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November 15, 2005

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: October 2005 Monthly Report for the Interim Measure No. 3 Groundwater  
Treatment System at the PG&E Topock Compressor Station, Needles, California

Dear Mr. Perdue:

Enclosed is the October 2005 Monthly Report for the Pacific Gas and Electric Company's (PG&E) Topock Compressor Station, Interim Measure (IM) No. 3 Groundwater Treatment System. This Report is submitted in compliance with the Waste Discharge Requirements (WDRs) issued by the Colorado River Basin Regional Water Quality Control Board (CRBRWQCB) under Board Order R7-2004-0103.

WDRs under Board Order R7-2004-0103 apply to discharge by subsurface injection wells only. In addition to Board Order No. R7-2004-0103, the CRBRWQCB issued WDRs for discharge to the Colorado River (Board Order R7-2004-0100) and WDRs for discharge to the PG&E Compressor Station (Board Order R7-2004-0080). To date, there has been no system discharge to the Colorado River or the PG&E Compressor Station. PG&E has no plans to exercise these options at this time.

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

Sincerely,

Curt Russell  
Topock Onsite Project Manager

Enclosures:

October 2005 Monthly Report for the IM No. 3 Groundwater Treatment System

cc: Jose Cortez, RWQCB  
Liann Chavez, RWQCB  
Norman Shopay, DTSC

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*Final Report*

# **October 2005 Monthly Report for Interim Measure No. 3 Groundwater Treatment System**

**Waste Discharge Requirements  
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**

November 15, 2005

**CH2MHILL**  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

**October 2005 Monthly 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

November 15, 2005

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



Dennis Fink, PE No. 68986  
Project Engineer



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# Acronyms and Abbreviations

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DTSC	California Department of Toxic Substances Control
gpm	gallons per minute
IM	Interim Measure
MRP	Monitoring and Reporting Program
PG&E	Pacific Gas and Electric Company
Water Board	California Regional Water Quality Control Board, Colorado River Basin Region
WDR	Waste Discharge Requirements

# 1.0 Introduction

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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.

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 15<sup>th</sup> day of the following month. **This report covers monitoring activities related to operation of the IM No. 3 groundwater treatment system for October 2005.**

In addition to Board Order No. R7-2004-0103, the Water Board issued Waste Discharge Requirements (WDRs) for discharge to the Colorado River (Board Order R7-2004-0100) and reuse at the PG&E Compressor Station (Board Order R7-2004-0080). To date, there has been no system discharge to the Colorado River and no reuse at the PG&E Compressor Station. PG&E has no plans to exercise these options at this time.

## 2.0 Sampling Station Locations

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Table 1 lists the locations of sampling stations. The locations of the sampling stations are provided in process and instrumentation diagrams TP-PR-10-10-04, TP-PR-10-10-08, and TP-PR-10-10-06, which were previously provided in PG&E's Sampling Locations letter to the Water Board Executive Officer, dated June 29, 2005. These figures are provided again at the end of this report.



## 3.0 Description of Activities

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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 at 2:00 p.m. after successfully completing the startup phase in accordance with the WDRs. Full-time operation of the treatment system commenced in August 2005.

During October 2005, operation of the treatment system and discharge to injection well IW-2 (Figure 1) operated under the following conditions (excluding downtime, which is described in Section 4.0):

- **October 1 through 10:** Operated extraction well TW-2D at a target pump rate of at least 90 gallons per minute (gpm).
- **October 10 through 11:** Operated extraction well TW-2S at a pump rate of 45 gpm while the well pump in TW-2D was replaced.
- **October 11 through 31:** Operated extraction well TW-2D at a target pump rate of at least 90 gpm.

## 4.0 Groundwater Treatment System Flow Rates

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The October 2005 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-2D and TW-2S (Figure TP-RP-10-10-3). 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).

Periods of extraction well downtime, during October 2005, are summarized below:

- **October 5, 2005:** Extraction well TW-2D and IM No. 3 treatment system was shut down to install an air line connection for the microfilter system. Extraction well downtime was 4 hours 48 minutes.
- **October 9, 2005:** Extraction well TW-2D and IM No. 3 treatment system shut down for 12 minutes due to a low-flow alarm on a sodium hydroxide feed pump.
- **October 10, 2005:** Extraction well TW-2D pump failed at 6:40 a.m. and extraction well TW-2S was brought online at 7:30 a.m. The pump in extraction well TW-2D was replaced on October 11, 2005 and resumed full-time operation at 5:06 p.m. on that day. Extraction well downtime was approximately 50 minutes on October 10 to switch operation from TW-2D to TW-2S.
- **October 12, 2005:** Extraction well TW-2D and IM No. 3 treatment system shut down due to a microfilter pressure transducer malfunction. Extraction well downtime was 41 minutes.
- **October 13, 2005:** Extraction well TW-2D was shut down for 49 minutes due to high water level in the raw water receiving tank (T-100).
- **October 17, 2005:** Extraction well TW-2D and IM No. 3 treatment system shut down due to an alarm in the leak detection system following a lightning strike. The leak detection points in the pipeline were inspected and no liquid was observed. The leak detection system control panel was shipped to the manufacturer to repair the apparent lightning damage. Extraction well downtime was 1 hour. The onsite operators physically inspected leak detection points along the pipeline for the remainder of the month while the control panel was repaired. No liquid was observed in the secondary containment pipe during any inspection. The control panel is scheduled to be re-installed in November 2005.
- **October 26, 2005:** Extraction well TW-2D and the IM No. 3 treatment system were shut down for 26 minutes to switch from generator power to City of Needles power. The facility was operating since September 26, 2005 on generator power until the facility transient voltage surge suppression could be replaced.

- **October 26, 28, and 30, 2005:** Extraction well TW-2D and the IM No. 3 facility were shut down to conduct chemical cleaning (i.e., clean in place) of the microfilter membranes. Extraction well TW-2D was shut down for a total of 18 hours 9 minutes while the cleaning activities were completed.
- **October 31, 2005:** Extraction well TW-2D and the IM No. 3 treatment system were shut down due to in-line pH meter readings outside of the operating target range. One pH meter was re-calibrated and returned to service, and one pH meter was replaced with a spare. Extraction well TW-2D downtime was 2 hours 30 minutes.

## 5.0 Sampling and Analytical Procedures

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All samples were collected at the designated sampling locations and placed directly into containers provided by Truesdail Laboratories, Inc. or Severn Trent Laboratories, Inc. Sample containers were labeled and packaged according to standard sampling procedures.

The samples were stored in a cooler at 4° Celsius and transported to Truesdail Laboratories, Inc. or Severn Trent Laboratories, Inc. via a courier service under chain-of-custody documentation. Truesdail Laboratories, Inc. is certified by the California Department of Health Services (Certification #1237) under the State of California's Environmental Laboratory Accreditation Program. Severn Trent Laboratories, Inc. is also certified by the California Department of Health Services (Certification #1118) under the 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 CFR Part 136), promulgated by the United States Environmental Protection Agency.

As required by the MRP, the analytical method selected for total chromium had a method detection limit of 1 part per billion, and the analytical method selected for hexavalent chromium had a method detection limit of 0.2 part per billion.

Influent, effluent, and reverse osmosis concentrate sampling was conducted in accordance with the sampling frequency required by the MRP. The sampling analytical results are shown in Tables 3, 4 and 5, 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). Reporting of quarterly groundwater monitoring analytical results will be in a separate document, in conjunction with groundwater level maps of the same monitoring wells. The next groundwater monitoring report (Fourth Quarter 2005) is scheduled for release on January 15, 2006.

## 6.0 Analytical Results

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Laboratory reports prepared by the certified analytical laboratory(ies) are presented in Appendix A. Influent, effluent, and reverse osmosis concentrate sample analytical results are presented in Tables 3, 4, and 5, respectively.

A sludge sample was collected September 22, 2005. The analytical results and aquatic bioassay test results were presented in the September 2005 monthly report, in accordance with the quarterly reporting requirements. Additional analysis of leachate from the same sample was completed October 2005 for the purpose of waste characterization; the waste characterization laboratory report is provided in Appendix A. The first container of sludge (approximately 18 cubic yards) was transported offsite October 28, 2005 to Chemical Waste Management's Kettleman Hills facility for disposal as a non-RCRA hazardous waste.

Table 6 identifies the laboratory that performed each analysis and lists the following additionally required monitoring information:

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

## 7.0 Conclusions

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


## 8.0 Certification

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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: November 15, 2005





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**TABLE 1**  
Sampling Station Description  
*October 2005 Report for IM No. 3 Groundwater Treatment System*

<b>Sample Station</b>	<b>Sample ID<sup>1</sup></b>	<b>Location</b>
Sampling Station A: Groundwater Treatment System Influent	SC-100B-WDR-###	Sample collected from tap on pipe into T-100 (see Figure TP-RP-10-10-04).
Sampling Station B: Groundwater Treatment System Effluent	SC-700B-WDR-###	Sample collected from tap on pipe downstream from T-700 (see Figure TP-RP-10-10-04).
Sampling Station D: Groundwater Treatment System Reverse Osmosis Concentrate	SC-701-WDR-###	Sample collected from tap on pipe into T-701 (see Figure 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).

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<sup>1</sup>The sample event is included at the end of the sample ID (e.g. SC-100B-WDR-015).

TABLE 2  
Flow Monitoring Results  
*October 2005 Report for IM No. 3 Groundwater Treatment System*

Parameter	System Influent <sup>1,3</sup>	System Effluent	Reverse Osmosis Concentrate <sup>2,3</sup>
Average Monthly Flowrate (gpm)	90.4	80.6	8.7

gpm: gallons per minute

<sup>1</sup>Includes both pumping from TW-2D and TW-2S.

<sup>2</sup>Reverse Osmosis flow meter reading from FIT-701. The monthly average flow rate from waste disposal manifests was also calculated to be 8.7 gpm.

<sup>3</sup>The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates is approximately 1 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 <sup>a</sup>  
October 2005 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		Weekly						Monthly																
<div>Sample ID</div> <div>Date</div>	Analytes Units <sup>b</sup>	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
		mg/L	NTU	µmhos/cm	pHunits	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L
SC-100B-WDR-015	10/5/2005	6040	ND (0.1)	9020	7.35	3790	3960	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SC-100B-WDR-016	10/12/2005	5950	ND (0.1)	9200	7.60	4240	3600	ND (52)	1.43	ND (3.0)	ND (5.0)	ND (300)	1.59	ND (10)	2.91	ND (2.1)	ND (500)	24.7	ND (20)	4.90	0.0089 J	727	ND (300)	22.4
SC-100B-WDR-017	10/19/2005	6080	ND (0.1)	9190	7.48	3680	3790	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SC-100B-WDR-018	10/25/2005	5880	ND (0.1)	9160	7.35	3270	3900	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

**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

<sup>a</sup> Sampling Location for all Influent Samples is tap on pipe from extraction wells into tank T-100 (see attached P&ID TP-PR-10-10-04)

<sup>b</sup> Units reported in this table are those units required in the WDRs

TABLE 4  
Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)  
Effluent Monitoring Results<sup>a</sup>  
October 2005 Monthly Report for Interim Measures No.3 Groundwater Treatment System

WDRs Effluent Limits <sup>b</sup>	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	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	NA	
Required Sampling Frequency		Weekly						Monthly																	
<div><div></div><div>Analytes Units <sup>c</sup></div></div>	Date	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	
		mg/L	NTU	µmhos/cm	pHunits	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L
Sample ID																									
SC-700B-WDR-015	10/5/2005	4170	ND (0.1)	6350	7.84	ND (1.0)	0.29	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SC-700B-WDR-016	10/12/2005	3760	ND (0.1)	6080	7.97	ND (1.0)	ND (0.2)	ND (52)	2.83	ND (3.0)	ND (5.0)	ND (300)	1.32	ND (10)	1.84	ND (2.1)	ND (500)	10.5	ND (20)	3.58	0.0059 J	448	ND (300)	20.5	
SC-700B-WDR-017	10/19/2005	3850	ND (0.1)	5950	7.83	ND (1.0)	0.21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SC-700B-WDR-018	10/25/2005	3990	0.155	7180	7.90	ND (1.0)	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

<sup>a</sup> 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)  
<sup>b</sup> 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.  
<sup>c</sup> 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 <sup>a</sup>  
October 2005 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		Weekly					Monthly																
<div>Sample ID</div>	<div>Analytes Units <sup>b</sup> Date</div>	TDS	Specific Conductance	pH	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		mg/L	µmhos/cm	pHunits	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SC-701-WDR-015	10/5/2005	24700	39900	7.78	ND (0.001)	ND (0.002)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SC-701-WDR-016	10/12/2005	24100	39800	7.97	ND (0.001)	ND (0.002)	ND (0.01)	ND (0.01)	ND (0.3)	ND (0.01)	ND (0.01)	ND (0.01)	0.0125	11.8	ND (0.01)	0.067	ND (0.0002)	ND (0.02)	ND (0.021)	ND (0.01)	ND (0.01)	1.15	0.0252
SC-701-WDR-017	10/19/2005	26000	40800	7.84	ND (0.001)	ND (0.002)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SC-701-WDR-018	10/25/2005	28400	46900	7.91	ND (0.01)	0.002	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

**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

<sup>a</sup> Sampling Location for all Reverse Osmosis Samples is tap on pipe T-701 (see attached P&ID TP-PR-10-10-08)  
<sup>b</sup> Units reported in this table are those units required in the WDRs  
<sup>c</sup> Sample SC-701-082505 results were not available for the IM No.3 August 2005 Monthly Report

TABLE 6

Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)

Monitoring Information

October 2005 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-015	David Chaney	10/5/2005	9:25:00 AM	TLI	EPA 120.1	SC	10/6/2005	Alex Hernandez
					TLI	EPA 150.1	PH	10/6/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	10/6/2005	Emilia Haley
					TLI	EPA 180.1	TRB	10/6/2005	Gautam Savani
					TLI	EPA 6010B	CRT	10/8/2005	Riddhi Patel
					TLI	SW 7199	CR6	10/6/2005	Jorge Arriaga
SC-100B	SC-100B-WDR-016	Gary Sibble	10/12/2005	10:11:00 AM	TLI	EPA 120.1	SC	10/13/2005	Alex Hernandez
					TLI	EPA 150.1	PH	10/13/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	10/13/2005	Emilia Haley
					TLI	EPA 180.1	TRB	10/13/2005	Gautam Savani
					TLI	EPA 300.0	SO4	10/13/2005	David Blackburn
					TLI	EPA 300.0	NO3N	10/13/2005	David Blackburn
					TLI	EPA 300.0	FL	10/13/2005	David Blackburn
					TLI	EPA 350.2	NH3N	10/14/2005	Alex Hernandez
					TLI	EPA 354.1	NO2N	10/14/2005	Hope Trinidad
					TLI	EPA 6010B	BA	10/19/2005	Riddhi Patel
					TLI	EPA 6010B	NI	10/19/2005	Riddhi Patel
					TLI	EPA 6010B	B	10/20/2005	Riddhi Patel
					TLI	EPA 6010B	AL	10/20/2005	Riddhi Patel
					TLI	EPA 6010B	CRT	10/19/2005	Riddhi Patel
					TLI	EPA 6010B	MN	10/20/2005	Riddhi Patel
					TLI	EPA 6010B	ZN	10/19/2005	Riddhi Patel
					TLI	EPA 6010B	FE	10/20/2005	Riddhi Patel
					TLI	SW 6020A	AS	10/20/2005	Victoria Than
					TLI	SW 6020A	CU	10/19/2005	Victoria Than
					TLI	SW 6020A	MO	10/19/2005	Victoria Than
					TLI	SW 6020A	PB	10/19/2005	Victoria Than
					TLI	SW 6020A	SB	10/19/2005	Victoria Than
					TLI	SW 7199	CR6	10/13/2005	Jorge Arriaga
SC-100B	SC-100B-WDR-017	Joseph Ledbetter	10/19/2005	2:30:00 PM	TLI	EPA 120.1	SC	10/20/2005	Alex Hernandez
					TLI	EPA 150.1	PH	10/20/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	10/20/2005	Emilia Haley
					TLI	EPA 180.1	TRB	10/20/2005	Gautam Savani
					TLI	EPA 6010B	CRT	10/25/2005	Riddhi Patel
					TLI	SW 7199	CR6	10/20/2005	Vanna Kho

TABLE 6

Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)

Monitoring Information

October 2005 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-018	Joseph Ledbetter	10/25/2005	1:05:00 PM	TLI	EPA 120.1	SC	10/25/2005	Alex Hernandez
					TLI	EPA 150.1	PH	10/26/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	10/26/2005	Emilia Haley
					TLI	EPA 180.1	TRB	10/26/2005	Gautam Savani
					TLI	EPA 6010B	CRT	10/27/2005	Riddhi Patel
					TLI	SW 7199	CR6	10/26/2005	Vanna Kho
SC-700B	SC-700B-WDR-015	Brian Dobbs	10/5/2005	9:25:00 AM	TLI	EPA 120.1	SC	10/6/2005	Alex Hernandez
					TLI	EPA 150.1	PH	10/6/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	10/6/2005	Emilia Haley
					TLI	EPA 180.1	TRB	10/6/2005	Gautam Savani
					TLI	EPA 6010B	CRT	10/6/2005	Riddhi Patel
					TLI	SW 7199	CR6	10/6/2005	Jorge Arriaga
SC-700B	SC-700B-WDR-016	Gary Sibble	10/12/2005	9:52:00 AM	TLI	EPA 120.1	SC	10/13/2005	Alex Hernandez
					TLI	EPA 150.1	PH	10/13/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	10/13/2005	Emilia Haley
					TLI	EPA 180.1	TRB	10/13/2005	Gautam Savani
					TLI	EPA 300.0	FL	10/13/2005	David Blackburn
					TLI	EPA 300.0	NO3N	10/13/2005	David Blackburn
					TLI	EPA 300.0	SO4	10/13/2005	David Blackburn
					TLI	EPA 350.2	NH3N	10/14/2005	Alex Hernandez
					TLI	EPA 354.1	NO2N	10/14/2005	Hope Trinidad
					TLI	EPA 6010B	NI	10/19/2005	Riddhi Patel
					TLI	EPA 6010B	ZN	10/19/2005	Riddhi Patel
					TLI	EPA 6010B	FE	10/20/2005	Riddhi Patel
					TLI	EPA 6010B	MN	10/20/2005	Riddhi Patel
					TLI	EPA 6010B	CRT	10/18/2005	Riddhi Patel
					TLI	EPA 6010B	BA	10/19/2005	Riddhi Patel
					TLI	EPA 6010B	AL	10/20/2005	Riddhi Patel
					TLI	EPA 6010B	B	10/20/2005	Riddhi Patel
					TLI	SW 6020A	PB	10/19/2005	Victoria Than
					TLI	SW 6020A	MO	10/19/2005	Victoria Than
					TLI	SW 6020A	CU	10/19/2005	Victoria Than
					TLI	SW 6020A	SB	10/19/2005	Victoria Than
					TLI	SW 6020A	AS	10/20/2005	Victoria Than
					TLI	SW 7199	CR6	10/13/2005	Jorge Arriaga

TABLE 6

Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)

Monitoring Information

October 2005 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-017	Joseph Ledbetter	10/19/2005	2:35:00 PM	TLI	EPA 120.1	SC	10/20/2005	Alex Hernandez
					TLI	EPA 150.1	PH	10/20/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	10/20/2005	Emilia Haley
					TLI	EPA 180.1	TRB	10/20/2005	Gautam Savani
					TLI	EPA 6010B	CRT	10/25/2005	Riddhi Patel
					TLI	SW 7199	CR6	10/20/2005	Vanna Kho
SC-700B	SC-700B-WDR-018	Joseph Ledbetter	10/25/2005	1:20:00 PM	TLI	EPA 120.1	SC	10/25/2005	Alex Hernandez
					TLI	EPA 150.1	PH	10/26/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	10/26/2005	Emilia Haley
					TLI	EPA 180.1	TRB	10/26/2005	Gautam Savani
					TLI	EPA 6010B	CRT	10/27/2005	Riddhi Patel
					TLI	SW 7199	CR6	10/26/2005	Vanna Kho
SC-701	SC-701-WDR-015	David Chaney	10/5/2005	9:15:00 AM	TLI	EPA 120.1	SC	10/6/2005	Alex Hernandez
					TLI	EPA 150.1	PH	10/6/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	10/6/2005	Emilia Haley
					TLI	EPA 6010B	CRT	10/6/2005	Riddhi Patel
					TLI	SW 7199	CR6	10/6/2005	Jorge Arriaga
SC-701	SC-701-WDR-016	Gary Sibble	10/12/2005	10:28:00 AM	TLI	EPA 120.1	SC	10/13/2005	Alex Hernandez
					TLI	EPA 150.1	PH	10/13/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	10/13/2005	Emilia Haley
					TLI	EPA 300.0	FL	10/13/2005	David Blackburn
					TLI	EPA 6010B	CRT	10/18/2005	Riddhi Patel
					TLI	EPA 6010B	NI	10/19/2005	Riddhi Patel
					TLI	EPA 6010B	ZN	10/19/2005	Riddhi Patel
					TLI	EPA 6010B	BA	10/19/2005	Riddhi Patel
					TLI	EPA 7470A	HG	10/14/2005	Victoria Than
					TLI	SW 6020A	CO	10/19/2005	Victoria Than
					TLI	SW 6020A	AG	10/19/2005	Victoria Than
					TLI	SW 6020A	AS	10/20/2005	Victoria Than
					TLI	SW 6020A	CD	10/19/2005	Victoria Than
					TLI	SW 6020A	V	10/20/2005	Victoria Than
					TLI	SW 6020A	CU	10/19/2005	Victoria Than
					TLI	SW 6020A	PB	10/19/2005	Victoria Than
					TLI	SW 6020A	TL	10/19/2005	Victoria Than
					TLI	SW 6020A	BE	10/20/2005	Victoria Than



TABLE 6

Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)

Monitoring Information

*October 2005 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-016	Gary Sibble	10/12/2005	10:28:00 AM	TLI	SW 6020A	SB	10/19/2005	Victoria Than
					TLI	SW 6020A	MO	10/19/2005	Victoria Than
					TLI	SW 6020A	SE	10/20/2005	Victoria Than
					TLI	SW 7199	CR6	10/13/2005	Jorge Arriaga
SC-701	SC-701-WDR-017	Joseph Ledbetter	10/19/2005	2:39:00 PM	TLI	EPA 120.1	SC	10/20/2005	Alex Hernandez
					TLI	EPA 150.1	PH	10/20/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	10/20/2005	Emilia Haley
					TLI	EPA 6010B	CRT	10/25/2005	Riddhi Patel
					TLI	SW 7199	CR6	10/20/2005	Vanna Kho
SC-701	SC-701-WDR-018	Joseph Ledbetter	10/25/2005	1:15:00 PM	TLI	EPA 120.1	SC	10/25/2005	Alex Hernandez
					TLI	EPA 150.1	PH	10/26/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	10/26/2005	Emilia Haley
					TLI	EPA 6010B	CRT	10/27/2005	Riddhi Patel
					TLI	SW 7199	CR6	10/26/2005	Vanna Kho

TABLE 6

Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)

Monitoring Information

October 2005 Monthly Report for Interim Measures No.3 Groundwater Treatment System

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**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)

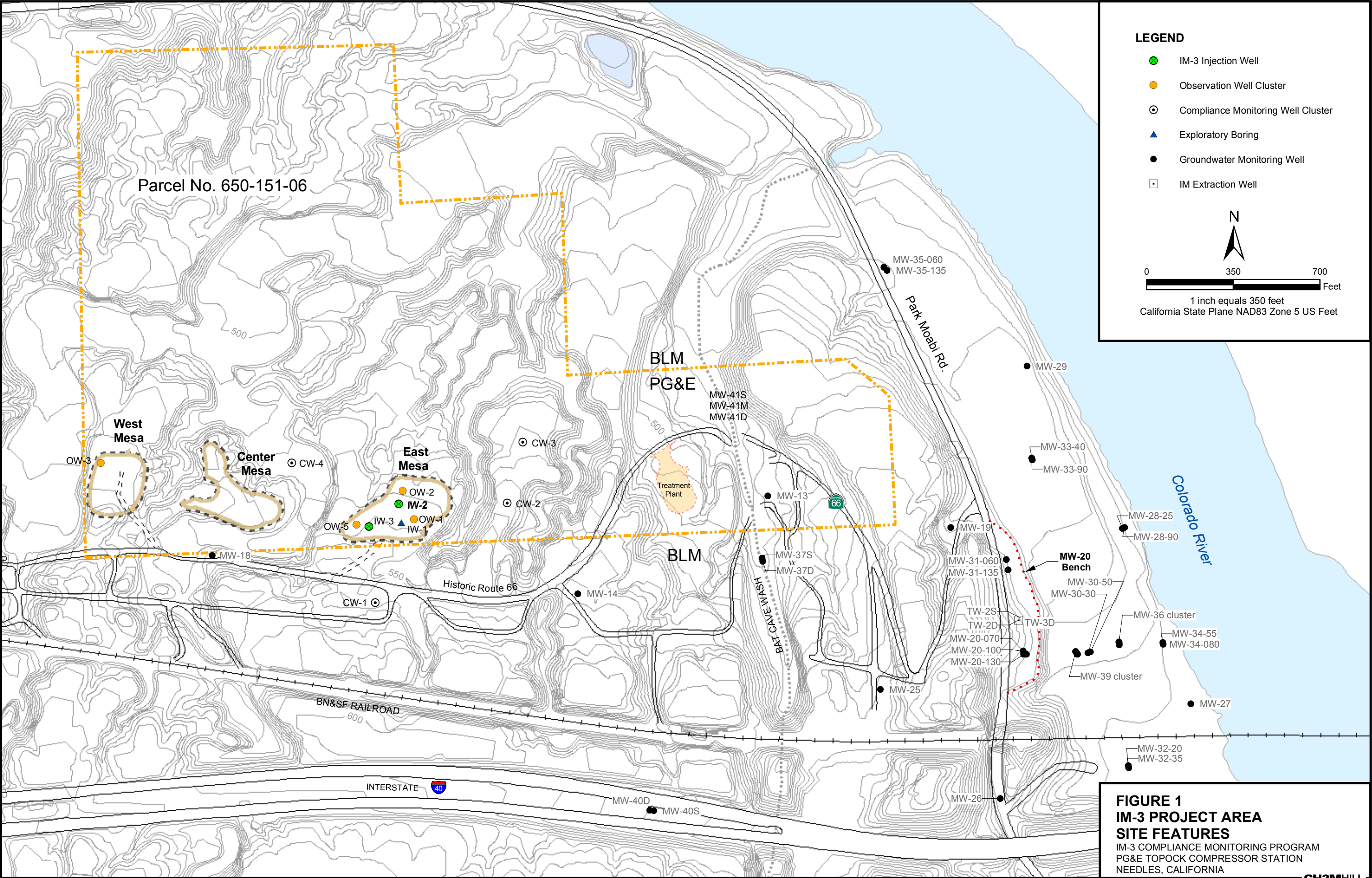
SC-701 = Sampling Location for all Reverse Osmosis Samples is tap on pipe T-701 (see attached P&ID TP-PR-10-10-08)

TLI = Truesdail Laboratories, Inc.

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

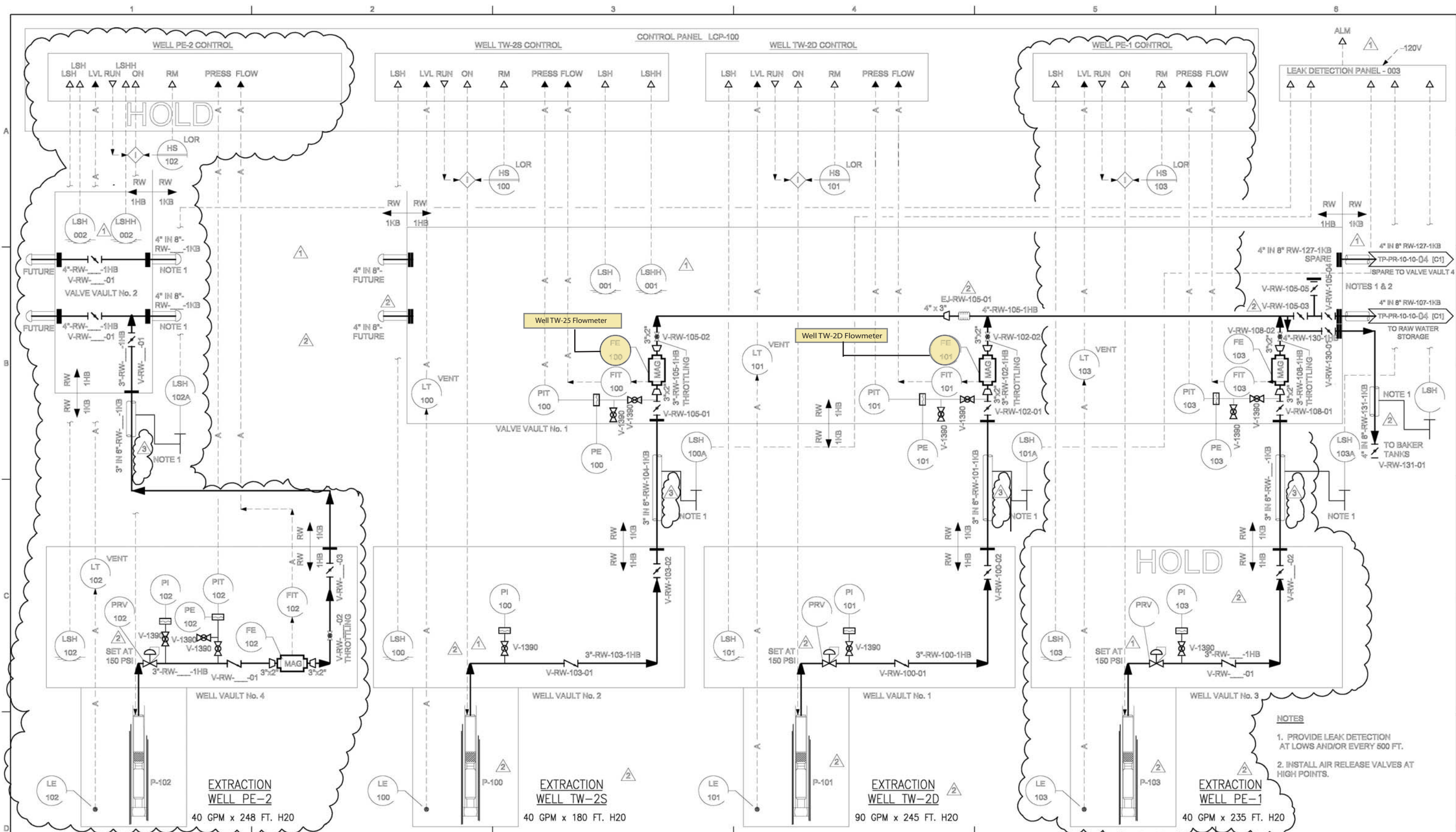
## Figures

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





NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 3	DATE 03/16/05	PRINT DISTRIBUTION	STATUS	REV	DATE	SDE	PEM
0	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE	ISSUED			
0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL		ELECTRICAL		STATUS	PRELIMINARY			
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL		INST & CONTROL		REV.	FOR REVIEW AND APPROVAL	D	07/28/04	
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL		ARCHITECTURAL		CLIENT	APPROVED FOR CONSTRUCTION	0	09/03/04	KLM TP
3	03/16/05	DELETED NOTES, APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS		ENVIRONMENTAL		FIELD	REVISED & APPROVED FOR CONSTRUCTION	3	03/16/05	
					PIPING		GEN. ARRANG.		INTRA CO.				

SCALE NONE

PACIFIC GAS & ELECTRIC CO.  
TOPOCK COMPRESSOR STATION  
INTERIM MEASURE 3  
EXPANDED GROUNDWATER EXTRACTION  
AND TREATMENT SYSTEM

PROJ NO. 315994

**CH2MHILL**

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

DWG. NO. TP-PR-10-10-03 REV. 3

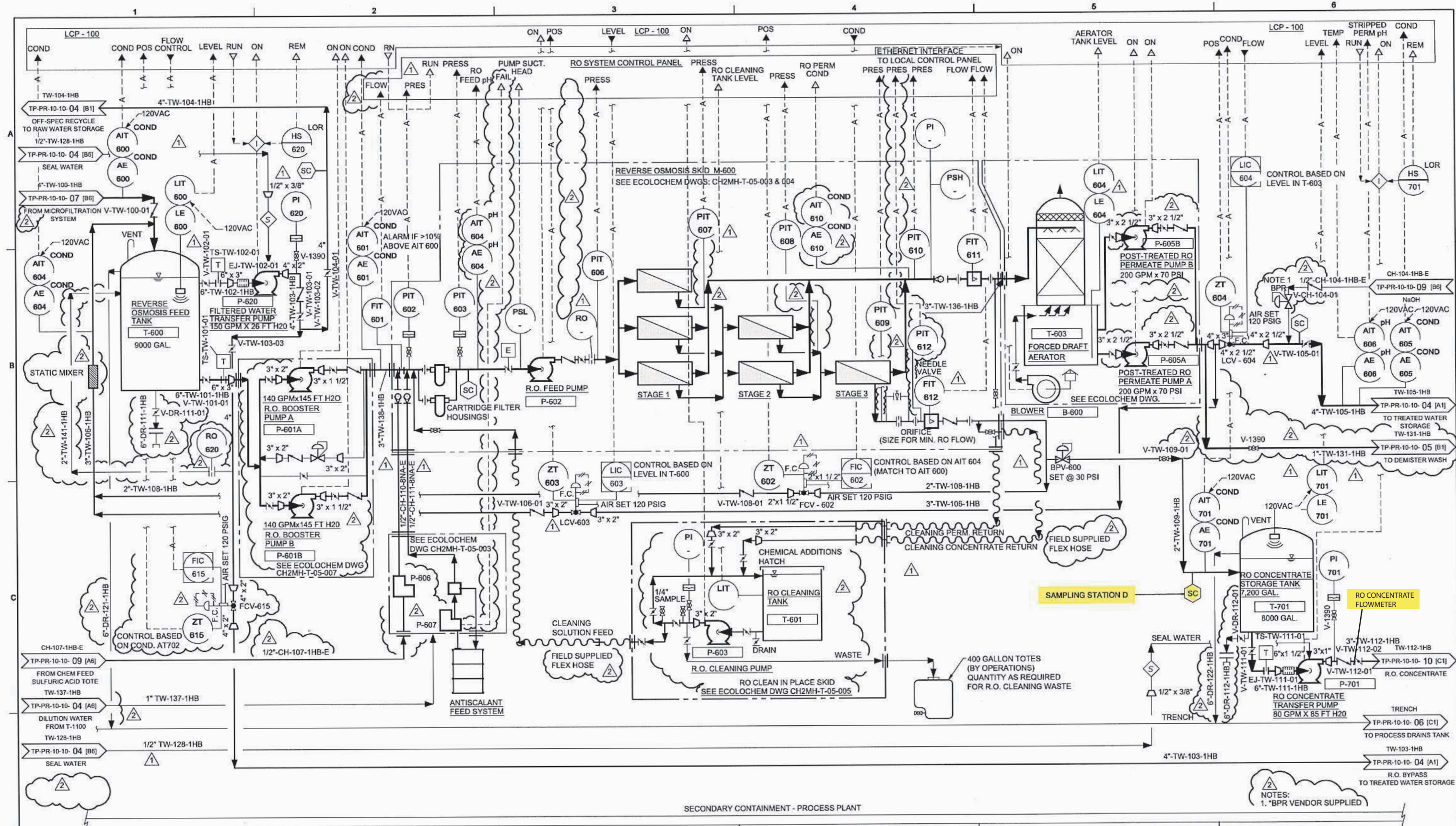












NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 2	DATE 01/23/05	PRINT DISTRIBUTION	STATUS				
									ISSUED	REV	DATE	SDE	PEM
0	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE				
0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL		ELECTRICAL		STATUS				
1	10/13/04	REVISED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

RESPONSIBLE ENGINEER: Kenneth L. Martins PE # CH4876 Exp 6-30-05	PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 EXPANDED GROUNDWATER EXTRACTION AND TREATMENT SYSTEM PROJ NO. 315994		PROCESS AND INSTRUMENTATION DIAGRAM SHEET 08 REVERSE OSMOSIS SYSTEM	
	SCALE NONE		DWG. NO. TP-PR-10-10-08 REV. 2	
	CH2MHILL		FILENAME: tpr101008.dwg PLOT DATE: 23-JAN-2005 PLOT TIME:	





## **Appendix A**

### **Laboratory Analytical Reports**

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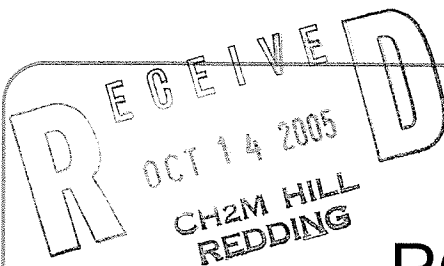
# TRUESDAIL LABORATORIES, INC.

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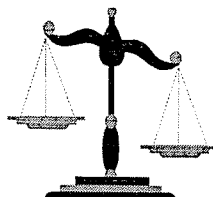
14201 FRANKLIN AVENUE  
TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
[www.truesdail.com](http://www.truesdail.com)



## CH2M HILL PG&E Topock Project

**Laboratory Number: 947492**  
**Received: October 5, 2005**

**IM3Plant-WDR-015**  
**Project No.: 334168.IM.04.00**  
**P.O. No.: 911248**



Prepared for:

**CH2M HILL**  
**Attn: Mark Cichy**  
**2525 Airpark Dr.**  
**Redding, CA 96001**

Prepared by:

**TRUESDAIL LABORATORIES, INC.**  
**TUSTIN, CALIFORNIA**

**Table of Contents**  
**TLI Laboratory Data Package**  
**For Laboratory Number: 947492**

<u>ITEM</u>	<u>Section</u>
Case Narrative	1.0
Summary Table of Final Results	2.0
Final Reports	3.0
Wet Chem Analysis/ Raw Data, Standard, Quality Control and Chain of Custody Records	4.0
Established Retention Time Window and Analytical Raw Data	5.0

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## Section 1.0

# Case Narrative

# TRUESDAIL LABORATORIES, INC.

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October 11, 2005

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

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM#3 PLANT -WDR-0015 PROJECT, GROUNDWATER  
MONITORING,  
TLI NO.: 947492

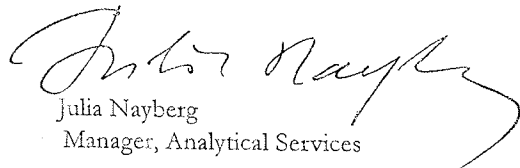
Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM#3 Plant-WDR-015 project groundwater monitoring. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on October 5, 2005, 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.

  
Julia Nayberg  
Manager, Analytical Services



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

CC: Mr. Mark Cichy, CH2M HILL Redding CA

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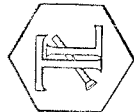
## Section 2.0

# Summary Table of Final Results



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

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.: 947492

Date Received: October 5, 2005

## Analytical Results Summary

Lab I.D.	Sample I.D.	Sample Time	SW 6020 Chromium Total mg/L	SW 7199 Chromium Hexavalent mg/L	EPA 180.1 Turbidity NTU	EPA 150.1 pH	EPA 120.1 EC $\mu$ mhos/cm	EPA 160.1 TDS mg/L
947492-1	SC-100B-WDR-015	09:20	3.79	3.96	ND	7.35	9020	6040
947492-2	SC-700B-WDR-015	09:29	ND	0.00029	ND	7.84	6350	4170
947492-3	SC-701-WDR-015	09:15	ND	ND	---	7.78	39900	24700

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.

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

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## 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.: 334188.IM.04.00  
P.O. No.: 911248

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

Laboratory No.: 947492

Date: October 10, 2005  
Collected: October 5, 2005  
Received: October 5, 2005  
Prep/ Analyzed: October 6, 2005  
Analytical Batch: 10CrH05C

Investigation:

Hexavalent Chromium by SW 7199

**Analytical Results Hexavalent Chromium**

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
947492-1	SC-100B-WDR-015	09:20	05:42	mg/L	200	0.0400	3.96
947492-2	SC-700B-WDR-015	09:29	07:20	mg/L	1.05	0.00020	0.00029
947492-3	SC-701-WDR-015	09:15	06:53	mg/L	10.0	0.0020	ND

**QA/QC Summary**

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	947492-1	3.96	4.05	2.25%	≤ 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	947492-1	3.96	200	0.0200	4.00	8.16	7.96	105%	75-125%	Yes
MS	947492-2	0.00029	1.06	0.00100	0.00106	0.00135	0.00135	100%	75-125%	Yes
MS	947492-3	0.00	10.0	0.00100	0.0100	0.0120	0.0100	120%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCGS	0.00498	0.00500	99.6%	90% - 110%	Yes
MRCVS#1	0.0103	0.0100	103%	90% - 110%	Yes
MRCVS#2	0.0102	0.0100	102%	90% - 110%	Yes
MRCVS#3	0.0101	0.0100	101%	90% - 110%	Yes
MRCVS#4	0.0100	0.0100	100%	90% - 110%	Yes
MRCVS#5	0.00997	0.0100	99.7%	90% - 110%	Yes
MRCVS#6	0.00991	0.0100	99.1%	90% - 110%	Yes
LCS	0.00495	0.00500	99.0%	90% - 110%	Yes

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

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

*Julia Nayberg*  
Julia Nayberg, Manager  
Analytical Services

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

*revised*

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

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

## REPORT

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

Attention: Shawn Duffy

Laboratory No.: 947492

Sample: Three (3) Groundwater Samples  
Project Name: PG&E Topock Project  
Project No.: 334168.IM.04.00  
P.O. No.: 911248  
Prep. Batch: 100605A

Date: October 10, 2005  
Collected: October 5, 2005  
Received: October 5, 2005  
Prep/ Analyzed: October 6, 2005  
Analytical Batch: 100605A

Investigation: Total Chromium by Inductively Coupled Argon Plasma  
Using Method SW 6010B

### Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
947492-2	SC-700B-WDR-015	mg/L	SW 6010B	13:31	1.04	0.0010	ND ✓
947492-3	SC-701-WDR-015	mg/L	SW 6010B	13:35	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	947435-2	0.0047	0.0044	6.59% ✓	≤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	947492-2	0.00	1.04	0.0100	0.0104	0.00884	0.0104	85.0% ✓	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0101	0.0100	101%	90% - 110%	Yes
MRCVS#1	0.00925	0.0100	92.5%	90% - 110%	Yes
MRCVS#2	0.00909	0.0100	90.9%	90% - 110%	Yes
ICS	0.00899	0.0100	89.9%	80% - 120%	Yes
LCS	0.0103	0.0100	103%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

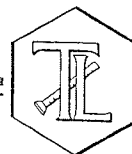
Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

Julia Nayberg, Manager  
Analytical Services

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# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

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

## REPORT

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

Attention: Shawn Duffy

Laboratory No.: 947492

Sample: Three (3) Groundwater Samples  
Project Name: PG&E Topock Project  
Project No.: 334168.IM.04.00  
P.O. No.: 911248  
Prep. Batch: 100805A

Date: October 10, 2005  
Collected: October 5, 2005  
Received: October 5, 2005  
Prep/ Analyzed: October 8, 2005  
Analytical Batch: 100805A

Investigation: Total Chromium by Inductively Coupled Argon Plasma  
Using Method SW 6010B

### Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
947492-1	SC-100B-WDR-015	mg/L	SW 6010B	10:30	1.04	0.0104	3.79

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	947490	0.732	0.725	0.96%	≤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	947490	0.732	1.04	2.50	2.60	3.28	3.33	98.0%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.95	5.00	99.0%	90% - 110%	Yes
MRCVS#1	4.88	5.00	97.6%	90% - 110%	Yes
MRCVS#2	4.95	5.00	99.0%	90% - 110%	Yes
ICS	2.05	2.00	103%	80% - 120%	Yes
LCS	5.17	5.00	103%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

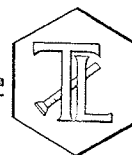
Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Julia Nayberg, Manager  
Analytical Services

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INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

## REPORT

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155 Grand Ave. Suite 1000  
Oakland, CA 94612

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

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.: 947492  
Date: October 10, 2005  
Collected: October 5, 2005  
Received: October 5, 2005  
Prep/ Analyzed: October 6, 2005  
Analytical Batch: 10TUC05D

Investigation:

Turbidity by Method EPA 180.1

### Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
947492-1	SC-100B-WDR-015	09:20	NTU	1.00	0.100	ND ✓
947492-2	SC-700B-WDR-015	09:29	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	947409-6	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.61	8.00	95.1%	90% - 110%	Yes
LCS	7.70	8.00	96.3%	90% - 110%	Yes
LCS	7.75	8.00	96.9%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Julia Nayberg, Manager  
Analytical Services

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Established 1931

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155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

## REPORT

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

**Laboratory No.:** 947492

**Date:** October 10, 2005

**Collected:** October 5, 2005

**Received:** October 5, 2005

**Prep/ Analyzed:** October 6, 2005

**Analytical Batch:** 10PH05F

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

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Investigation:**

pH by EPA 150.1

### Analytical Results pH

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>MDL</u>	<u>RL</u>	<u>Results</u>
947492-1	SC-100B-WDR-015	09:20	10:22	pH Units	0.0140	0.100	7.35 ✓
947492-2	SC-700B-WDR-015	09:29	10:28	pH Units	0.0140	0.100	7.84 ✓
947492-3	SC-701-WDR-015	09:15	10:33	pH Units	0.0140	0.100	7.78 ✓

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	947490	7.46	7.46	0.0000	+ 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.01	7.00	0.010	+ 0.100 Units	Yes
LCS #1	7.02	7.00	0.020	+ 0.100 Units	Yes
LCS #2	7.00	7.00	0.00	+ 0.100 Units	Yes

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Julia Nayberg, Manager  
Analytical Services

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Oakland, CA 94612

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

**Attention:** Shawn Duffy

**Laboratory No.:** 947492

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

**Date:** October 10, 2005  
**Collected:** October 5, 2005  
**Received:** October 5, 2005  
**Prep/ Analyzed:** October 6, 2005  
**Analytical Batch:** 10EC05E

**Investigation:**

**Specific Conductivity by EPA 120.1**

### Analytical Results Specific Conductivity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
947492-1	SC-100B-WDR-015	µmhos/cm	EPA 120.1	1.00	2.00	9020 ✓
947492-2	SC-700B-WDR-015	µmhos/cm	EPA 120.1	1.00	2.00	6350 ✓
947492-3	SC-701-WDR-015	µmhos/cm	EPA 120.1	10.0	20.0	39900 ✓

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	947491-1	12000	12100	0.83%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	688	706	97.5%	90% - 110%	Yes
CVS#1	942	996	94.6%	90% - 110%	Yes
CVS#2	940	996	94.4%	90% - 110%	Yes
LCS	697	706	98.7%	90% - 110%	Yes
LCSD	698	706	98.9%	90% - 110%	Yes

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

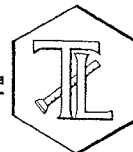
  
Julia Nayberg, Manager  
Analytical Services

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155 Grand Ave. Suite 1000  
Oakland, CA 94612

Attention: Shawn Duffy

## REPORT

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

Laboratory No.: 947492

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

Date: October 10, 2005  
Collected: October 5, 2005  
Received: October 5, 2005  
Prep/ Analyzed: October 6, 2005  
Analytical Batch: 10TDS05CC

Investigation: Total Dissolved Solids by EPA 160.1

### Analytical Results Total Dissolved Solids

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>RL</u>	<u>Results</u>
947492-1	SC-100B-WDR-015	mg/L	EPA 160.1	250	6040 ✓
947492-2	SC-700B-WDR-015	mg/L	EPA 160.1	125	4170 ✓
947492-3	SC-701-WDR-015	mg/L	EPA 160.1	625	24700 ✓

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	947492-2	4170	4200	0.36% ✓	≤ 5%	Yes

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

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

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Julia Nayberg, Manager  
Analytical Services

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

[IM3Plant-WDR-015]

COC Number

TURNAROUND TIME 5 Days

DATE

PAGE 1 OF 1

COMPANY CH2M HILL  
PROJECT NAME PG&E Topock  
PHONE (510) 251-2888 FAX (510) 622-7086  
ADDRESS 155 Grand Ave Ste 1000  
Oakland, CA 94612  
P.O. NUMBER 334168 IM.04.00  
SAMPLERS (SIGNATURE) *Brian Decker*

SAMPLE I.D.	DATE	TIME	DESCRIPTION	CR6 (7199) Lab Filtered					TDS (160.1)	Turbidity (180.1)	COMMENTS
				Total Met (6010B)	Specific Conductance (120.1)	pH (150.1)	PH (150.1)	PH (150.1)			
SC-100B-WDR-015	10-5-05	0920	Groundwater	x	x	x	x	x	x	x	4 pH=2
SC-700B-WDR-015	10-5-05	925	Groundwater	x	x	x	x	x	x	x	4 pH=2
SC-701-WDR-015	10-5-05	915	Groundwater	x	x	x	x	x	x	x	3 pH=2
								TOTAL NUMBER OF CONTAINERS			
								11			

Rec'd 10/05/05  
SLA 947492

For Sample Conditions  
See Form Attached

**PUSH ALERT!!**  
Level III QC

## CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	<i>Brian Decker</i>	Printed Name	Brian Decker	Company/Agency	DMT	Date/Time	10-5-05 14:06
Signature (Received)	<i>John P. Brooks</i>	Printed Name	John P. Brooks	Company/Agency	Executive Courier	Date/Time	10/5/05 14:06
Signature (Relinquished)	<i>John P. Brooks</i>	Printed Name	John P. Brooks	Company/Agency	Executive Courier	Date/Time	10/5/05 14:06
Signature (Received)	<i>John P. Brooks</i>	Printed Name	John P. Brooks	Company/Agency	Executive Courier	Date/Time	10/5/05 14:06
Signature (Relinquished)	<i>John P. Brooks</i>	Printed Name	John P. Brooks	Company/Agency	Executive Courier	Date/Time	10/5/05 14:06
Signature (Received)	<i>John P. Brooks</i>	Printed Name	John P. Brooks	Company/Agency	Executive Courier	Date/Time	10/5/05 14:06
Signature (Relinquished)	<i>John P. Brooks</i>	Printed Name	John P. Brooks	Company/Agency	Executive Courier	Date/Time	10/5/05 14:06
Signature (Received)	<i>John P. Brooks</i>	Printed Name	John P. Brooks	Company/Agency	Executive Courier	Date/Time	10/5/05 14:06

## SAMPLE CONDITIONS

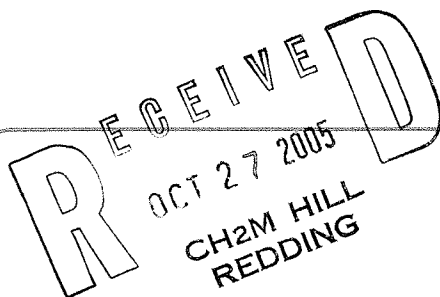
RECEIVED COOL ☐ WARM ☐

CUSTODY SEALED YES ☐ NO ☐

## SPECIAL REQUIREMENTS:



14201 FRANKLIN AVENUE  
TUSTIN, CALIFORNIA 92780-7008  
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[www.truesdail.com](http://www.truesdail.com)



## CH2M HILL PG&E Topock Project

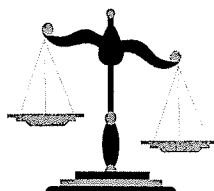
**Laboratory Number: 947743**

**Received: October 12, 2005**

**IM3 Plant-WDR-016**

**Project No.: 334168.IM.04.00**

**P.O. No.: 911248**



Prepared for:

**CH2M HILL  
Attn: Mark Cichy  
2525 Airpark Dr.  
Redding, CA 96001**

Prepared by:

**TRUESDAIL LABORATORIES, INC.  
TUSTIN, CALIFORNIA**

---

# **Table of Contents**

## **TLI Laboratory Data Package**

### **For Laboratory Number: 947743**

<u>ITEM</u>	<u>Section</u>
Case Narrative	1.0
Summary Table of Final Results	2.0
Final Reports	3.0
Wet Chem Analysis/ Raw Data, Standard, Quality Control and Chain of Custody Records	4.0
Established Retention Time Window and Analytical Raw Data	5.0

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## Section 1.0

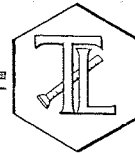
# Case Narrative

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# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

October 26, 2005

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

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3 PLANT -WDR-0016 PROJECT, GROUNDWATER  
MONITORING,  
TLI No.: 947743

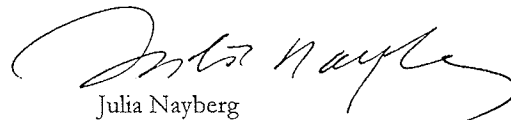
Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-016 project groundwater monitoring. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on October 12, 2005, 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.

  
Julia Nayberg  
Manager, Analytical Services

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

## Section 2.0

# Summary Table of Final Results

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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

**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.:** 947743

**Date Received:** October 12, 2005

## Analytical Results Summary

Lab I.D.	Sample I.D.	Sample Time	EPA 120.1 EC	EPA 350.2 Ammonia	EPA 160.1 TDS	EPA 150.1 pH	EPA 300 Fluoride	SW 7199 Hexavalent Chromium
			$\mu\text{mhos/cm}$	mg/L	mg/L	Units	mg/L	mg/L
947743-1	SC-100B-WDR-016	10:11	9200	1.43	5950	7.60	2.91	3.60
947743-2	SC-700B-WDR-016	09:52	6080	2.83	3760	7.97	1.84	ND
947743-3	SC-701-WDR-016	10:28	39800	---	24100	7.97	11.8	ND

Lab I.D.	Sample I.D.	Sample Time	EPA 180.1 Turbidity	EPA 300.0 Sulfate	EPA 300.0 Nitrate as N	EPA 354.1 Nitrite as N
			NTU	mg/L	mg/L	mg/L
947743-1	SC-100B-WDR-016	10:11	ND	727	4.90	0.0089
947743-2	SC-700B-WDR-016	09:52	ND	448	3.58	0.0059

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

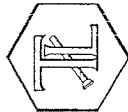
Note: The following "Significant Figures" rule has been applied to all results:  
 Results below 0.01ppm will have two (2) significant figures.  
 Result above or equal to 0.01ppm will have three (3) significant figures.  
 Quality Control data will always have three (3) significant figures.

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

**Laboratory No.:** 947743  
**Date Received:** October 12, 2005

**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 120.1 EC µmhos/cm	EPA 350.2 Ammonia mg/L	EPA 160.1 TDS mg/L	EPA 150.1 pH	EPA 300 Fluoride mg/L	EPA 180.1 Turbidity NTU
947743-1	SC-100B-WDR-016	10:11	9200 ✓	1.43	5950 ✓	7.60 ✓	2.91	ND ✓
947743-2	SC-700B-WDR-016	09:52	6080 ✓	2.83	3760 ✓	7.97 ✓	1.84	ND ✓
947743-3	SC-701-WDR-016	10:28	39800 ✓	---	24100 ✓	7.97 ✓	11.8	---

Lab I.D.	Sample I.D.	Sample Time	EPA 300.0 Sulfate mg/L	EPA 300.0 Nitrate as N mg/L	EPA 354.1 Nitrite as N mg/L
947743-1	SC-100B-WDR-016	10:11	727	4.90	ND
947743-2	SC-700B-WDR-016	09:52	448	3.58	ND

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

**Note:** The following "Significant Figures" rule has been applied to all 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.:** 326128.01.05.CW

**P.O. No.:** 801799

**Laboratory No.:** 947743

**Date Received:** October 12, 2005

## Analytical Results Summary

### METALS ANALYSIS

Lab ID	Sample ID	Time Coll.	Aluminum EPA 6010B 10/20/05 mg/L	Antimony EPA 6020 10/19/05 mg/L	Arsenic EPA 6020 10/20/05 mg/L	Barium EPA 6010B 10/19/05 mg/L	Beryllium EPA 6020 10/20/05 mg/L	Cadmium EPA 6020 10/19/05 mg/L	Chromium EPA 6010B 10/19/05 mg/L	Cobalt EPA 6020 10/19/05 mg/L	Copper EPA 6020 10/19/05 mg/L	Lead EPA 6020 10/19/05 mg/L
947743-1	SC-100B-WDR-016	10:11	ND	ND	ND	ND	---	---	4.24	---	ND	ND
947743-2	SC-700B-WDR-016	09:52	ND	ND	ND	ND	---	---	ND	---	ND	ND
947743-3	SC-701-WDR-016	10:28	---	ND	ND	ND	ND	ND	ND	ND	0.0125	ND

Lab ID	Sample ID	Time Coll.	Boron EPA 6020 10/20/05 mg/L	Manganese EPA 6010B 10/20/05 mg/L	Mercury EPA 7470A 10/14/05 mg/L	Molybdenum EPA 6020 10/19/05 mg/L	Nickel EPA 6010B 10/19/05 mg/L	Selenium EPA 6020 10/20/05 mg/L	Silver EPA 6020 10/19/05 mg/L	Thallium EPA 6020 10/19/05 mg/L	Vanadium EPA 6020 10/20/05 mg/L	Zinc EPA 6010B 10/19/05 mg/L	Iron EPA 6010B 10/20/05 mg/L
947743-1	SC-100B-WDR-016	10:11	1.59	ND	---	0.0247	ND	---	---	---	---	0.0224	ND
947743-2	SC-700B-WDR-016	09:52	1.32	ND	---	0.0105	ND	---	---	---	---	0.0205	ND
947743-3	SC-701-WDR-016	10:28	---	---	ND	0.0670	ND	ND	ND	ND	1.15	0.0252	---

### NOTES:

ND: Not detected, or below limit of detection

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## Section 3.0

# Final Reports

---

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

## 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

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

Laboratory No.: 947743

Date: October 19, 2005

Collected: October 12, 2005

Received: October 12, 2005

Prep/ Analyzed: October 13, 2005

Analytical Batch: 10AN05K

Investigation:

Sulfate by Method EPA 300.0

### Analytical Results Sulfate

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
947743-1	SC-100B-WDR-016	10:11	10:13	mg/L	100	50.0	727
947743-2	SC-700B-WDR-016	09:52	11:36	mg/L	25.0	12.5	448

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	947743-1	727	719	1.11%	≤ 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	947743-1	727	100	10.0	1000	1740	1730	101%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	20.0	20.0	100%	90% - 110%	Yes
MRCVS#1	15.3	15.0	102%	90% - 110%	Yes
MRCVS#2	15.4	15.0	103%	90% - 110%	Yes
MRCVS#3	15.4	15.0	103%	90% - 110%	Yes
MRCVS#4	15.5	15.0	103%	90% - 110%	Yes
LCS	20.1	20.0	101%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

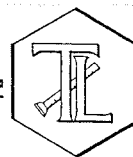
Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Julia Nayberg, 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

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TUSTIN, CALIFORNIA 92780-7008  
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www.truesdail.com

Laboratory No.: 947743

Date: October 19, 2005

Collected: October 12, 2005

Received: October 12, 2005

Prep/ Analyzed: October 13, 2005

Analytical Batch: 10AN05K

Investigation: Nitrate as N by Ion Chromatography using EPA 300.0

### Analytical Results Nitrate as N

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
947743-1	SC-100B-WDR-016	10:11	09:22	mg/L	1.00	0.200	4.90
947743-2	SC-700B-WDR-016	09:52	09:32	mg/L	1.00	0.200	3.58

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	947741-4	20.0	19.9	0.50%	≤ 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	947741-4	20.0	10.0	3.00	30.0	50.6	50.0	102%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	3.96	4.00	99.0%	90% - 110%	Yes
MRCVS#1	2.96	3.00	98.7%	90% - 110%	Yes
MRCVS#2	2.94	3.00	98.0%	90% - 110%	Yes
MRCVS#3	2.97	3.00	99.0%	90% - 110%	Yes
LCS	3.96	4.00	99.0%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

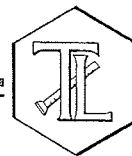
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Julia Nayberg, Manager  
Analytical Services

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Established 1931

**Client:** CH2M HILL  
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## REPORT

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

**Attention:** Shawn Duffy

**Laboratory No.:** 947743

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

**Date:** October 19, 2005  
**Collected:** October 12, 2005  
**Received:** October 12, 2005  
**Prep/ Analyzed:** October 13, 2005  
**Analytical Batch:** 10EC05L

**Investigation:**

**Specific Conductivity by EPA 120.1**

### Analytical Results Specific Conductivity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>MDL</u>	<u>RL</u>	<u>Results</u>
947743-1	SC-100B-WDR-016	µmhos/cm	EPA 120.1	0.143	2.00	9200
947743-2	SC-700B-WDR-016	µmhos/cm	EPA 120.1	0.143	2.00	6080
947743-3	SC-701-WDR-016	µmhos/cm	EPA 120.1	0.143	20.0	39800

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	947778-1	596	598	0.34%	≤ 10%	Yes

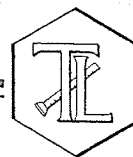
QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	695	706	98.4%	90% - 110%	Yes
CVS#1	940	996	94.4%	90% - 110%	Yes
LCS	699	706	99.0%	90% - 110%	Yes
LCSD	701	706	99.3%	90% - 110%	Yes

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

  
Julia Nayberg, Manager  
Analytical Services

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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.: 947743

Date: October 19, 2005

Collected: October 12, 2005

Received: October 12, 2005

Prep/ Analyzed: October 14, 2005

Analytical Batch: 10NO205H

Investigation:

Nitrite as N by Method EPA 354.1

### Analytical Results for Nitrite as N

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
947743-1	SC-100B-WDR-016	10:11	12:59	mg/L	1.00	0.0050	0.0089
947743-2	SC-700B-WDR-016	09:52	13:00	mg/L	1.00	0.0050	0.0059

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	947743-2	0.0059	0.0062	5.0%	≤ 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	947743-2	0.0059	1.00	0.100	0.100	0.109	0.106	103%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.105	0.100	105%	90% - 110%	Yes
MRCVS#1	0.0999	0.100	99.9%	90% - 110%	Yes
LCS	0.212	0.200	106%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

Julia Nayberg, Manager  
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Project No.: 334168.IM.04.00  
P.O. No.: 911248

Date: October 19, 2005  
Collected: October 12, 2005  
Received: October 12, 2005  
Prep/ Analyzed: October 13, 2005  
Analytical Batch: 10PH05N

Investigation:

pH by EPA 150.1

### Analytical Results pH

TLI I.D.	Field I.D.	Run Time	Units	MDL	RL	Results
947743-1	SC-100B-WDR-016	07:20	pH Units	0.0140	0.100	7.60
947743-2	SC-700B-WDR-016	07:25	pH Units	0.0140	0.100	7.97
947743-3	SC-701-WDR-016	07:30	pH Units	0.0140	0.100	7.97

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	946594	8.94	8.92	0.02	+ 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	7.00	7.00	0.00	+ 0.100 Units	Yes

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

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Julia Nayberg, Manager  
Analytical Services



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## REPORT

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Attention: Shawn Duffy

Laboratory No.: 947743

Sample: Three (3) Groundwater Samples

Date: October 19, 2005

Project Name: PG&E Topock Project

Collected: October 12, 2005

Project No.: 334168.IM.04.00

Received: October 12, 2005

P.O. No.: 911248

Prep/ Analyzed: October 13, 2005

Analytical Batch: 10TDS05GG

Investigation:

Total Dissolved Solids by EPA 160.1

### Analytical Results Total Dissolved Solids

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>RL</u>	<u>Results</u>
947743-1	SC-100B-WDR-016	mg/L	EPA 160.1	250	5950
947743-2	SC-700B-WDR-016	mg/L	EPA 160.1	125	3760
947743-3	SC-701-WDR-016	mg/L	EPA 160.1	625	24100

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	947743-2	3760	3780	0.27%	≤ 5%	Yes

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

ND: Below the reporting limit (Not Detected).

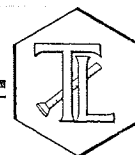
RL: Reporting Limit.

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

Date: October 19, 2005  
Collected: October 12, 2005  
Received: October 12, 2005  
Prep/ Analyzed: October 13, 2005  
Analytical Batch: 10TUC05K

Investigation:

Turbidity by Method EPA 180.1

### Analytical Results Turbidity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u> ✓
947743-1	SC-100B-WDR-016	10:11	NTU	1.00	0.100	ND
947743-2	SC-700B-WDR-005	09:52	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	947731-77	0.102	0.094	8.2%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.50	8.00	93.8%	90% - 110%	Yes
LCS	7.55	8.00	94.4%	90% - 110%	Yes
LCS	7.50	8.00	93.8%	90% - 110%	Yes

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

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

  
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Laboratory No.: 947743

Date: October 19, 2005

Collected: October 12, 2005

Received: October 12, 2005

Prep/ Analyzed: October 14, 2005

Analytical Batch: 10NH305C

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
947743-1	SC-100B-WDR-016	10:11	EPA 350.2	mg/L	1.00	0.500	1.43
947743-2	SC-700B-WDR-016	09:52	EPA 350.2	mg/L	1.00	0.500	2.83

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	947743-1	1.43	1.32	8.0%	≤ 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	947743-2	2.83	1.00	10.0	10.0	10.8	12.8	79.7%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	9.72	10.0	97.2%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

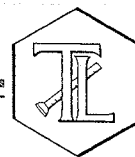
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Date: October 19, 2005

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Collected: October 12, 2005

Project No.: 334168.IM.04.00

Received: October 12, 2005

P.O. No.: 911248

Prep/ Analyzed: October 13, 2005

Prep. Batch: 10CrH05J

Analytical Batch: 10CrH05J

Investigation:

Hexavalent Chromium by IC Using Method SW 7199.

### Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
947743-1	SC-100B-WDR-016	10:11	05:51	mg/L	200	0.0400	3.60
947743-2	SC-700B-WDR-016	09:52	04:38	mg/L	1.05	0.00020	ND
947743-3	SC-701-WDR-016	10:28	08:36	mg/L	10.0	0.0020	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	947741-4	0.0050	0.0051	1.98%	< 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	947743-1	3.60	200	0.0200	4.00	7.78	7.60	105%	75-125%	Yes
MS	947743-2	0.00	1.06	0.00100	0.00106	0.00119	0.00106	112%	75-125%	Yes
MS	947743-3	0.00	10.0	0.00100	0.0100	0.0105	0.0100	105%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00490	0.00500	98.0%	90% - 110%	Yes
MRCVS#1	0.00998	0.0100	100%	90% - 110%	Yes
MRCVS#2	0.00987	0.0100	98.7%	90% - 110%	Yes
MRCVS#3	0.00986	0.0100	98.6%	90% - 110%	Yes
MRCVS#4	0.00981	0.0100	98.1%	90% - 110%	Yes
MRCVS#5	0.00982	0.0100	98.2%	90% - 110%	Yes
LCS	0.00483	0.00500	96.6%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

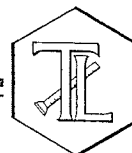
Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Julia Nayberg, Manager  
Analytical Services

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# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

## REPORT

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

P.O. No.: 911248

Laboratory No.: 947743

Date: October 19, 2005

Collected: October 12, 2005

Received: October 12, 2005

Prep/ Analyzed: October 13, 2005

Analytical Batch: 10AN05K

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
947743-1	SC-100B-WDR-016	10:11	9:22	mg/L	1.00	0.200	2.91
947743-2	SC-700B-WDR-016	09:52	9:32	mg/L	1.00	0.200	1.84
947743-3	SC-701-WDR-016	10:28	11:25	mg/L	5.00	1.00	11.8

### QA/QC Summary

QC STD I.D.		Laboratory Number		Concentration		Duplicate Concentration		Relative Percent Difference		Acceptance limits		QC Within Control	
Duplicate		947743-2		1.84		1.88		2.15%		≤ 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	947743-2	1.84	1.00	2.00	2.00	3.77	3.84	96.5%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.06	4.00	102%	90% - 110%	Yes
MRCVS#1	3.08	3.00	103%	90% - 110%	Yes
MRCVS#2	3.09	3.00	103%	90% - 110%	Yes
LCS	4.05	4.00	101%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

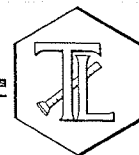
DF: Dilution Factor.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Julia Nayberg, 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.: 326128.01.05.CW

P.O. No.: 801799

Investigation: California Title 22, Section 26 Metals

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

Laboratory No.: 947743

Date: October 24, 2005

Collected: October 12, 2005

Received: October 12, 2005

Analyzed: October 20, 2005

## Analytical Results

SAMPLE ID: SC-100B-WDR-016		Time Collected: 10:11		LAB ID: 947743-1				
Parameter	Method	Reported		Units	RL	Batch	Date	Time
		Value	DF				Analyzed	Analyzed
Aluminum	EPA 6010B	ND	1.04	mg/L	0.0520	102005A	10/20/05	10:19
Antimony	EPA 6020	ND	2.08	mg/L	0.0030	101905A	10/19/05	14:45
Arsenic	EPA 6020	ND	2.08	mg/L	0.0050	102005A	10/20/05	13:59
Barium	EPA 6010B	ND	1.04	mg/L	0.300	101905A	10/19/05	12:43
Chromium	EPA 6010B	4.24	1.04	mg/L	0.0104	101905A	10/19/05	12:47
Copper	EPA 6020	ND	2.08	mg/L	0.0100	101905A	10/19/05	14:45
Lead	EPA 6020	ND	2.08	mg/L	0.0021	101905A	10/19/05	14:45
Manganese	EPA 6010B	ND	1.04	mg/L	0.500	102005A	10/20/05	10:19
Molybdenum	EPA 6020	0.0247	2.08	mg/L	0.0050	101905A	10/19/05	14:45
Nickel	EPA 6010B	ND	1.04	mg/L	0.0200	101905A	10/19/05	12:43
Zinc	EPA 6010B	0.0224	1.04	mg/L	0.0200	101905A	10/19/05	12:43
Boron	EPA 6010B	1.59	1.04	mg/L	0.200	102005A	10/20/05	10:19
Iron	EPA 6010B	ND	1.04	mg/L	0.300	102005A	10/20/05	10:19

SAMPLE ID: SC-700B-WDR-016		Time Collected: 09:52		LAB ID: 947743-2				
Parameter	Method	Reported		Units	RL	Batch	Date	Time
		Value	DF				Analyzed	Analyzed
Aluminum	EPA 6010B	ND	1.04	mg/L	0.0520	102005A	10/20/05	10:23
Antimony	EPA 6020	ND	2.08	mg/L	0.0030	101905A	10/19/05	14:39
Arsenic	EPA 6020	ND	2.08	mg/L	0.0050	102005a	10/20/05	14:02
Barium	EPA 6010B	ND	1.04	mg/L	0.300	101905A	10/19/05	12:47
Chromium	EPA 6010B	ND	1.04	mg/L	0.0010	101805B	10/18/05	16:51
Copper	EPA 6020	ND	2.08	mg/L	0.0100	101905A	10/19/05	14:39
Lead	EPA 6020	ND	2.08	mg/L	0.0021	101905A	10/19/05	14:39
Manganese	EPA 6010B	ND	1.04	mg/L	0.500	102005A	10/20/05	10:23
Molybdenum	EPA 6020	0.0105	2.08	mg/L	0.0050	101905A	10/19/05	14:39
Nickel	EPA 6010B	ND	1.04	mg/L	0.0200	101905A	10/19/05	12:47
Zinc	EPA 6010B	0.0205	1.04	mg/L	0.0200	101905A	10/19/05	12:47
Boron	EPA 6010B	1.32	1.04	mg/L	0.200	102005A	10/20/05	10:23
Iron	EPA 6010B	ND	1.04	mg/L	0.300	102005A	10/20/05	10:23

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## REPORT

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SAMPLE ID: SC-701-WDR-016		Time Collected: 10:28		LAB ID: 947743-3				
Parameter	Method	Reported		Units	RL	Batch	Date	Time
		Value	DF				Analyzed	Analyzed
Antimony	EPA 6020	ND	10.4	mg/L	0.0104	101905A	10/19/05	15:37
Arsenic	EPA 6020	ND	10.4	mg/L	0.0104	102005A	10/20/05	14:16
Barium	EPA 6010B ✓	ND ✓	1.04	mg/L	0.300	101905A	10/19/05	12:51
Beryllium	EPA 6020	ND	10.4	mg/L	0.0104	102005A	10/20/05	14:16
Cadmium	EPA 6020	ND	10.4	mg/L	0.0104	101905A	10/19/05	15:37
Chromium	EPA 6010B ✓	ND ✓	1.04	mg/L	0.0010	101805B	10/18/05	17:04
Cobalt	EPA 6020	ND	10.4	mg/L	0.0104	101905A	10/19/05	15:37
Copper	EPA 6020	0.0125	10.4	mg/L	0.0104	101905A	10/19/05	15:37
Lead	EPA 6020	ND	10.4	mg/L	0.0104	101905A	10/19/05	15:37
Mercury	EPA 7470A	ND	1.00	mg/L	0.00020	101405A	10/14/05	NA
Molybdenum	EPA 6020	0.0670	10.4	mg/L	0.0104	101905A	10/19/05	15:37
Nickel	EPA 6010B ✓	ND ✓	1.04	mg/L	0.0200	101905A	10/19/05	12:51
Selenium	EPA 6020	ND	10.4	mg/L	0.0208	102005A	10/20/05	14:16
Silver	EPA 6020	ND	10.4	mg/L	0.0104	101905A	10/19/05	15:37
Thallium	EPA 6020	ND	10.4	mg/L	0.0104	101905A	10/19/05	15:43
Vanadium	EPA 6020	1.15	10.4	mg/L	0.0104	102005A	10/20/05	14:16
Zinc	EPA 6010B ✓	0.0252 ✓	1.04	mg/L	0.0200	101905A	10/19/05	12:51

ND: Not detected, or below limit of detection.

DF: Dilution factor.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Julia Nayberg, Manager  
Analytical Services

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155 Grand Ave. Suite 1000  
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Attention: Shawn Duffy

Sample: Three (3) Groundwater Samples

Project Name: PG&E Topock Project

Project No.: 326128.01.05.CW

P.O. No.: 801799

Investigation: California Title 22, Section 26 Metals

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

Laboratory No.: 947743

Date: October 24, 2005

Collected: October 12, 2005

Received: October 12, 2005

## Quality Control/Quality Assurance Report

Parameter	Method	Batch	Units	Blank	RL	MRCCS			MRCVS		
						Observed Value	TRUE Value	% Rec	Control Limits	Observed Value	TRUE Value
Aluminum	EPA 6010B	102005A	mg/L	ND	0.0500	4.80	5.00	96.0%	90-110%	4.65	5.00
Antimony	EPA 6020	101905A	mg/L	ND	0.0030	0.0538	0.0500	108%	90-110%	0.0472	0.0500
Arsenic	EPA 6020	102005A	mg/L	ND	0.0050	0.0507	0.0500	101%	90-110%	0.0482	0.0500
Barium	EPA 6010B	101905A	mg/L	ND	0.300	5.13	5.00	103%	90-110%	4.88	5.00
Beryllium	EPA 6020	102005A	mg/L	ND	0.0010	0.0516	0.0500	103%	90-110%	0.0511	0.0500
Cadmium	EPA 6020	101905A	mg/L	ND	0.0020	0.0511	0.0500	102%	90-110%	0.0512	0.0500
Chromium	EPA 6010B	101905A	mg/L	ND	0.0100	5.11	5.00	102%	90-110%	4.88	5.00
Cobalt	EPA 6020	101905A	mg/L	ND	0.0050	0.0498	0.0500	100%	90-110%	0.0494	0.0500
Copper	EPA 6020	101905A	mg/L	ND	0.0100	0.0517	0.0500	103%	90-110%	0.0534	0.0500
Lead	EPA 6020	101905A	mg/L	ND	0.0020	0.0500	0.0500	100%	90-110%	0.0455	0.0500
Manganese	EPA 6010B	102005A	mg/L	ND	0.500	4.86	5.00	97.2%	90-110%	4.73	5.00
Mercury	EPA 7470A	101405A	mg/L	ND	0.00020	0.00100	0.00100	100%	90-110%	0.000980	0.00100
Molybdenum	EPA 6020	101905A	mg/L	ND	0.0050	0.0513	0.0500	103%	90-110%	0.0508	0.0500
Nickel	EPA 6010B	101905A	mg/L	ND	0.0200	5.16	5.00	103%	90-110%	4.91	5.00
Selenium	EPA 6020	102005A	mg/L	ND	0.0050	0.0507	0.0500	101%	90-110%	0.0476	0.0500
Silver	EPA 6020	101905A	mg/L	ND	0.0050	0.0519	0.0500	104%	90-110%	0.0504	0.0500
Thallium	EPA 6020	101905A	mg/L	ND	0.0010	0.0515	0.0500	103%	90-110%	0.0471	0.0500
Vanadium	EPA 6020	102005A	mg/L	ND	0.0050	0.0518	0.0500	104%	90-110%	0.0488	0.0500
Zinc	EPA 6010B	101905A	mg/L	ND	0.0200	5.22	5.00	104%	90-110%	4.83	5.00
Boron	EPA 6010B	102005A	mg/L	ND	0.200	4.80	5.00	96.0%	90-110%	4.69	5.00
Iron	EPA 6010B	102005A	mg/L	ND	0.300	4.95	5.00	99.0%	90-110%	4.60	5.00

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Parameter	Method	Units	LABORATORY CONTROL SAMPLES				SAMPLE DUPLICATES				Precision Control Limits %
			LCS Obs.	LCS Theo.	% Rec.	Control Limits	SAMPLE ID	SAMPLE RESULT	DUP RESULT	% RPD	
Aluminum	EPA 6010B	mg/L	4.92	5.00	98.4%	90-110%	947743-2	ND	ND	0.00%	≤20
Antimony	EPA 6020	mg/L	0.0519	0.0500	104%	90-110%	947743-3	ND	ND	0.00%	≤20
Arsenic	EPA 6020	mg/L	0.0524	0.0500	105%	90-110%	947743-3	ND	ND	0.00%	≤20
Barium	EPA 6010B	mg/L	5.16	5.00	103%	90-110%	947489	0.0256	0.0240	6.45%	≤20
Beryllium	EPA 6020	mg/L	0.0512	0.0500	102%	90-110%	947743-3	ND	ND	0.00%	≤20
Cadmium	EPA 6020	mg/L	5.12	5.00	102%	90-110%	947743-3	ND	ND	0.00%	≤20
Chromium	EPA 6010B	mg/L	5.13	5.00	103%	90-110%	947489	0.203	0.194	4.53%	≤20
Cobalt	EPA 6020	mg/L	0.0493	0.0500	98.6%	90-110%	947743-3	ND	ND	0.00%	≤20
Copper	EPA 6020	mg/L	0.0511	0.0500	102%	90-110%	947743-3	0.0125	0.0151	18.8%	≤20
Lead	EPA 6020	mg/L	0.0502	0.0500	100%	90-110%	947743-3	ND	ND	0.00%	≤20
Manganese	EPA 6010B	mg/L	4.76	5.00	95.2%	90-110%	947743-2	ND	ND	0.00%	≤20
Mercury	EPA 7470A	mg/L	0.000920	0.00100	92.0%	80-120%	947697-2	ND	ND	0.00%	≤20
Molybdenum	EPA 6020	mg/L	0.0526	0.0500	105%	90-110%	947743-3	0.0670	0.0666	0.60%	≤20
Nickel	EPA 6010B	mg/L	5.18	5.00	104%	90-110%	947489	0.0463	0.0439	5.32%	≤20
Selenium	EPA 6020	mg/L	0.0503	0.0500	101%	90-110%	947743-3	ND	ND	0.00%	≤20
Silver	EPA 6020	mg/L	0.0528	0.0500	106%	90-110%	947743-3	ND	ND	0.00%	≤20
Thallium	EPA 6020	mg/L	0.0520	0.0500	104%	90-110%	947743-3	ND	ND	0.0%	≤20
Vanadium	EPA 6020	mg/L	0.0535	0.0500	107%	90-110%	947743-3	1.15	1.17	1.72%	≤20
Zinc	EPA 6010B	mg/L	4.74	5.00	94.8%	90-110%	947489	0.239	0.224	6.48%	≤20
Boron	EPA 6010B	mg/L	4.74	5.00	94.8%	90-110%	947743-2	1.32	1.31	0.76%	≤20
Iron	EPA 6010B	mg/L	4.96	5.00	99.2%	90-110%	947743-2	ND	ND	0.00%	≤20

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## MATRIX SPIKE

Sample ID	Parameter	Method	Units	Sample Result	DF	Spike Level	Total Amt. of Spike	Theo. Value	MS Obs.	% Rec.	Accuracy Control Limits %
947743-2	Aluminum	EPA 6010B	mg/L	0.00	1.04	2.50	2.60	2.60	2.88	111%	75-125%
947743-3	Antimony	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.472	90.8%	75-125%
947743-3	Arsenic	EPA 6020	mg/L	0.00	10.4	0.0450	0.468	0.468	0.520	111%	75-125%
947489	Barium	EPA 6010B	mg/L	0.0256	1.04	2.50	2.60	2.63	2.45	93.2%	75-125%
947743-3	Beryllium	EPA 6020	mg/L	0.00	10.4	0.0450	0.468	0.468	0.390	83.3%	75-125%
947743-3	Cadmium	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.550	106%	75-125%
947489	Chromium	EPA 6010B	mg/L	0.203	1.04	2.50	2.60	2.80	2.65	94.1%	75-125%
947743-3	Cobalt	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.525	101%	75-125%
947743-3	Copper	EPA 6020	mg/L	0.0125	10.4	0.0500	0.520	0.533	0.558	105%	75-125%
947743-3	Lead	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.483	92.9%	75-125%
947743-2	Manganese	EPA 6010B	mg/L	0.00	1.04	2.50	2.60	2.60	2.63	101%	75-125%
947743-3	Mercury	EPA 7470A	mg/L	0.00	1.00	0.00100	0.00100	0.00100	0.00100	100%	75-125%
947743-3	Molybdenum	EPA 6020	mg/L	0.0670	10.4	0.0500	0.520	0.587	0.583	99.2%	75-125%
947489	Nickel	EPA 6010B	mg/L	0.0463	1.04	2.50	2.60	2.65	2.31	87.1%	75-125%
947743-3	Selenium	EPA 6020	mg/L	0.00	10.4	0.0450	0.468	0.468	0.565	121%	75-125%
947743-3	Silver	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.497	95.6%	75-125%
947743-3	Thallium	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.501	96.3%	75-125%
947697-2	Vanadium	EPA 6020	mg/L	0.117	2.08	0.0450	0.094	0.211	0.208	97.2%	75-125%
947489	Zinc	EPA 6010B	mg/L	0.239	1.04	2.50	2.60	2.84	2.68	93.9%	75-125%
947743-2	Boron	EPA 6010B	mg/L	1.32	1.04	2.50	2.60	3.92	3.94	101%	75-125%
947743-2	Iron	EPA 6010B	mg/L	0.00	1.04	2.50	2.60	2.60	2.57	98.8%	75-125%

ND: Not detected, or below limit of detection.

DF: Dilution Factor

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

*Julia Nayberg*  
Julia Nayberg, Manager  
Analytical Services

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**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.:** 326128.01.05.CW

**P.O. No.:** 801799

**Investigation:** California Title 22, Section 26 Metals

**Laboratory No.:** 947743

**Date:** October 24, 2005

**Collected:** October 12, 2005

**Received:** October 12, 2005

## Quality Control/Quality Assurance Report

Parameter	BLANK			MRCCS			MRCVS		
	Method	Batch	Units	Blank	RL	Observed Value	TRUE Value	% Rec	Control Limits %
Chromium	EPA 6010B	101805B	mg/L	ND	0.0100	0.00967	0.0100	96.7%	90-110%
								95.6%	90-110%

Parameter	LABORATORY CONTROL SAMPLES				SAMPLE DUPLICATES			
	Method	Units	LCS Obs.	LCS Theo.	% Rec.	Sample ID	Sample Result	Control Limits %
Chromium	EPA 6010B	mg/L	0.00944	0.0100	94.4%	947743-2	ND	90-110%

### MATRIX SPIKE

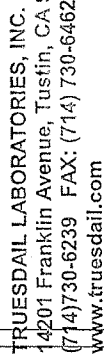
Sample ID	Parameter	Method	Units	mg/L	Sample Result	DF	Spike Level	Total Amt. of Spike	Theo. Value	MS Obs.	% Rec.	Accuracy Control Limits %
947743-2	Chromium	EPA 6010B	mg/L		0.00	1.04	0.0100	0.0104	0.0104	0.00796	76.5%	75-125%

ND: Not detected, or below limit of detection.

DF: Dilution Factor

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

*Julia Nayberg*  
Julia Nayberg, Manager  
Analytical Services



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

[M3Plant-WDR-016]

COC Number

5 Days

DATE 10/12/05 PAGE 1 OF 1

COMPANY	PROJECT NAME	PHONE	ADDRESS	P.O. NUMBER	SAMPLERS (SIGNATURE)	SAMPLE I.D.	DATE	TIME	DESCRIPTION	CR6 (7/199) Lab Filtered	Total Met (6010B) Title 22	Total Met (6010B) Total Al, Ba, B, C, Cu, Pb, Mn, Mo, Ni, Sb, Fe, Zn	Metals (7470A)	Specific Conductance (120.1)	pH (150.1)	TDS (160.1)	Anions (300) FI	Anions (300) FI, SO <sub>4</sub> , NO <sub>2</sub> , NO <sub>3</sub>	Ammonia (350.2)	Turbidity (180.1)	NUMBER OF CONTAINERS	COMMENTS
CH2M HILL	PG&E Topock	(510) 251-2888	155 Grand Ave Ste 1000 Oakland, CA 94612	334168.IM.04.00	<i>[Signature]</i>	SC-100B-WDR-016	10-12-05	1011 0952	Groundwater	x	x	x	x	x	x	x	x	x	x	x	5	
						SC-700B-WDR-016	10-12-05	0952	Groundwater	x	x			x	x	x		x	x	x	5	
						SC-701-WDR-016	10-12-05	1028	Groundwater	x	x		x	x	x	x	x				5	
										TOTAL NUMBER OF CONTAINERS												

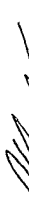
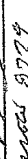
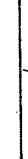
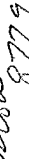






For Sample Conditions  
See Form Attached

ATLANTA

# Level II QC

Rec'd 10/12/05

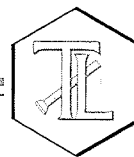
347748

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL	WARM	°F
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	James 8779	City Sable	12/12/05 1530		<input type="checkbox"/>	<input type="checkbox"/>	
	James 8779	City Sable	12/12/05 1530		<input type="checkbox"/>	<input type="checkbox"/>	
	James 8779	City Sable	12/12/05 1530		<input type="checkbox"/>	<input type="checkbox"/>	
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	James 8779	City Sable	12/12/05 1530		<input type="checkbox"/>	<input type="checkbox"/>	
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	James 8779	City Sable	12/12/05 1530		<input type="checkbox"/>	<input type="checkbox"/>	
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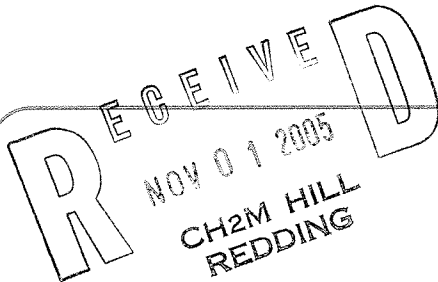
# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

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TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
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## CH2M HILL PG&E Topock Project

**Laboratory Number: 948002**

**Received: October 19, 2005**

**IM3Plant-WDR-017**

**Project No.: 334168.IM.04.00**

**P.O. No.: 911248**



Prepared for:

**CH2M HILL  
Attn: Mark Cichy  
2525 Airpark Dr.  
Redding, CA 96001**

Prepared by:

**TRUESDAIL LABORATORIES, INC.  
TUSTIN, CALIFORNIA**

**Table of Contents**  
**TLI Laboratory Data Package**  
**For Laboratory Number: 948002**

<u>ITEM</u>	<u>Section</u>
Case Narrative	1.0
Summary Table of Final Results	2.0
Final Reports	3.0
Wet Chem Analysis/ Raw Data, Standard, Quality Control and Chain of Custody Records	4.0
Established Retention Time Window and Analytical Raw Data	5.0

## Section 1.0

# Case Narrative



# TRUESDAIL LABORATORIES, INC.

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October 26, 2005

CH2M HILL

Mr. Shawn Duffy

155 Grand Ave., Suite 1000

Oakland, California 94612

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT -WDR-0017 PROJECT, GROUNDWATER  
MONITORING,

TLI NO.: 948002

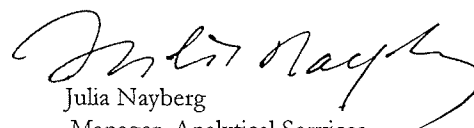
Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3 Plant-WDR-017 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, and Total Dissolved Solids. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on October 19, 2005, 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.

  
Julia Nayberg  
Manager, Analytical Services



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

## 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.: 948002  
Date Received: October 19, 2005

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

## Analytical Results Summary

<u>Lab I.D.</u>	<u>Sample I.D.</u>	<u>Sample Time</u>	<u>SW 6020</u> <i>Chromium Total</i> <b>mg/L</b>	<u>SW 7199</u> <i>Chromium Hexavalent</i> <b>mg/L</b>	<u>EPA 180.1</u> <i>Turbidity</i> <b>NTU</b>	<u>EPA 150.1</u> <i>pH</i> <b>Unit</b>	<u>EPA 120.1</u> <i>EC</i> <b>µmhos/cm</b>	<u>EPA 160.1</u> <i>TDS</i> <b>mg/L</b>
948002-1	SC-100B-WDR-017	14:30	3.68	3.79	ND	7.48	9190	6080
948002-2	SC-700B-WDR-017	14:35	ND	0.00021	ND	7.83	5950	3850
948002-3	SC-701-WDR-017	14:40	ND	ND	---	7.84	40800	26000

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.

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

## Section 3.0

# Final Reports

# 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

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

**Laboratory No.:** 948002

**Date:** October 26, 2005  
**Collected:** October 19, 2005  
**Received:** October 19, 2005  
**Prep/ Analyzed:** October 20, 2005  
**Analytical Batch:** 10CrH050

**Investigation:**

**Hexavalent Chromium by SW 7199**

### Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
948002-1	SC-100B-WDR-017	14:30	07:29	mg/L	200	0.0400	3.79
948002-2	SC-700B-WDR-017	14:35	08:16	mg/L	1.05	0.00020	0.00021
948002-3	SC-701-WDR-017	14:40	08:54	mg/L	10.0	0.0020	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	948002-1	3.79	3.95	4.13%	≤ 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	948002-1	3.79	200	0.0200	4.00	8.01	7.79	106%	75-125%	Yes
MS	948002-2	0.00021	1.06	0.00100	0.00106	0.00127	0.00127	100%	75-125%	Yes
MS	948002-3	0.00	10.0	0.00100	0.0100	0.0116	0.0100	116%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00497	0.00500	99.4%	90% - 110%	Yes
MRCVS#1	0.0100	0.0100	100%	90% - 110%	Yes
LCS	0.00513	0.00500	103%	90% - 110%	Yes

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

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

  
Julia Nayberg, Manager  
Analytical Services

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INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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

## REPORT

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

Attention: Shawn Duffy

Laboratory No.: 948002

Sample: Three (3) Groundwater Samples  
Project Name: PG&E Topock Project  
Project No.: 334168.IM.04.00  
P.O. No.: 911248  
Prep. Batch: 102505B

Date: October 26, 2005  
Collected: October 19, 2005  
Received: October 19, 2005  
Prep/ Analyzed: October 25, 2005  
Analytical Batch: 102505B

Investigation:

Total Chromium by Inductively Coupled Argon Plasma  
Using Method SW 6010B

### Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
948002-1	SC-100B-WDR-017	mg/L	SW 6010B	14:54	1.04	0.0104	3.68

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	948002-1	3.68	3.75	1.88%	≤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	948002-1	3.68	1.04	2.50	2.60	6.25	6.28	98.8%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	5.18	5.00	104%	90% - 110%	Yes
MRCVS#1	5.09	5.00	102%	90% - 110%	Yes
ICS	2.13	2.00	107%	80% - 120%	Yes
LCS	5.07	5.00	101%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

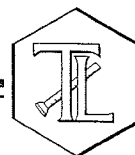
Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Julia Nayberg, Manager  
Analytical Services

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Oakland, CA 94612

## REPORT

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

Attention: Shawn Duffy

Laboratory No.: 948002

Sample: Three (3) Groundwater Samples  
Project Name: PG&E Topock Project  
Project No.: 334168.IM.04.00  
P.O. No.: 911248  
Prep. Batch: 102505A

Date: October 26, 2005  
Collected: October 19, 2005  
Received: October 19, 2005  
Prep/ Analyzed: October 25, 2005  
Analytical Batch: 102505A

Investigation:

Total Chromium by Inductively Coupled Argon Plasma  
Using Method SW 6010B

### Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
948002-2	SC-700B-WDR-017	mg/L	SW 6010B	10:17	1.04	0.0010	ND
948002-3	SC-701-WDR-017	mg/L	SW 6010B	10:21	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	948050-6	0.0254	0.0252	0.79%	≤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	948050-4	0.0104	1.04	0.0100	0.0104	0.0194	0.0208	86.5%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00966	0.0100	96.6%	90% - 110%	Yes
MRCVS#1	0.0101	0.0100	101%	90% - 110%	Yes
MRCVS#2	0.00958	0.0100	95.8%	90% - 110%	Yes
ICS	0.00982	0.0100	98.2%	80% - 120%	Yes
LCS	0.00966	0.0100	96.6%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Julia Nayberg, Manager  
Analytical Services

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TUSTIN, CALIFORNIA 92780-7008  
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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

**P.O. No.:** 911248

**Laboratory No.:** 948002

**Date:** October 26, 2005

**Collected:** October 19, 2005

**Received:** October 19, 2005

**Prep/ Analyzed:** October 20, 2005

**Analytical Batch:** 10TUC05P

**Investigation:**

**Turbidity by Method EPA 180.1**

### Analytical Results Turbidity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
948002-1	SC-100B-WDR-017	14:30	NTU	1.00	0.100	ND
948002-2	SC-700B-WDR-017	14:35	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	947995-66	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.65	8.00	95.6%	90% - 110%	Yes
LCS	7.60	8.00	95.0%	90% - 110%	Yes
LCS	7.60	8.00	95.0%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

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

  
Julia Nayberg, Manager  
Analytical Services

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Oakland, CA 94612

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www.truesdail.com

**Attention:** Shawn Duffy

**Laboratory No.:** 948002

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

**Date:** October 26, 2005  
**Collected:** October 19, 2005  
**Received:** October 19, 2005  
**Prep/ Analyzed:** October 20, 2005  
**Analytical Batch:** 10PH05T

**Investigation:**

pH by EPA 150.1

### Analytical Results pH

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>MDL</u>	<u>RL</u>	<u>Results</u>
948002-1	SC-100B-WDR-017	14:30	07:10	pH Units	0.0140	0.100	7.48
948002-2	SC-700B-WDR-017	14:35	07:15	pH Units	0.0140	0.100	7.83
948002-3	SC-701-WDR-017	14:40	07:20	pH Units	0.0140	0.100	7.84

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	948022	7.18	7.18	0.0000	± 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.00	7.00	0.000	± 0.100 Units	Yes
LCS #1	7.00	7.00	0.000	± 0.100 Units	Yes

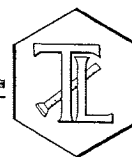
Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Julia Nayberg, Manager  
Analytical Services

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931



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

## REPORT

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

**Attention:** Shawn Duffy

**Laboratory No.:** 948002

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

**Date:** October 26, 2005  
**Collected:** October 19, 2005  
**Received:** October 19, 2005  
**Prep/ Analyzed:** October 20, 2005  
**Analytical Batch:** 10EC05Q

**Investigation:**

**Specific Conductivity by EPA 120.1**

### Analytical Results Specific Conductivity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
948002-1	SC-100B-WDR-017	µmhos/cm	EPA 120.1	1.00	2.00	9190
948002-2	SC-700B-WDR-017	µmhos/cm	EPA 120.1	1.00	2.00	5950
948002-3	SC-701-WDR-017	µmhos/cm	EPA 120.1	10.0	20.0	40800

### QA/QC Summary

<u>QC STD I.D.</u>	<u>Laboratory Number</u>	<u>Concentration</u>	<u>Duplicate Concentration</u>	<u>Relative Percent Difference</u>	<u>Acceptance limits</u>	<u>QC Within Control</u>
Duplicate	947992-1	4140	4160	0.48%	≤ 10%	Yes

<u>QC Std I.D.</u>	<u>Measured Concentration</u>	<u>Theoretical Concentration</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>	<u>QC Within Control</u>
CCS	697	706	98.7%	90% - 110%	Yes
CVS#1	945	996	94.9%	90% - 110%	Yes
CVS#2	948	996	95.2%	90% - 110%	Yes
LCS	698	706	98.9%	90% - 110%	Yes
LCSD	701	706	99.3%	90% - 110%	Yes

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

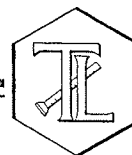
  
Julia Nayberg, Manager  
Analytical Services

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

## REPORT

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

Attention: Shawn Duffy

Laboratory No.: 948002

Sample: Three (3) Groundwater Samples

Date: October 26, 2005

Project Name: PG&E Topock Project

Collected: October 19, 2005

Project No.: 334168.IM.04.00

Received: October 19, 2005

P.O. No.: 911248

Prep/ Analyzed: October 20, 2005

Analytical Batch: 10TDS05K

Investigation:

Total Dissolved Solids by EPA 160.1

## Analytical Results Total Dissolved Solids

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>RL</u>	<u>Results</u>
948002-1	SC-100B-WDR-017	mg/L	EPA 160.1	250	6080
948002-2	SC-700B-WDR-017	mg/L	EPA 160.1	167	3850
948002-3	SC-701-WDR-017	mg/L	EPA 160.1	1250	26000

## QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	948002-1	6080	6160	0.65%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	481	500	96.2%	90% - 110%	Yes
LCS 2	488	500	97.6%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Julia Nayberg, Manager  
Analytical Services

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# CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-017]

COC Number

5 Days

TURNAROUND TIME

DATE

PAGE 1 OF 1

COMPANY

CH2M HILL

PROJECT NAME

PG&E Topock

PHONE

(510) 251-2888

FAX (510) 622-7086

ADDRESS

155 Grand Ave Ste 1000

Oakland, CA 94612

P.O. NUMBER

334168.IM.04.00

SAMPLERS (SIGNATURE)

SAMPLE I.D.

DATE

TIME

DESCRIPTION

SC-100B-WDR-017

10/19

1430

Groundwater

SC-700B-WDR-017

10/19

1435

Groundwater

SC-701-WDR-017

10/19

1440

Groundwater

CR6 (7199) Lab Filtered  
Total Met (60108) Total Chromium  
Specific Conductance (120.1)  
PH (150.1)  
TDS (160.1)  
Turbidity (180.1)

NUMBER OF CONTAINERS

3

3

3

9

TOTAL NUMBER OF CONTAINERS

COMMENTS

Rec'd 10/19/05  
948002

RUSH

ALERT!!

Level III QC

## CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	Signature (Received)	Printed Name	Company/Agency	Date/Time
<i>[Signature]</i>	Joseph L. Lohr	DMT Inc	10/19/05 1520	<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530
<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530	<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530
<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530	<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530
<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530	<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530
<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530	<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530
<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530	<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530
<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530	<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530
<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530	<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530
<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530	<i>[Signature]</i>	SPARROW	EXPECUTIVE	10/19/05 1530

SAMPLE CONDITIONS

°F

RECEIVED

COOL

WARM

CUSTOMY SEALED

YES

NO

SPECIAL REQUIREMENTS:

For Sample Conditions  
See Form Attached



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INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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**R** **E** **C** **E** **I** **V** **E** **D**  
NOV 01 2005  
CH2M HILL  
REDDING

## **CH2M HILL** **PG&E Topock Project**

**Laboratory Number: 948207**

**Received: October 25, 2005**

**IM3Plant-WDR-018**

**Project No.: 334168.IM.04.00**

**P.O. No.: 911248**



**Prepared for:**

**CH2M HILL**  
**Attn: Mark Cichy**  
**2525 Airpark Dr.**  
**Redding, CA 96001**

**Prepared by:**

**TRUESDAIL LABORATORIES, INC.**  
**TUSTIN, CALIFORNIA**

**Table of Contents**  
**TLI Laboratory Data Package**  
**For Laboratory Number: 948207**

<u>ITEM</u>	<u>Section</u>
Case Narrative	1.0
Summary Table of Final Results	2.0
Final Reports	3.0
Wet Chem Analysis/ Raw Data, Standard, Quality Control and Chain of Custody Records	4.0
Established Retention Time Window and Analytical Raw Data	5.0

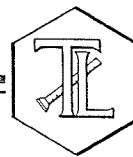
## Section 1.0

# Case Narrative



# TRUESDAIL LABORATORIES, INC.

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October 28, 2005

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

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT -WDR-0018 PROJECT, GROUNDWATER  
MONITORING,  
TLI NO.: 948207

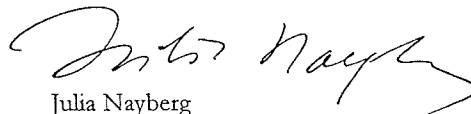
Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3 Plant-WDR-018 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, and Total Dissolved Solids. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

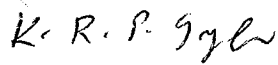
The samples were received and delivered with the chain of custody on October 25, 2005, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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.

  
Julia Nayberg  
Manager, Analytical Services

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

Field ID	SDG	Method	Param	Analyst
IM3Plant-WDR-017	948207	E120.1	SC	Alex Hernandez
		E150.1	PH	Alex Hernandez
		E160.1	TDS	Emilia Haley
		E180.1	TURBID	Gautam Savani
		SW6010B	Metals	Riddhi Patel
		SW7199	CR6	Vanna Kho

## Section 2.0

# Summary Table of Final Results

# TRUESDAIL LABORATORIES, INC.

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

**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.:** 948207

**Date Received:** October 25, 2005

## Analytical Results Summary

<u>Lab I.D.</u>	<u>Sample I.D.</u>	<u>Sample Time</u>	<u>SW 6010B</u> Chromium Total mg/L	<u>SW 7199</u> Chromium Hexavalent mg/L	<u>EPA 180.1</u> Turbidity NTU	<u>EPA 150.1</u> pH	<u>EPA 120.1</u> EC µmhos/cm	<u>EPA 160.1</u> TDS mg/L
948207-1	SC-100B-WDR-018	13:05	3.27	3.90	ND	7.35	9160	5880
948207-2	SC-700B-WDR-018	13:20	ND	ND	0.155	7.90	7180	3990
948207-3	SC-701-WDR-018	13:15	ND	0.0020	---	7.91	46900	28400

**ND:** Non Detected (below reporting limit)

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

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

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

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

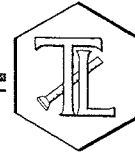
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## Section 3.0

# Final Reports

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

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

## REPORT

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

Attention: Shawn Duffy

Laboratory No.: 948207

Sample: Three (3) Groundwater Samples  
Project Name: PG&E Topock Project  
Project No.: 334168.IM.04.00  
P.O. No.: 911248  
Prep. Batch: 102705B

Date: October 28, 2005  
Collected: October 25, 2005  
Received: October 25, 2005  
Prep/ Analyzed: October 27, 2005  
Analytical Batch: 102705B

Investigation: Total Chromium by Inductively Coupled Argon Plasma  
Using Method SW 6010B

### Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
948207-1	SC-100B-WDR-018	mg/L	SW 6010B	15:46	1.04	0.0104	3.27

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	948206-1	0.628	0.638	1.58%	≤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	948206-1	0.628	1.04	2.00	2.08	2.73	2.71	101%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.84	5.00	96.8%	90% - 110%	Yes
MRCVS#1	4.52	5.00	90.4%	90% - 110%	Yes
ICS	2.04	2.00	102%	80% - 120%	Yes
LCS	5.14	5.00	103%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Julia Nayberg, Manager  
Analytical Services

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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: 102705A

## REPORT

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

Laboratory No.: 948207

Date: October 28, 2005

Collected: October 25, 2005

Received: October 25, 2005

Prep/ Analyzed: October 27, 2005

Analytical Batch: 102705A

Investigation:

Total Chromium by Inductively Coupled Argon Plasma  
Using Method SW 6010B

### Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
948207-2	SC-700B-WDR-018	mg/L	SW 6010B	12:35	1.04	0.0010	ND
948207-3	SC-701-WDR-018	mg/L	SW 6010B	13:00	10.4	0.0104	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	948207-2	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	948207-2	0.00	1.04	0.0100	0.0104	0.0117	0.0104	113%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0105	0.0100	105%	90% - 110%	Yes
MRCVS#1	0.00975	0.0100	97.5%	90% - 110%	Yes
ICS	0.00918	0.0100	91.8%	80% - 120%	Yes
LCS	0.0100	0.0100	100%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

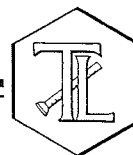
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Established 1931

## 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

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

Laboratory No.: 948207

Date: October 28, 2005  
Collected: October 25, 2005  
Received: October 25, 2005  
Prep/ Analyzed: October 26, 2005  
Analytical Batch: 10CrH05R

Investigation: Hexavalent Chromium by SW 7199

### Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
948207-1	SC-100B-WDR-018	13:05	06:29	mg/L	200	0.0400	3.90
948207-2	SC-700B-WDR-018	13:20	07:53	mg/L	5.00	0.00100	ND
948207-3	SC-701-WDR-018	13:15	09:27	mg/L	10.0	0.0020	0.0020

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	948207-1	3.90	3.90	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	948207-1	3.90	200	0.0200	4.00	7.97	7.90	102%	75-125%	Yes
MS	948207-2	0.00	5.00	0.00100	0.00500	0.00528	0.00500	106%	75-125%	Yes
MS	948207-3	0.0020	10.0	0.00100	0.0100	0.0119	0.0120	99.0%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCSS	0.00498	0.00500	99.6%	90% - 110%	Yes
MRCVS#1	0.0100	0.0100	100%	90% - 110%	Yes
MRCVS#2	0.00996	0.0100	99.6%	90% - 110%	Yes
MRCVS#3	0.0100	0.0100	100%	90% - 110%	Yes
LCS	0.00509	0.00500	102%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Julia Nayberg, Manager  
Analytical Services

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Established 1931

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155 Grand Ave. Suite 1000  
Oakland, CA 94612

## REPORT

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

**Attention:** Shawn Duffy

**Laboratory No.:** 948207

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

**Date:** October 28, 2005  
**Collected:** October 25, 2005  
**Received:** October 25, 2005  
**Prep/ Analyzed:** October 25, 2005  
**Analytical Batch:** 10EC05S

**Investigation:**

**Specific Conductivity by EPA 120.1**

### Analytical Results Specific Conductivity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
948207-1	SC-100B-WDR-018	µmhos/cm	EPA 120.1	1.00	2.00	9160
948207-2	SC-700B-WDR-018	µmhos/cm	EPA 120.1	1.00	2.00	7180
948207-3	SC-701-WDR-018	µmhos/cm	EPA 120.1	10.0	20.0	46900

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	948173-18	762	764	0.26%	≤ 10%	Yes
	QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
	CCS	695	706	98.4%	90% - 110%	Yes
	CVS#1	947	996	95.1%	90% - 110%	Yes
	LCS	697	706	98.7%	90% - 110%	Yes
	LCSD	701	706	99.3%	90% - 110%	Yes

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

  
Julia Nayberg, Manager  
Analytical Services

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931



## 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

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**Laboratory No.:** 948207

**Date:** October 28, 2005  
**Collected:** October 25, 2005  
**Received:** October 25, 2005  
**Prep/ Analyzed:** October 26, 2005  
**Analytical Batch:** 10PH05Y

**Investigation:**

pH by EPA 150.1

### Analytical Results pH

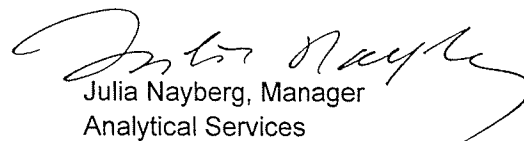
<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>MDL</u>	<u>RL</u>	<u>Results</u>
948207-1	SC-100B-WDR-018	13:05	07:05	pH Units	0.0140	0.100	7.35
948207-2	SC-700B-WDR-018	13:20	07:10	pH Units	0.0140	0.100	7.90
948207-3	SC-701-WDR-018	13:15	07:15	pH Units	0.0140	0.100	7.91

### QA/QC Summary

<u>QC STD I.D.</u>	<u>Laboratory Number</u>	<u>Concentration</u>	<u>Duplicate Concentration</u>	<u>Difference (Units)</u>	<u>Acceptance limits</u>	<u>QC Within Control</u>
Duplicate	948207-3	7.91	7.91	0.0000	+ 0.100 Units	Yes

<u>QC Std I.D.</u>	<u>Measured Concentration</u>	<u>Theoretical Concentration</u>	<u>Difference (Units)</u>	<u>Acceptance Limits</u>	<u>QC Within Control</u>
LCS	7.00	7.00	0.000	+ 0.100 Units	Yes
LCS #1	7.01	7.00	0.010	+ 0.100 Units	Yes

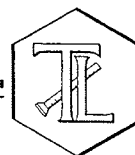
Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Julia Nayberg, Manager  
Analytical Services

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931



**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

## REPORT

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**Laboratory No.:** 948207

**Date:** October 28, 2005

**Collected:** October 25, 2005

**Received:** October 25, 2005

**Prep/ Analyzed:** October 26, 2005

**Analytical Batch:** 10TDS05L

**Investigation:**

**Total Dissolved Solids by EPA 160.1**

### Analytical Results Total Dissolved Solids

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>RL</u>	<u>Results</u>
948207-1	SC-100B-WDR-018	mg/L	EPA 160.1	250	5880
948207-2	SC-700B-WDR-018	mg/L	EPA 160.1	250	3990
948207-3	SC-701-WDR-018	mg/L	EPA 160.1	1250	28400

<u>QC STD I.D.</u>	<u>Laboratory Number</u>	<u>Concentration</u>	<u>Duplicate Concentration</u>	<u>Percent Difference</u>	<u>Acceptance limits</u>	<u>QC Within Control</u>
Duplicate	948207-1	5880	5990	0.93%	≤ 5%	Yes

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

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

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

  
Julia Nayberg, Manager  
Analytical Services

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

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

## 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

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**Laboratory No.:** 948207

**Date:** October 28, 2005

**Collected:** October 25, 2005

**Received:** October 25, 2005

**Prep/ Analyzed:** October 26, 2005

**Analytical Batch:** 10TUC05U

**Investigation:**

**Turbidity by Method EPA 180.1**

### Analytical Results Turbidity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
948207-1	SC-100B-WDR-018	13:05	NTU	1.00	0.100	ND
948207-2	SC-700B-WDR-018	13:20	NTU	1.00	0.100	0.155

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	948173-13	0.503	0.504	0.20%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	8.43	8.00	105%	90% - 110%	Yes
LCS	8.40	8.00	105%	90% - 110%	Yes
LCS	8.40	8.00	105%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

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

  
Julia Nayberg, Manager  
Analytical Services

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# CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-018]

COC Number

5 Days

TURNAROUND TIME

DATE 10-25-05 PAGE 1 OF 1

948207

COMPANY CH2M HILL  
PROJECT NAME PG&E Topock  
PHONE (510) 251-2888 FAX (510) 622-7086  
ADDRESS 155 Grand Ave Ste 1000  
Oakland, CA 94612  
P.O. NUMBER 334168.IM.04.00  
SAMPLERS (SIGNATURE) *Joseph Padellaro*

COMMENTS				NUMBER OF CONTAINERS																																							
Rec'd 10/25/05 948207				RUSH!																																							
				TOTAL NUMBER OF CONTAINERS																																							
				9																																							
COMPANY				CH2M HILL				CR6 (7199) Lab Filled				Total Met (60108) Total Chromium				Specific Conductance (120.1)				pH (150.1)				TDS (160.1)				Turbidity (180.1)															
PROJECT NAME				PG&E Topock				x				x				x				x				x				x				x				x							
PHONE				(510) 251-2888				FAX (510) 622-7086				x				x				x				x				x				x				x				x			
ADDRESS				155 Grand Ave Ste 1000				x				x				x				x				x				x				x				x				x			
				Oakland, CA 94612				x				x				x				x				x				x				x				x				x			
P.O. NUMBER				334168.IM.04.00				x				x				x				x				x				x				x				x				x			
SAMPLERS (SIGNATURE)								x				x				x				x				x				x				x				x				x			
SAMPLE ID.				SC-100B-WDR-018				10-25-05				1305				Groundwater				x				x				x				x				x				x			
				SC-700B-WDR-018				10-25-05				1320				Groundwater				x				x				x				x				x				x			
				SC-701-WDR-018				10-25-05				1315				Groundwater				x				x				x				x				x				x			

RUSH

ALERT!!  
Level III QC

## CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)		Printed Name	Company/Agency	Date/Time	Signature (Received)		Printed Name	Company/Agency	Date/Time	Signature (Relinquished)		Printed Name	Company/Agency	Date/Time	Signature (Received)		Printed Name	Company/Agency	Date/Time	Signature (Relinquished)		Printed Name	Company/Agency	Date/Time	Signature (Received)		Printed Name	Company/Agency	Date/Time
<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530
<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530
<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530
<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530	<i>Joseph Padellaro</i>		Joseph Padellaro	CH2M Hill	10-25-05 1530

### SAMPLE CONDITIONS

RECEIVED COOL ☐ WARM ☐ °F  
CUSTODY SEALED YES ☐ NO ☐

### SPECIAL REQUIREMENTS:

For Sample Conditions  
See Form Attached

# **ANALYTICAