collected:** 15:15 **LAB ID:** 953517-1

Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Aluminum	EPA 200.7	ND	1.04	mg/L	0.0520	041106A	04/11/06	11:48
Antimony	EPA 200.8	ND	2.08	mg/L	0.0030	041106A	04/11/06	13:52
Arsenic	EPA 200.8	ND	2.08	mg/L	0.0050	041106A	04/11/06	13:52
Barium	EPA 200.7	ND	1.04	mg/L	0.300	041106A	04/11/06	11:48
Chromium	EPA 200.7	ND	1.04	mg/L	0.0010	040706A	04/07/06	11:47
Copper	EPA 200.8	0.0327	2.08	mg/L	0.0100	041106A	04/11/06	13:52
Lead	EPA 200.8	ND	2.08	mg/L	0.0020	041106A	04/11/06	13:52
Manganese	EPA 200.7	ND	1.04	mg/L	0.500	041106A	04/11/06	11:48
Molybdenum	EPA 200.8	0.00915	2.08	mg/L	0.0050	041106A	04/11/06	13:52
Nickel	EPA 200.7	ND	1.04	mg/L	0.0200	041106A	04/11/06	11:48
Zinc	EPA 200.7	0.406	1.04	mg/L	0.0200	041106A	04/11/06	11:48
Boron	EPA 200.7	0.997	1.04	mg/L	0.200	041106A	04/11/06	11:48
Iron	EPA 200.7	ND	1.04	mg/L	0.300	041106A	04/11/06	11:48

SAMPLE ID: SC-100B-WDR-041 **Time Collected:** 15:15 **LAB ID:** 953517-2

Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Aluminum	EPA 200.7	ND	1.04	mg/L	0.0520	041106A	04/11/06	12:02
Antimony	EPA 200.8	ND	2.08	mg/L	0.0030	041106A	04/11/06	13:57
Arsenic	EPA 200.8	ND	2.08	mg/L	0.0050	041106A	04/11/06	13:57
Barium	EPA 200.7	ND	1.04	mg/L	0.300	041106A	04/11/06	12:02
Chromium	EPA 200.7	2.02	1.04	mg/L	0.0104	041106A	04/11/06	12:02
Copper	EPA 200.8	0.0311	2.08	mg/L	0.0100	041106A	04/11/06	13:57
Lead	EPA 200.8	ND	2.08	mg/L	0.0020	041106A	04/11/06	13:57
Manganese	EPA 200.7	ND	1.04	mg/L	0.500	041106A	04/11/06	12:02
Molybdenum	EPA 200.8	0.0143	2.08	mg/L	0.0050	041106A	04/11/06	13:57
Nickel	EPA 200.7	ND	1.04	mg/L	0.0200	041106A	04/11/06	12:02
Zinc	EPA 200.7	0.197	1.04	mg/L	0.0200	041106A	04/11/06	12:02
Boron	EPA 200.7	1.14	1.04	mg/L	0.200	041106A	04/11/06	12:02
Calcium	EPA 200.7	286	52.1	mg/L	10.4	041406A	04/14/06	9:59
Iron	EPA 200.7	ND	1.04	mg/L	0.300	041106A	04/11/06	12:02
Potassium	EPA 200.7	37.2	2.08	mg/L	1.00	041406A	04/14/06	9:47
Sodium	EPA 200.7	1330	52.1	mg/L	10.4	041406A	04/14/06	9:59
Strontium	EPA 200.8	8.58	52.1	mg/L	0.521	041106A	04/11/06	14:25

TRUESDAIL LABORATORIES, INC.

Report Continued

SAMPLE ID: SC-701-WDR-041		Time Collected:	15:15			LAB ID:	953517-3	
Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Antimony	EPA 200.8	ND	10.4	mg/L	0.0104	041106A	04/11/06	14:13
Arsenic	EPA 200.8	ND	10.4	mg/L	0.0104	041106A	04/11/06	14:13
Barium	EPA 200.7	ND	1.04	mg/L	0.300	041106A	04/11/06	12:18
Beryllium	EPA 200.8	ND	10.4	mg/L	0.0052	041106A	04/11/06	14:13
Cadmium	EPA 200.8	ND	10.4	mg/L	0.0052	041106A	04/11/06	14:13
Chromium	EPA 200.7	ND	1.04	mg/L	0.0010	040706A	04/07/06	12:00
Cobalt	EPA 200.8	ND	10.4	mg/L	0.0104	041106A	04/11/06	14:13
Copper	EPA 200.8	0.0455	10.4	mg/L	0.0104	041106A	04/11/06	14:13
Lead	EPA 200.8	ND	10.4	mg/L	0.0052	041106A	04/11/06	14:13
Mercury	EPA 245.1	ND	1.00	mg/L	0.00020	040706E	04/07/06	NA
Molybdenum	EPA 200.8	0.0641	10.4	mg/L	0.0104	041106A	04/11/06	14:13
Nickel	EPA 200.7	ND	1.04	mg/L	0.0200	041106A	04/11/06	12:18
Selenium	EPA 200.8	ND	10.4	mg/L	0.0208	041406A	04/14/06	14:02
Silver	EPA 200.8	ND	10.4	mg/L	0.0104	041106A	04/11/06	14:13
Thallium	EPA 200.8	ND	10.4	mg/L	0.0052	041106A	04/11/06	14:13
Vanadium	EPA 200.8	0.0311	10.4	mg/L	0.0104	041106A	04/11/06	14:13
Zinc	EPA 200.7	0.0231	1.04	mg/L	0.0200	041106A	04/11/06	12:18

ND: Not detected, or below limit of detection.
DF: Dilution factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

953517

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-041]

COC Number IM3Plant-WDR-041
TURNAROUND TIME 10 Days
DATE 4/5/06 PAGE 1 OF 1

COMPANY CH2M HILL
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 P.O. # 911248
SAMPLERS (SIGNATURE

Rec'd 04/05/06
sld 953517

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), pH (150.1)	TDS (160.1)	Turb (180.0)	Total Metals (200.7) See List Below	Ammonia (350.2)	Anions (300.0) F	Anions (300.0) F, NO3, NO2, SO4	Diss Silica (370.1), TOC (415.2)	Total Phosphorous (365.2)	Please add Cl, Ca, Na, K, Sr	NUMBER OF CONTAINERS	COMMENTS
-1 SC-700B-WDR-041	4/5/06	15:15	W	X		X	X	X	X	X		X					4
-2 SC-100B-WDR-041	4/5/06	15:15	W	X		X	X	X	X	X		X	X	X	X	X	6	pH ≥ 7
-3 SC-701-WDR-041	4/5/06	16:15	W	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

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished) J. Sundberg	J. Lundberg	OMI	4.5.06 16:00
Signature (Received) J. Brown	J. Brown	TLI	2015 4-5-06
Signature (Relinquished)			
Signature (Received)			
Signature (Relinquished)			
Signature (Received)			

SAMPLE CONDITIONS

RECEIVED COOL ☐ WARM ☐ °F

CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

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

Table of Contents
TLI Laboratory Data Package

For Laboratory Number: 953748

Section 1.0

Case Narrative

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

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

April 24, 2006

CH2M HILL
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-042 PROJECT, GROUNDWATER MONITORING,

TLI NO.: 953748

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-042 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, 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 12, 2006, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

No violations or nonconformance actions occurred for this data package.

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services

K.R.P. Iyer
Quality Assurance/Quality Control Officer

CC: Mr. Mark Ciehy, CH2M HILL, Redding CA

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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www.truesdail.com

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00

Laboratory No.: 953748
Date: April 24, 2006
Collected: April 12, 2006
Received: April 12, 2006

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Alex Hernandez
EPA 150.1	pH	Alex Hernandez
EPA 160.1	Total Dissolved Solids	Emilia Haley
EPA 180.1	Turbidity	Gautam Savani
EPA 200.7	Total Chromium	Victoria Than-Thiem
EPA 218.6	Hexavalent Chromium	Jorge Arriaga

Section 2.0

Summary Table of Final Results

TRUESDAIL LABORATORIES, INC.
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Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 953748
Date Received: April 12, 2006

Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Analytical Results Summary

Lab I.D.	Sample I.D.	Sample Time	EPA 200.7 *Chromium Total*	EPA 218.6 *Chromium Hexavalent*	EPA 180.1 *Turbidity*	EPA 150.1 *pH*	EPA 120.1 *EC*	EPA 160.1 *TDS*
			mg/L	*mg/L*	*NTU*	*Unit*	*µmhos/cm*	*mg/L*
953748	SC-700B-WDR-042	15:30	ND	ND	ND	7.76	8290	4510

003

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.

Section 3.0

Final Reports

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953748
Date: April 24, 2006
Collected: April 12, 2006
Received: April 12, 2006
Prep/ Analyzed: April 13, 2006
Analytical Batch: 04PH06I

Investigation:

pH by EPA 150.1

Analytical Results pH

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	MDL	RL	Results
953748	SC-700B-WDR-042	15:30	07:14	pH Units	0.0570	2.00	7.76

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	953749	ND	ND	0.00	± 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.01	7.00	0.01	± 0.100 Units	Yes
LCS #1	7.01	7.00	0.01	± 0.100 Units	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953748
Date: April 24, 2006
Collected: April 12, 2006
Received: April 12, 2006
Prep/ Analyzed: April 14, 2006
Analytical Batch: 04EC06F

Investigation:

Specific Conductivity by EPA 120.1

Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
953748	SC-700B-WDR-042	µmhos/cm	EPA 120.1	10.0	20.0	8290

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953648	691	690	0.14%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	672	706	95.2%	90% - 110%	Yes
CVS#1	925	994	93.1%	90% - 110%	Yes
LCS	673	706	95.3%	90% - 110%	Yes
LCSD	674	706	95.5%	90% - 110%	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953748
Date: April 24, 2006
Collected: April 12, 2006
Received: April 12, 2006
Prep/ Analyzed: April 13, 2006
Analytical Batch: 04TUC06K

Investigation: **Turbidity by Method EPA 180.1**

Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
953748	SC-700B-WDR-042	15:30	NTU	1.00	0.100	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953790-3	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.82	8.00	97.8%	90% - 110%	Yes
LCS	7.74	8.00	96.8%	90% - 110%	Yes
LCS	7.80	8.00	97.5%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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www.truesdail.com

REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953748
Date: April 24, 2006
Collected: April 12, 2006
Received: April 12, 2006
Prep/ Analyzed: April 13, 2006
Analytical Batch: 04TDS06D

Investigation: **Total Dissolved Solids by EPA 160.1**

Analytical Results Total Dissolved Solids

TLI I.D.	Field I.D.	Units	Method	RL	Results
953748	SC-700B-WDR-042	mg/L	EPA 160.1	250	4510

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	953748	4510	4560	0.551%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	500	500	100%	90% - 110%	Yes
LCS 2	499	500	99.8%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
RL: Reporting Limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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www.truesdail.com

REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 953748

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Date: April 24, 2006
Collected: April 12, 2006
Received: April 12, 2006
Prep/ Analyzed: April 13, 2006
Analytical Batch: 04CrH06J

Investigation: **Hexavalent Chromium by EPA 218.6**

Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
953748	SC-700B-WDR-042	15:30	07:22	mg/L	5.00	0.0010	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953748	ND	ND	0.00%	< 20%	Yes

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	953748	0.00	5.00	0.00100	0.00500	0.00512	0.00500	102%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00508	0.00500	102%	90% - 110%	Yes
MRCVS#1	0.00999	0.0100	100%	95% - 105%	Yes
LCS	0.00508	0.00500	102%	90% - 110%	Yes
LCSD	0.00508	0.00500	102%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248
Prep. Batch: 041306A

Laboratory No.: 953748
Date: April 24, 2006
Collected: April 12, 2006
Received: April 12, 2006
Prep/ Analyzed: April 13, 2006
Analytical Batch: 041306A

Investigation: **Total Chromium by Inductively Coupled Argon Plasma Using Method EPA 200.7**

Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
953748	SC-700B-WDR-042	mg/L	EPA 200.7	15:19	1.04	0.0010	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953748	ND	ND	0.00%	≤20%	Yes

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	953748	0.00	1.04	0.0100	0.0104	0.0117	0.0104	113%	70-130%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0103	0.0100	103%	95% - 105%	Yes
MRCVS#1	0.00970	0.0100	97.0%	90% - 110%	Yes
MRCVS#2	0.00992	0.0100	99.2%	90% - 110%	Yes
ICS	0.0113	0.0100	113%	80% - 120%	Yes
LCS	0.0104	0.0100	104%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-042] 953748

COC Number IM3Plant-WDR-042
TURNAROUND TIME 10 Days
DATE 4/12/06 PAGE 1 OF 1

COMPANY: CH2M HILL
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: P.O. # 911248
SAMPLERS (SIGNATURE): J. Lundberg

Rec'd 04/12/06 953748

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), pH (150.1)	TDS (160.1)	Turb (180.0)	Total Metals (200.7) Cr	Ammonia (350.2)	Anions (300.0) F	NUMBER OF CONTAINERS	COMMENTS
SC-700B-WDR-042	4/12/06	1530	Water	X		X	X	X	X			3	pH=7
												3	TOTAL NUMBER OF CONTAINERS

ALERT!! Level III QC

For Sample Conditions See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	J. Lundberg	OMI	4/12/06 15:45
Signature (Received)	Shane B.	TLI	4/12/06 20:05
Signature (Relinquished)			
Signature (Received)			
Signature (Relinquished)			
Signature (Received)			

SAMPLE CONDITIONS
RECEIVED COOL ☐ WARM ☐ °F
CUSTODY SEALED YES ☐ NO ☐
SPECIAL REQUIREMENTS:

Table of Contents
TLI Laboratory Data Package

For Laboratory Number: 954046

Section 1.0

Case Narrative

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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April 28, 2006

CH2M HILL
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-043 PROJECT, GROUNDWATER MONITORING,

TLI NO.: 954046

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-043 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, 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, 2006, 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.

Due to analyst error, the MRCCS standard was used in place of the MRCVS#1 standard during Hexavalent Chromium analysis by EPA 218.6. The MRCVS#2 and Calibration Blank #3 are used as the closing QC for the batch.

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

K.R.P. Iyer
Quality Assurance/Quality Control Officer

CC: Mr. Mark Cichy, CH2M HILL Redding CA

TRUESDAIL LABORATORIES, INC.

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www.truesdail.com

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Groundwater Sample
roject Name: PG&E Topock Project
Project No.: 334168.IM.04.00

Laboratory No.: 954046
Date: April 28, 2006
Collected: April 20, 2006
Received: April 20, 2006

ANALYST LIST

METHOD	PARAMETER	ANALYST
'A 120.1	Specific Conductivity	Alex Hernandez
'A 150.1	pH	Alex Hernandez
'A 160.1	Total Dissolved Solids	Emilia Haley
'A 180.1	Turbidity	Gautam Savani
'A 200.7	Total Chromium	Riddhi Patel
'A 218.6	Hexavalent Chromium	Jorge Arriaga

Section 2.0

Summary Table of Final Results

TRUESDAIL LABORATORIES, INC.
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Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 954046
Date Received: April 20, 2006

Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Analytical Results Summary

Lab I.D.	Sample I.D.	Sample Time	EPA 200.7 *Chromium Total* mg/L	EPA 218.6 *Chromium Hexavalent* mg/L	EPA 180.1 *Turbidity* NTU	EPA 150.1 *pH* Unit	EPA 120.1 *EC* µmhos/cm	EPA 160.1 *TDS* mg/L
954046	SC-700B-WDR-043	13:18	ND	ND	ND	7.38	6490	3310

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.

C00

Section 3.0

Final Reports

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 954046

Sample: One (1) Groundwater Sample
oject Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Date: April 28, 2006
Collected: April 20, 2006
Received: April 20, 2006
Prep/ Analyzed: April 20, 2006
Analytical Batch: 04CrH06S

vestigation: **Hexavalent Chromium by EPA 218.6**

Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
954046	SC-700B-WDR-043	13:18	23:55	mg/L	5.00	0.0010	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	954046	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	954046	0.00	5.00	0.00100	0.00500	0.00546	0.00500	109%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00535	0.00500	107%	90% - 110%	Yes
MRCVS#1	0.00512	0.0100	51.2%	95% - 105%	No
MRCVS#2	0.00968	0.0100	96.8%	95% - 105%	Yes
LCS	0.00546	0.00500	109%	90% - 110%	Yes
LCSD	0.00534	0.00500	107%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 954046

Sample: One (1) Groundwater Sample
oject Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248
Prep. Batch: 042806A

Date: April 28, 2006
Collected: April 20, 2006
Received: April 20, 2006
Prep/ Analyzed: April 28, 2006
Analytical Batch: 042806A

vestigation: **Total Chromium by Inductively Coupled Argon Plasma Using Method EPA 200.7**

Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
954046	SC-700B-WDR-043	mg/L	EPA 200.7	8:10	1.04	0.0010	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	954046	ND	ND	0.00%	≤20%	Yes

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	954046	0.00	1.04	0.0100	0.0104	0.0106	0.0104	102%	70-130%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0101	0.0100	101%	95% - 105%	Yes
MRCVS#1	0.0104	0.0100	104%	90% - 110%	Yes
ICS	0.00984	0.0100	98.4%	80% - 120%	Yes
LCS	0.0102	0.0100	102%	90% - 110%	Yes

ND: Not detected at reporting limit
DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Groundwater Sample
oject Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 954046
Date: April 28, 2006
Collected: April 20, 2006
Received: April 20, 2006
Prep/ Analyzed: April 21, 2006
Analytical Batch: 04TUC06Q

vestigation: **Turbidity by Method EPA 180.1**

Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
954046	SC-700B-WDR-043	13:18	NTU	1.00	0.100	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953989-22	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.88	8.00	98.5%	90% - 110%	Yes
LCS	7.82	8.00	97.8%	90% - 110%	Yes
LCS	7.80	8.00	97.5%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Sample: One (1) Groundwater Sample
oject Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

vestigation:

Laboratory No.: 954046
Date: April 28, 2006
Collected: April 20, 2006
Received: April 20, 2006
Prep/ Analyzed: April 21, 2006
Analytical Batch: 04PH06N

pH by EPA 150.1

Analytical Results pH

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	MDL	RL	Results
954046	SC-700B-WDR-043	13:18	07:06	pH Units	0.0570	2.00	7.38

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	954046	7.38	7.38	0.00	± 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.01	7.00	0.01	± 0.100 Units	Yes
LCS #1	7.01	7.00	0.01	± 0.100 Units	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Sample: One (1) Groundwater Sample
oject Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 954046
Date: April 28, 2006
Collected: April 20, 2006
Received: April 20, 2006
Prep/ Analyzed: April 21, 2006
Analytical Batch: 04EC06H

vestigation:

Specific Conductivity by EPA 120.1

Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
954046	SC-700B-WDR-043	µmhos/cm	EPA 120.1	10.0	20.0	6490

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	954006-1	335	338	0.89%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	672	706	95.2%	90% - 110%	Yes
CVS#1	924	994	93.0%	90% - 110%	Yes
LCS	670	706	94.9%	90% - 110%	Yes
LCSD	673	706	95.3%	90% - 110%	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 954046

Sample: One (1) Groundwater Sample
roject Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Date: April 28, 2006
Collected: April 20, 2006
Received: April 20, 2006
Prep/ Analyzed: April 21, 2006
Analytical Batch: 04TDS06H

nvestigation: **Total Dissolved Solids by EPA 160.1**

Analytical Results Total Dissolved Solids

TLI I.D.	Field I.D.	Units	Method	RL	Results
954046	SC-700B-WDR-043	mg/L	EPA 160.1	208	3310

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	954046	3310	3320	0.15%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	503	500	101%	90% - 110%	Yes
LCS 2	487	500	97.4%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
RL: Reporting Limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.
14201 Franklin Avenue, Tustin, CA 92780-7008
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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-043]

954046

COC Number IM3Plant-WDR-043
TURNAROUND TIME 10 Days
DATE 4/20/06 PAGE 1 OF 1

COMPANY	CH2M HILL
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	P.O. # 911248
SAMPLERS (SIGNATURE	

Rec'd 04/20/06 954046

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), pH (150.1)	TDS (160.1)	Turb (180.0)	Total Metals (200.7) Cr	Ammonia (350.2)	Anions (300.0) F	NUMBER OF CONTAINERS	COMMENTS
SC-700B-WDR-043	4/20/06	1318		X		X	X	X	X			1	3 pH=2

ALERT!! Level III QC

3 TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	GARY SPRAGUE	Topock IM3 SMI	4-20-06 1440
Signature (Received)	FRED DOUGLAS	EXE	4/20/06
Signature (Relinquished)			
Signature (Received)	L. Shakespeare	TM	4/20/06 1450
Signature (Relinquished)			
Signature (Received)			

SAMPLE CONDITIONS

RECEIVED COOL ☐ WARM ☐ °F

CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

For Sample Conditions See Form Attached

Table of Contents
TLI Laboratory Data Package

For Laboratory Number: 954268

Section 1.0

Case Narrative

TRUESDAIL LABORATORIES, INC.

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May 4, 2006

CH2M HILL
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-044 PROJECT, GROUNDWATER MONITORING,

TLI NO.: 954268

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-044 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, 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 27, 2006, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

No violations or nonconformance actions occurred for this data package.

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services

K.R.P. Iyer
Quality Assurance/Quality Control Officer

CC: Mr. Mark Cichy, CH2M HILL, Redding CA

TRUESDAIL LABORATORIES, INC.

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Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00

Laboratory No.: 954268
Date: May 4, 2006
Collected: April 27, 2006
Received: April 27, 2006

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Alex Hernandez
EPA 150.1	pH	Alex Hernandez
EPA 160.1	Total Dissolved Solids	Emilia Haley
EPA 180.1	Turbidity	Gautam Savani
EPA 200.7	Total Chromium	Victoria Than-Thiem
EPA 218.6	Hexavalent Chromium	Jorge Arriaga

Section 2.0

Summary Table of Final Results

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Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 954268
Date Received: April 27, 2006

Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Analytical Results Summary

Lab I.D.	Sample I.D.	Sample Time	EPA 200.8 *Chromium Total* mg/L	EPA 218.6 *Chromium Hexavalent* mg/L	EPA 180.1 *Turbidity* NTU	EPA 150.1 *pH* Unit	EPA 120.1 *EC* µmhos/cm	EPA 160.1 *TDS* mg/L
954268	SC-700B-WDR-044	13:15	0.0065	ND	0.192	7.99	7670	4120

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.

Section 3.0

Final Reports

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 954268

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248
Prep. Batch: 050306A

Date: May 4, 2006
Collected: April 27, 2006
Received: April 27, 2006
Prep/ Analyzed: May 3, 2006
Analytical Batch: 050306A

Investigation: **Total Dissolved Chromium by Inductively Coupled Argon Plasma Mass Spectrometer using EPA 200.8**

Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
954268	SC-700B-WDR-044	mg/L	EPA 200.8	13:13	2.08	0.0021	0.0065

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	954268	0.0065	0.0071	8.82%	≤20%	Yes

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	954268	0.0065	2.08	0.0500	0.104	0.109	0.111	98.6%	70-130%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0500	0.0500	100%	95% - 105%	Yes
MRCVS#1	0.0524	0.0500	105%	90% - 110%	Yes
ICS	0.03970	0.0400	99.3%	80% - 120%	Yes
LCS	0.0498	0.0500	99.6%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 954268

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Date: May 4, 2006
Collected: April 27, 2006
Received: April 27, 2006
Prep/ Analyzed: April 28, 2006
Analytical Batch: 04CrH06X

Investigation: **Hexavalent Chromium by EPA 218.6**

Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
954268	SC-700B-WDR-044	13:15	08:34	mg/L	5.00	0.0010	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	954268	ND	ND	0.00%	< 20%	Yes

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	954268	0.00	5.00	0.00100	0.00500	0.00538	0.00500	108%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00502	0.00500	100%	90% - 110%	Yes
MRCVS#1	0.00980	0.0100	98.0%	95% - 105%	Yes
MRCVS#2	0.00985	0.0100	98.5%	95% - 105%	Yes
LCS	0.00502	0.00500	100%	90% - 110%	Yes
LCSD	0.00506	0.00500	101%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 954268
Date: May 4, 2006
Collected: April 27, 2006
Received: April 27, 2006
Prep/ Analyzed: May 2, 2006
Analytical Batch: 05TUC06A

Investigation: **Turbidity by Method EPA 180.1**

Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
954268	SC-700B-WDR-044	13:15	NTU	1.00	0.100	0.192

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	954312-13	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.70	8.00	96.3%	90% - 110%	Yes
LCS	7.98	8.00	99.8%	90% - 110%	Yes
LCS	8.01	8.00	100%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 954268
Date: May 4, 2006
Collected: April 27, 2006
Received: April 27, 2006
Prep/ Analyzed: April 28, 2006
Analytical Batch: 04PH06S

Investigation:

pH by EPA 150.1

Analytical Results pH

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	MDL	RL	Results
954268	SC-700B-WDR-044	13:15	09:00	pH Units	0.0570	2.00	7.99

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	954275-1	7.26	7.28	0.02	± 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	6.97	7.00	0.03	± 0.100 Units	Yes
LCS #1	6.98	7.00	0.02	± 0.100 Units	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

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

REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Laboratory No.: 954268

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Date: May 4, 2006
Collected: April 27, 2006
Received: April 27, 2006
Prep/ Analyzed: April 28, 2006
Analytical Batch: 04EC06M

Investigation:

Specific Conductivity by EPA 120.1

Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
954268	SC-700B-WDR-044	µmhos/cm	EPA 120.1	10.0	20.0	7670

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	954268	7670	7690	0.26%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	670	706	94.9%	90% - 110%	Yes
CVS#1	920	994	92.6%	90% - 110%	Yes
CVS#2	921	994	92.7%	90% - 110%	Yes
LCS	672	706	95.2%	90% - 110%	Yes
LCSD	671	706	95.0%	90% - 110%	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 954268
Date: May 4, 2006
Collected: April 27, 2006
Received: April 27, 2006
Prep/ Analyzed: May 1, 2006
Analytical Batch: 05TDS06A

Investigation: **Total Dissolved Solids by EPA 160.1**

Analytical Results Total Dissolved Solids

TLI I.D.	Field I.D.	Units	Method	RL	Results
954268	SC-700B-WDR-044	mg/L	EPA 160.1	250	4120

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	954268	4120	4090	0.37%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	502	500	100%	90% - 110%	Yes
LCS 2	505	500	101%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
RL: Reporting Limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-044] 954268

COC Number IM3Plant-WDR-044
TURNAROUND TIME 5 Days
DATE 4/27/06 PAGE 1 OF 1

COMPANY	CH2M HILL
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	P.O. # 911248
SAMPLERS (SIGNATURE	

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr(VI) (218.6) Lab Filtered	Title 22 Metals List (200.7, 200.8, 245.1)	EC (120.1), pH (150.1)	TDS (160.1)	Turb (180.0)	Total Metals (200.7) Cr	Ammonia (350.2)	Anions (300.0) F	NUMBER OF CONTAINERS	COMMENTS
SC-700B-WDR-044	4/27/06	1315		X		X	X	X	X			3	pH=2
												3	TOTAL NUMBER OF CONTAINERS

ALERT!! Level III QC

Rec'd 04/27/06
954268

RUSH!

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	GREG SIBLE	Topock IM3 QUI	4-27-06 1454
Signature (Received)	L. Shaberman	T21	4/27/06 1911
Signature (Relinquished)			
Signature (Received)			
Signature (Relinquished)			
Signature (Received)			

SAMPLE CONDITIONS

RECEIVED COOL ☐ WARM ☐ °F

CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

For Sample Conditions See Form Attached

TRUESDAIL LABORATORIES, INC.

Sample Integrity & Analysis Discrepancy Form

Client: CH2M Hill **Lab #** 954268

Date Delivered: 04/27/06 **Time:** _____ **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

ALERT!! Level III QC

RUSH!

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-Shabecoff

ANALYTICAL REPORT

PROJECT NO. 334168.IM.04.00

PG&E TOPOCK GWM

Lot #: E6D060259

Shawn Duffy

CH2M Hill Inc

SEVERN TRENT LABORATORIES, INC.

Marisol Tabirara
Project Manager

April 26, 2006

EXECUTIVE SUMMARY - Detection Highlights

E6D060259

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SC-SLUDGE-WDR-041 04/05/06 15:45 001				
Mercury	0.0046	0.0020	mg/L	SW846 7470A
Chromium	100	0.10	mg/L	SW846 6010B
Zinc	1.0	1.0	mg/L	SW846 6010B
Mercury	3.3	0.75	mg/kg	SW846 7471A
Arsenic	14	7.5	mg/kg	SW846 6010B
Barium	96	15	mg/kg	SW846 6010B
Chromium	21000	7.5	mg/kg	SW846 6010B
Selenium	4.9	3.8	mg/kg	SW846 6010B
Copper	130	19	mg/kg	SW846 6010B
Molybdenum	58	30	mg/kg	SW846 6010B
Nickel	44	30	mg/kg	SW846 6010B
Thallium	15	7.5	mg/kg	SW846 6010B
Vanadium	97	38	mg/kg	SW846 6010B
Zinc	36	15	mg/kg	SW846 6010B
Dissolved Hexavalent Chromium	0.0062	0.0010	mg/L	SW846 7199
Percent Moisture	87	0.10	%	MCAWW 160.3 MOD
Hexavalent Chromium	97	3.0	mg/kg	SW846 7199

METHODS SUMMARY

E6D060259

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Hexavalent Chromium	SW846 7199	SW846 STLC
Hexavalent Chromium	SW846 7199	SW846 3060A
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 CAM TITLE
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 1311/3010
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3050B
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A	SW846 CAM TITLE
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A	SW846 1311/7470
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A	SW846 7471A
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

E6D060259

ANALYTICAL METHOD	ANALYST	ANALYST ID
MCAWW 160.3 MOD	FLORIAN ZIMMERMANN	000064
SW846 6010B	Josephine Asuncion	021088
SW846 7199	Yuriy Zakhrabov	000022
SW846 7470A	Hao Ton	000023
SW846 7470A	Josephine Asuncion	021088
SW846 7471A	Hao Ton	000023

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

E6D060259

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
H2QEV	001	SC-SLUDGE-WDR-041	04/05/06	15:45

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-041

TOTAL Metals

Lot-Sample #...: E6D060259-001 **Matrix.....:** SO
Date Sampled...: 04/05/06 15:45 **Date Received..:** 04/06/06 09:50
% Moisture.....: 87

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 6100199						
Arsenic	**14**	**7.5**	**mg/kg**	**SW846 6010B**	**04/10-04/11/06**	**H2QEV1AA**
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Antimony	ND	45	mg/kg	SW846 6010B	04/10-04/11/06	H2QEV1AC
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Barium	**96**	**15**	**mg/kg**	**SW846 6010B**	**04/10-04/11/06**	**H2QEV1AD**
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Cadmium	ND	3.8	mg/kg	SW846 6010B	04/10-04/11/06	H2QEV1AE
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Chromium	**21000**	**7.5**	**mg/kg**	**SW846 6010B**	**04/10-04/11/06**	**H2QEV1AF**
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Beryllium	ND	3.8	mg/kg	SW846 6010B	04/10-04/11/06	H2QEV1AG
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Lead	ND	3.8	mg/kg	SW846 6010B	04/10-04/11/06	H2QEV1AH
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Selenium	**4.9**	**3.8**	**mg/kg**	**SW846 6010B**	**04/10-04/11/06**	**H2QEV1AJ**
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Silver	ND	7.5	mg/kg	SW846 6010B	04/10-04/11/06	H2QEV1AK
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		

(Continued on next page)

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-041

TOTAL Metals

Lot-Sample #...: E6D060259-001 **Matrix.....:** SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Cobalt	ND	38	mg/kg	SW846 6010B	04/10-04/11/06	H2QEV1AL
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Copper	**130**	**19**	**mg/kg**	**SW846 6010B**	**04/10-04/11/06**	**H2QEV1AM**
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Molybdenum	**58**	**30**	**mg/kg**	**SW846 6010B**	**04/10-04/11/06**	**H2QEV1AN**
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Nickel	**44**	**30**	**mg/kg**	**SW846 6010B**	**04/10-04/11/06**	**H2QEV1AP**
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Thallium	**15**	**7.5**	**mg/kg**	**SW846 6010B**	**04/10-04/11/06**	**H2QEV1AQ**
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Vanadium	**97**	**38**	**mg/kg**	**SW846 6010B**	**04/10-04/11/06**	**H2QEV1AR**
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Zinc	**36**	**15**	**mg/kg**	**SW846 6010B**	**04/10-04/11/06**	**H2QEV1AT**
		Dilution Factor: 1		Analysis Time..: 22:11	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6100121		
Prep Batch #...: 6102414						
Mercury	**3.3**	**0.75**	**mg/kg**	**SW846 7471A**	**04/12/06**	**H2QEV1AU**
		Dilution Factor: 1		Analysis Time..: 16:08	Analyst ID.....: 000023	
		Instrument ID..: M04		MS Run #.....: 6102247		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-041

TCLP Metals

Lot-Sample #...: E6D060259-001 **Matrix.....:** SO
Date Sampled...: 04/05/06 15:45 **Date Received..:** 04/06/06 09:50
Leach Date.....: 04/19/06 **Leach Batch #..:** P610917

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 6110549						
Arsenic	ND	0.50	mg/L	SW846 6010B	04/20-04/21/06	H2QEV1DQ
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6110315		
Barium	ND	10	mg/L	SW846 6010B	04/20-04/21/06	H2QEV1DR
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6110315		
Cadmium	ND	0.10	mg/L	SW846 6010B	04/20-04/21/06	H2QEV1DT
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6110315		
Chromium	ND	0.50	mg/L	SW846 6010B	04/20-04/21/06	H2QEV1DU
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6110315		
Lead	ND	0.50	mg/L	SW846 6010B	04/20-04/21/06	H2QEV1DV
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6110315		
Selenium	ND	0.25	mg/L	SW846 6010B	04/20-04/21/06	H2QEV1DW
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6110315		
Silver	ND	0.50	mg/L	SW846 6010B	04/20-04/21/06	H2QEV1DX
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6110315		
Prep Batch #...: 6110553						
Mercury	ND	0.0020	mg/L	SW846 7470A	04/20-04/21/06	H2QEV1D0
		Dilution Factor: 1		Analysis Time..: 12:16	Analyst ID.....: 021088	
		Instrument ID..: M04		MS Run #.....: 6110316		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-041

STLC Metals

Lot-Sample #...: E6D060259-001 **Matrix.....:** SO
Date Sampled...: 04/05/06 15:45 **Date Received..:** 04/06/06 09:50
Leach Date.....: 04/19/06 **Leach Batch #..:** P610915

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 6114353						
Antimony	ND	1.0	mg/L	SW846 6010B	04/24-04/25/06	H2QEV1C6
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		
Arsenic	ND	1.0	mg/L	SW846 6010B	04/24-04/25/06	H2QEV1C7
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		
Barium	ND	10	mg/L	SW846 6010B	04/24-04/25/06	H2QEV1C8
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		
Beryllium	ND	0.10	mg/L	SW846 6010B	04/24-04/25/06	H2QEV1C9
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		
Cadmium	ND	0.10	mg/L	SW846 6010B	04/24-04/25/06	H2QEV1DA
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		
Chromium	**100**	**0.10**	**mg/L**	**SW846 6010B**	**04/24-04/25/06**	**H2QEV1DC**
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		
Cobalt	ND	1.0	mg/L	SW846 6010B	04/24-04/25/06	H2QEV1DD
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		
Copper	ND	1.0	mg/L	SW846 6010B	04/24-04/25/06	H2QEV1DE
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		
Lead	ND	1.0	mg/L	SW846 6010B	04/24-04/25/06	H2QEV1DF
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		

(Continued on next page)

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-041

STLC Metals

Lot-Sample #...: E6D060259-001 **Matrix.....:** SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Molybdenum	ND	1.0	mg/L	SW846 6010B	04/24-04/25/06	H2QEV1DG
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		
Nickel	ND	1.0	mg/L	SW846 6010B	04/24-04/25/06	H2QEV1DH
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		
Selenium	ND	1.0	mg/L	SW846 6010B	04/24-04/25/06	H2QEV1DJ
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		
Silver	ND	0.10	mg/L	SW846 6010B	04/24-04/25/06	H2QEV1DK
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		
Thallium	ND	1.0	mg/L	SW846 6010B	04/24-04/25/06	H2QEV1DL
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		
Vanadium	ND	1.0	mg/L	SW846 6010B	04/24-04/25/06	H2QEV1DM
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		
Zinc	**1.0**	**1.0**	**mg/L**	**SW846 6010B**	**04/24-04/25/06**	**H2QEV1DN**
		Dilution Factor: 1		Analysis Time..: 19:23	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6114219		

Prep Batch #...: 6114595

Mercury	**0.0046**	**0.0020**	**mg/L**	**SW846 7470A**	**04/25/06**	**H2QEV1DP**
		Dilution Factor: 1		Analysis Time..: 15:30	Analyst ID.....: 000023	
		Instrument ID..: M04		MS Run #.....: 6114321		

NOTE(S):

Soluable Threshold Limit Concentration (STLC) done in accordance with App II: Waste Extraction procedures. CCR Title 22.

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-041

TOTAL General Chemistry

Lot-Sample #...: E6D060259-001 **Work Order #...:** H2QEV **Matrix.....:** SO
Date Sampled...: 04/05/06 15:45 **Date Received..:** 04/06/06 09:50
% Moisture.....: 87 **Leach Date.....:** 04/19/06 **Leach Batch #..:** P610916

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Dissolved Hexavalent Chromium	**0.0062**	**0.0010**	**mg/L**	**SW846 7199**	**04/21/06**	**6112064**

Dilution Factor: 1 Analysis Time..: 17:10 Analyst ID.....: 000022
Instrument ID..: W18 MS Run #.....: 6112046

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-041

General Chemistry

Lot-Sample #...: E6D060259-001 **Work Order #...:** H2QEV **Matrix.....:** SO
Date Sampled...: 04/05/06 15:45 **Date Received..:** 04/06/06 09:50
% Moisture.....: 87

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	**97**	**3.0**	**mg/kg**	**SW846 7199**	**04/07/06**	**6096457**
	Dilution Factor: 2		Analysis Time..: 08:57		Analyst ID.....: 0000226	
	Instrument ID..: W18		MS Run #.....: 6096267			
Percent Moisture	**87**	**0.10**	**%**	**MCAWW 160.3 MOD**	**04/10-04/11/06**	**6100260**
	Dilution Factor: 1		Analysis Time..: 11:55		Analyst ID.....: 0000647	
	Instrument ID..: W15		MS Run #.....: 6100157			

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

QC DATA ASSOCIATION SUMMARY

E6D060259

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	SO	SW846 7470A	P610915	6114595	6114321
	SO	SW846 7470A	P610917	6110553	6110316
	SO	SW846 7471A		6102414	6102247
	SO	SW846 6010B		6100199	6100121
	SO	SW846 6010B	P610915	6114353	6114219
	SO	SW846 6010B	P610917	6110549	6110315
	SO	MCAWW 160.3 MOD		6100260	6100157
	SO	SW846 7199		6096457	6096267
	SO	SW846 7199	P610916	6112064	6112046

Table of Contents
TLI Laboratory Data Package

For Laboratory Number: 953519

Section 1.0

Case Narrative

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

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

April 18, 2006

CH2M HILL
Mr. Shawn Duffy
155 Grand Ave., Suite 1000
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK PROJECT, SLUDGE SAMPLE -7,
TLI NO.: 953519

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock project, Sludge Sample -7. A summary table for this sample delivery group is included in Section 2. Complete laboratory report, 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 sample was received and delivered with the chain of custody on April 5, 2006, intact and in chilled condition. The sample will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

No violations or nonconformance actions occurred for this data package.

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services

K. R. P. Iyer

K.R.P. Iyer
Quality Assurance/Quality Control Officer

CC: Mr. Mark Cichy, CH2M HILL Redding CA

TRUESDAIL LABORATORIES, INC.

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www.truesdail.com

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Soil Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00

Laboratory No.: 953519
Date: April 18, 2006
Collected: April 5, 2006
Received: April 5, 2006

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 300.0	Fluoride	Giawad Ghenniwa

Section 2.0

Summary Table of Final Results

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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TUSTIN, CALIFORNIA 92780-7008
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www.truesdail.com

REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953519
Date Received: April 5, 2006

Analytical Results Summary

Lab I.D.	Sample I.D.	Time Sampled	EPA 300.0 *Fluoride* mg/kg
953519	SC-Sludge-WDR-041	15:45	9.12

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

Section 3.0

Final Report

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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REPORT

Client: CH2M HILL
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Soil Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248

Laboratory No.: 953519
Date: April 18, 2006
Collected: April 5, 2006
Received: April 5, 2006
Prep/ Analyzed: April 6, 2006
Analytical Batch: 04AN06E

Investigation: **Fluoride by Ion Chromatography Using EPA 300.0**

Analytical Results Fluoride

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
953519	SC-Sludge-WDR-041	mg/kg	EPA 300.0	14:01	19.9	3.98	9.12

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	953517-1	2.18	2.21	1.37%	≤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	953517-1	2.18	1.00	3.00	3.00	5.03	5.18	95.0%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.11	4.00	103%	90% - 110%	Yes
MRCVS#1	3.10	3.00	103%	90% - 110%	Yes
MRCVS#2	3.10	3.00	103%	90% - 110%	Yes
MRCVS#3	3.10	3.00	103%	90% - 110%	Yes
MRCVS#4	3.11	3.00	104%	90% - 110%	Yes
LCS	4.14	4.00	104%	90% - 110%	Yes
LCSD	4.15	4.00	104%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).
DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

953519

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

CHAIN OF CUSTODY RECORD

[Sludge Sample -7]

COC Number
TURNAROUND TIME 10 Days
DATE 4/5/06 PAGE 1 OF 1

COMPANY CH2M HILL
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 P.O. # 911246
SAMPLERS (SIGNATURE J. Lundberg

Rec'd 04/05/06
s15d
953519

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Arsine (300.0) F	Bioassay 96hr Acute	NUMBER OF CONTAINERS	COMMENTS
SC-Sludge-WDR-041	4/5/06	15:45	Sludge	X	X	4	

ALERT!
Level III QC

For Sample Conditions
See Form Attached

4 TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished) J. Lundberg	J. Lundberg	OMI	4.5.06 16:00
Signature (Received) J Brown	J Brown	TLI	4-5-06 20:30
Signature (Relinquished)			
Signature (Received)			
Signature (Relinquished)			
Signature (Received)			

SAMPLE CONDITIONS
RECEIVED COOL ☐ WARM ☐ °F
CUSTODY SEALED YES ☐ NO ☐
SPECIAL REQUIREMENTS:

17 April 2006

Truesdail Laboratories, Inc.
14201 Franklin Avenue
Tustin, CA 92780

Attention: Sean Condon

Dear Mr. Condon,

The following are the results of the DOHS 96-hour Acute Aquatic Toxicity Screening test performed on the sample labeled 953519 submitted on 6 April 2006.

The sample **PASSED** the DOHS 96-hour Acute Aquatic Toxicity Screening test. Currently, California Code of Regulations (CCR), Title 22, Section 66261.24, Article 6 requires wastes to pass the 96-hour aquatic toxicity testing with greater than 50% survival at the 500 mg/l. In addition to this regulation, the DOHS protocol requires wastes to pass the 96-hour aquatic toxicity testing with greater than 50% survival at the 500 mg/l concentration and 60% survival at the 750 mg/l concentration for compliance of hazardous waste declassification.

MBC Sample Number 06-241 - Client Identification: 953519

PERCENT SURVIVAL

Control	100%
250 mg/l	100%
500 mg/l	100%
750 mg/l	100%

LC50 > 750 mg/l

If you have any questions or require further information, please contact me at your convenience.

Cordially,
MBC *Applied Environmental Sciences*

Sonja M. Beck
Bioassay Manager

SAMPLE ANALYST INFORMATION

Client : Truesdail Laboratories, Inc.

Job# : 06415X

Analysis Required : DOHS 96-hour Acute Toxicity Screening

Species: *Pimephales promelas*

Sample Identification : 953519

MBC Sample No. : 06-241

Analyst(s) : Chris Lim, Brandie L. Smith, Catherine L. Gongol

DEPARTMENT OF HEALTH SERVICES
TITLE 22
96-HOUR ACUTE AQUATIC TOXICITY SCREEN TESTING

Prepared For:

Truesdail Laboratories, Inc.

Prepared By:

MBC *Applied Environmental Sciences*
3000 Redhill Avenue
Costa Mesa, California 92626

April 2006

DEPARTMENT OF HEALTH SERVICES
TITLE 22
96-HOUR ACUTE AQUATIC TOXICITY SCREEN TESTING

Prepared For:

Truesdail Laboratories, Inc.

Prepared By:

MBC *Applied Environmental Sciences*
3000 Redhill Avenue
Costa Mesa, California 92626

April 2006

TABLE OF CONTENTS

INTRODUCTION

Title 22, Article 3, Section 66261.24 (6) of the California Code of Regulations (CCR) establishes the criteria for the identification of hazardous and extremely hazardous waste. The Department of Health Services (DOHS) compiles and evaluates analytical data for compliance with the toxicity criteria for potentially hazardous waste.

These analytical data have been derived from water and environmental samples submitted to laboratories certified by the DOHS for analysis. The California DOHS 96-Hour Acute Aquatic Toxicity testing assures CCR compliance and minimizes risk to the environment or threat to public health.

Laboratory certification by the DOHS standardized the toxicity testing program by requiring certification of testing laboratories and by utilizing the procedures set forth by Dr. James Polisini, Department of Fish and Game, Water Pollution Control Laboratory (Polisini 1988). Following this methodology, a waste can be evaluated for potential hazardous waste declassification.

Currently; CCR, Title 22, Section 66261.24, Article 6 requires wastes to pass the 96-hour aquatic toxicity screen testing with greater than 50% survival at the 500 mg/l concentration. In addition to this regulation, the DOHS protocol requires wastes to pass the 96-hour aquatic toxicity screen testing with greater than 50% survival at the 500 mg/l concentration and a minimum of 60% survival at the 750 mg/l concentration for compliance. When these screening criteria are not achieved, the DOHS test protocol requires additional definitive serial dilution toxicity testing with a minimum of five test concentrations prior to making a hazardous waste compliance determination.

Toxicity testing conducted by MBC for this report is a static non-renewal acute toxicity screen test following Standard Methods and the procedures of Dr. James Polisini. Death is the effect measured and toxicity is reported as percent survivorship at 250 mg/l, 500 mg/l and 750 mg/l concentrations and a LC_{50} calculated from these data. Original data worksheets will remain on file at MBC.

MATERIALS AND METHODS

Facilities

The toxicity tests are conducted in a laboratory located away from disturbances of non-laboratory personnel or other laboratory or heavy equipment. The laboratory, measuring approximately 20 x 20 ft, is insulated to protect it from rapid temperature changes. Shelves and water tables are provided which allow a capacity of 200 or more 5-gallon aquaria, as well as bench space for laboratory equipment and instruments.

Lighting is provided by five evenly spaced two lamp 4-foot cool white fluorescent fixtures that are regulated by a 24-hour timer. The lighting remains on for 16 hours and is off for 8 hours.

The temperature of the toxicity testing laboratory is maintained by a commercial climate controlled unit controlled by wall-mounted thermostat which provide accuracy to $\pm 2\ ^{0}C$.

A Rustrak Model 2066 continuous recording thermograph monitored the laboratory's temperature 24 hours per day. The Rustrak is calibrated annually by the manufacturer to insure accuracy. Maximum-minimum thermometers are maintained within the laboratory to provide "back-up" temperature variation information.

Low pressure air is supplied to the laboratory for the purpose of slowly bubbling air into the exposure tanks to maintain an acceptable dissolved oxygen concentration. Filtered air is supplied via a Sutor-bilt oil-less blower that provides up to 340 l/min at 0.35 kg/cm^2. The blower is equipped with a pressure equalizing expansion chamber and an adjustable pressure relief valve to maintain a constant delivery pressure and volume. Air is delivered to the laboratory through PVC piping with numerous individual flow valves. Individual aquaria receive air through commercial plastic aquarium air tubing and a 3 mm inside diameter by 30 cm long soft glass tube which reaches the bottom of the test container. Air is bubbled into the aquaria at a rate of approximately 30 ml /min following the guidelines of Kopperdahl (1976) and Peltier and Weber (1985).

Test Containers

The toxicity tests are conducted in 5-gallon glass aquaria, approximately 26 cm high, 21 cm wide, and 41 cm long. For the definitive test, the aquaria contain a total of 10 liters of waste material and/or dilution softwater which provides a water depth within the test aquaria of approximately 14 cm.

Test containers are cleaned thoroughly with Liqui-Nox brand commercial glassware detergent and warm tap water, rinsed five times with warm tap water, rinsed with reagent grade acetone, rinsed five times with deionized water, rinsed with 5% HCl, and then rinsed three times with deionized water.

Determination of Water Quality Parameters

Water quality measurements are taken and recorded for pH, dissolved oxygen and temperature after dosage of the appropriate concentration of waste sample to the test aquaria, and at 24, 48, 72, and 96 hours subsequent to initiation of the toxicity test exposures. The following instrumentation and methods are utilized to determine water quality parameters for each of the test and control aquaria. Total alkalinity and hardness, both expressed as mg/l $CaCO_3$, are determined from sub-samples of dilution water and the 750 mg/l concentration obtained immediately prior to initiation and at the completion of toxicity testing.

A Horiba U-10 Water Quality Checker is utilized for determining the pH of the exposure solutions. After stabilization of the reading, the pH is recorded on the static toxicity test worksheet to the nearest 0.1 pH unit.

Dissolved oxygen concentrations (mg/l) are determined by gently swirling the Horiba U-10 Water Quality Checker in the aquarium to be monitored. Dissolved oxygen concentrations are recorded on the static toxicity test worksheet to the nearest 0.1 mg/l, only after stabilization of the reading.

Exposure temperature is determined by the Horiba U-10 Water Quality Checker calibrated by a mercury bulb thermometer graduated to 0.1°C with calibration traceable to the National Institute of Standards and Technology (NIST).

Alkalinity values are calculated by potentiometric titration to a pre-selected pH of 4.6 utilizing Method 2320B, *Standard Methods* (18th Edition).

Hardness values are calculated by EDTA titration utilizing Method 2340C, *Standard Methods* (18th Edition).

TOXICITY TEST PREPARATION

Receiving and Acclimating Fish

The fathead minnows, *Pimephales promelas*, are received from the supplier at least 10 days prior to initiation of toxicity testing. Shipment of the test fish in insulated containers with hard freshwater and an atmosphere of bottled oxygen from Aquatic Biosystems located in Fort Collins, Colorado is via Federal Express overnight to MBC. Upon receipt of the test fish, the plastic bags containing the fathead minnows are floated on the surface of an appropriately sized aquarium containing aged local (hard) drinking water in the temperature controlled toxicity test laboratory. When the temperature of the water in the shipping water is within 0.5°C of the holding tank, each plastic bag is opened and the fish are gently eased into the initial acclimation water containing penicillin. This antibiotic is effective against both gram-negative and gram-positive bacteria as well as fungus. The antibiotic is maintained in the acclimation water for 24 hours while the hardness is slowly decreased to that of the reconstituted moderately hardwater utilizing a reservoir and siphons to slowly change over the water following guidelines in *Standard Methods* (18th Edition). The test fish are subsequently gently transferred using a fine mesh dip net to the maintenance tank for further acclimation until initiation of the toxicity testing.

During the acclimation period, up until 48 hours prior to initiation of the toxicity testing, the fathead minnows are maintained on a diet of Tetramin brand flake food and San Francisco Bay Brand frozen brine shrimp. Tetramin flake food is fed in the morning and brine shrimp in the evening, while observing the behavior and monitoring the quality of the acclimating fish. The quantity of food delivered at each feeding is based upon the quantity that the tank population would completely consume within approximately five minutes of feeding. During these observations, any sick or dead fish are removed and the numbers of each, as well as any observations, are noted in the acclimation tank log book.

Dilution Water Preparation

Dilution water for the toxicity tests is prepared following the formulation of Kopperdahl (1976) and Horning and Weber (1985) for artificially reconstituted softwater. Table I indicates the quantities of reagent grade chemicals utilized in preparing the synthetic freshwater. Reconstituted softwater is prepared in 208 liter linear polyethylene barrels by addition of the salts to deionized (resin exchange column) water followed by thorough mechanical mixing at least 48 hours prior to initiation of the toxicity testing. The reconstituted softwater is maintained in a isolated area of the same temperature-controlled laboratory in which the test fish are acclimated and the toxicity tests are performed to ensure against any significant difference between acclimation and test water temperature that might induce additional stress in the test fish.

Table I. Quantities of reagent grade chemicals required to prepare reconstituted softwater and expected water qualities.

$NaHCO_3$:	48.0 mg/l
$CaSO_4$ $2H_2O$:	30.0 mg/l
$MgSO_4$:	30.0 mg/l
KCl:	2.0 mg/l
pH:	7.2-7.8
Total Hardness:	40-48 mg/l $CaCO_3$
Total Alkalinity:	30-35 mg/l $CaCO_3$

Handling and Storage of the Waste Samples

Upon arrival at MBC, the samples are listed in the Toxicity Test Sample Log Book located in the toxicity testing laboratory by the Toxicity Laboratory Coordinator. The samples are stored at 4°C in a designated area of the cold storage locker labeled "SAMPLES FOR HAZARDOUS WASTE TESTING", until the initiation of toxicity testing. The remaining portion of each sample is returned to the cold storage locker.

WASTE SAMPLE PREPARATION

Dry Waste Material

Each sample is identified as a Type i, Type ii or Type iii material. The samples are weighed into pre-tared Erlenmeyer flasks to yield final replicate sample concentrations of 250 mg/l, 500 mg/l, and 750 mg/l. Approximately 200 ml of dilution water is added to each flask. The flasks are capped with parafilm, a neoprene stopper and aluminum foil and are mechanically shaken for six hours.

Liquid Waste of Low Viscosity

To determine the volume of a low viscosity liquid sample needed to dose the toxicity test, the specific gravity is measured.

The waste sample to be used in the toxicity test is first mechanically shaken or homogenized so as to evenly distribute any particulate matter in the sample. A known amount of sample, usually 20 ml, is drawn up through a volumetric pipette and dispensed into a 100 ml beaker that has previously been weighed on a Mettler balance to four decimal places. The beaker containing the known volume of sample is then re-weighed on the Mettler balance. The difference in weight of the beaker with the sample and the weight of the beaker when it is empty is divided by the known volume of the sample (in milliliters) to determine the specific gravity. This process is repeated in triplicate and the mean specific gravity is used in subsequent dosage determinations.

The sample is measured by pipette into pre-tared Erlenmeyer flasks to yield final replicate sample concentrations of 250 mg/l, 500 mg/l, and 750 mg/l. Approximately 200 ml of dilution water is added to each flask. The flasks are capped with parafilm, a neoprene stopper and aluminum foil and mechanically shaken for six hours.

TOXICITY TESTING

Dosing Test Aquaria

After shaking, the samples are dosed into the appropriately marked aquaria containing approximately 9 liters of dilution water. Dilution water is then added to the 10 liter mark to yield a final volume of 10 liters for all test conditions.

Reconstituted softwater (dilution water only) controls are established as a quality assurance measure. All test conditions and controls are run concurrently.

Initial Water Quality Measurements

Prior to the addition of the test fish, preliminary water quality measurements are taken for dissolved oxygen and pH to determine if adjustment is necessary (Polisini 1988).

An initial hardness and alkalinity test analysis is performed on the control and the 750 mg/l concentrations.

Addition of Test Fish

The test fish (fathead minnows) are gently corralled and dip netted in small groups from the plexiglass maintenance tank into smaller aquaria to confirm species identity and the healthy condition of each individual fish to be utilized in the test. Fish exhibiting any abnormalities, disease, wounds, or unusual behavior or color patterns are removed and destroyed. Those fish that passed the individual screening inspection are randomly allocated to test aquaria and controls.

Ten fathead minnows are gently released into each of the test aquaria replicate and the control, taking care not to allow the dip nets to contact the exposure media.

Observations

Water quality parameters, enumeration of live organisms and any ancillary observations pertinent to the conduct of the toxicity tests are taken and recorded on the toxicity test worksheets at initiation and subsequently at 24, 48, 72, and 96 hours after initiation of the toxicity test exposures. Daily water quality parameters, live organism enumeration, and ancillary observations are recorded on individual toxicity testing worksheets. The worksheets are presented in Appendix A.

Alkalinity and Hardness Analysis

Total alkalinity and hardness, both expressed as mg/l $CaCO_3$, are determined by replicate samples utilizing the procedures in Method 2320B and 2340C, *Standard Methods* (18th Edition). Sub-samples of the dilution water control and the 750 mg/l concentration are obtained immediately prior to initiation and at the completion of toxicity testing and the results are presented on the toxicity test worksheets.

Determination of Test Fish Lengths and Weights

At the conclusion of testing, 20 of the surviving fish are wet weighed to the nearest 0.1 gram on an analytical balance and measured to the nearest millimeter. The data are recorded on a Fish Weight/Length Measurements form and presented in Appendix B. All surviving fish are then destroyed following the procedures in *Standard Methods* (18th Edition).

RESULTS

Standard DOHS Toxicity Screen Testing

Toxicity testing conducted by MBC for this report is a static non-renewal acute toxicity screen test following Standard Methods and the procedures of Dr. James Polisini. Death is the effect measured and toxicity is reported as percent survivorship at 250 mg/l, 500 mg/l and 750 mg/l concentrations and a LC_{50} calculated from these data. Original data worksheets will remain on file at MBC.

REFERENCES

American Public Health Association (APHA), American Water Works Association (AWWA) and Water Pollution Control Federation (WPCF). 1992. 18th Edition. Standard methods for examination of water and wastewater.

American Society for Testing and Materials (ASTM). 1982. Parts 23 and 24.

Environmental Protection Agency. 1979b. Methods for chemical analysis of water and wastes. EPA-600/4-79-020.

Horning II, W. B., and C. I. Weber. 1985. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms. EPA/600/4-85/014. 162 pp.

Kopperdahl, F. R. 1976. Guidelines for performing static acute toxicity fish bioassays in municipal and industrial wastewaters. Report to California State Water Resources Control Board by Department of Fish and Game. 65 pp.

Peltier, W. H., and C. I. Weber. 1985. Methods for measuring the acute toxicity of effluents to freshwater and marine organisms (Third Edition), EPA/600/4-85/013. 216 pp.

Plumb, R. H., Jr. 1981. Procedure for handling and chemical analysis of sediment and water samples. Technical report EPA/CE-81-1 prepared by Great Lakes Laboratory, State University College at Buffalo, Buffalo, New York for the U.S. Environmental Protection Agency/Corps of Engineers Technical Committee on Criteria for Dredged and Fill Material. Published by the U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, Mississippi.

Polisini, J. M. 1988. Static acute bioassay procedures for hazardous waste samples. California Fish and Game, Water Pollution Control Laboratory.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW - 846, 2nd edition, U.S. Environmental Protection Agency, 1982.

APPENDIX A
DAILY WATER QUALITY PARAMETERS AND LIVE ORGANISM ENUMERATION DATA

DEPARTMENT OF HEALTH SERVICES ACUTE AQUATIC SCREENING TOXICITY TEST

MBC Job # 06415X

Client: Truesdail Laboratories

Date/Time Sampled: 04/05/06, 15:45

Date/Time Started: 04/11/06, 15:53

MBC Sample # 06-241

Sample Identification: 953519

Date/Time Terminated: 04/15/06, 14:0(

Aquar.	Test	0 Hours				24 Hours				48 Hours				72 Hours				96 Hours			
#	Conc.	pH	DO	Temp	Live	pH	DO	Temp	Live	pH	DO	Temp	Live	pH	DO	Temp	Live	pH	DO	Temp	Live
1	Control	7.6	6.5	20.4	10	7.6	6.4	20.4	10	7.6	6.9	19.4	10	8.0	7.4	21.1	10	7.9	7.2	21.5	10
2	250 mg/l	7.9	7.9	20.4	10	7.9	7.2	20.4	10	7.8	7.8	19.2	10	8.0	7.8	21.2	10	8.0	7.7	21.6	10
3	250 mg/l	8.0	8.2	20.3	10	7.9	7.1	20.4	10	7.9	8.0	19.1	10	8.0	7.3	21.3	10	7.8	7.9	21.7	10
4	500 mg/l	8.0	6.5	20.6	10	7.8	6.6	20.5	10	7.8	7.2	19.0	10	8.0	7.7	21.4	10	7.9	7.8	21.8	10
5	500 mg/l	8.1	7.9	20.5	10	7.8	7.1	20.5	10	7.8	7.5	19.2	10	8.0	7.0	21.6	10	7.9	7.8	21.8	10
6	750 mg/l	8.2	8.1	20.3	10	7.9	7.2	20.4	10	7.8	7.7	19.1	10	8.0	7.7	21.5	10	8.0	7.9	21.8	10
7	750 mg/l	8.2	8.2	20.3	10	7.9	7.2	20.3	10	7.9	8.0	19.0	10	7.9	7.6	21.5	10	7.9	7.5	21.7	10

Species: Fathead Minnow *(Pimephales promelas)*

Number of fish/replicate concentration: 1C

Volume of test solution: 10L

Acclimatization: 1 days at 20°C

Percent dead in acclimatization tank: <1%

Type Aeration: as per Polisini (1988)

Dilution Water Source: Reconstituted softwate

RANGE	MIN.	MAX.
pH Range:	7.6	8.2
DO Range:	6.4	8.2
Temp Range:	19.0	21.8

Results:

Concentration	% Survival
Control	100%
250 mg/l	100%
500 mg/l	100%
750 mg/l	100%

LC50 > 750 mg/l

	0 Hours		96 Hours	
	A	H	A	H
Control	33	43	34	44
750 mg/l	34	59	36	61

NOTES: Normal.

Reviewed By:

APPENDIX B
FISH LENGTH AND WEIGHT MEASUREMENTS

Bioassay Fish Length/Weight Measurements

MBC JOB #: 06415X

CLIENT: Truesdail Laboratories

MBC SAMPLE #: 06-241

DATE OF TEST: 4/11/06

SPECIES: Fathead minnow ***(Pimephales promelas)***

SAMPLE IDENTIFICATION: 953519

	Standard Length mm	Weight g		Standard Length mm	Weight g
1.	33	0.50	11.	30	0.30
2.	28	0.32	12.	30	0.38
3.	28	0.26	13.	30	0.35
4.	32	0.42	14.	28	0.27
5.	28	0.28	15.	33	0.39
6.	26	0.23	16.	28	0.25
7.	32	0.39	17.	29	0.33
8.	30	0.36	18.	27	0.27
9.	29	0.36	19.	30	0.41
10.	32	0.41	20.	29	0.28

	Length (mm)	Weight (g)
Average:	30	0.34
Maximum:	33	0.50
Minimum:	26	0.23

Technician: CLG

Date: 04/14/06

Reviewed By: 

APPENDIX C
SAMPLE ANALYSIS INFORMATION

SAMPLE ANALYSIS INFORMATION

CLIENT: Truesdail Laboratories

SAMPLE IDENTIFICATION: 953519

MBC JOB NUMBER: 06415X MBC SAMPLE NUMBER: 06-241

SAMPLE DATE/TIME: 04/05/06, 15:45

DATE SAMPLE RECEIVED BY MBC: 04/06/06

ANALYSIS REQUIRED: Title 22 DOHS 96-hour Acute Aquatic Toxicity Test

DATE/TIME ANALYSIS INITIATED: 04/11/06, 15:53

DATE/TIME ANALYSIS TERMINATED: 04/15/06, 14:0

AMOUNT OF SAMPLE: 8 ounces

QUALITATIVE DESCRIPTION OF SAMPLE: A soil sludge matrix. Brown in color, with no odor.

SPECIAL SAMPLE PREPARATION: Shake for 6 hours.

SAMPLE ADJUSTMENTS DURING ANALYSIS: Air added at 0 hours.

RESULTS:

Concentration	% Survival
Control	100%
250mg/l	100%
500 mg/l	100%
750 mg/l	100%

LC_{50} > 750 mg/l

NOTES: Normal.

Reviewed By: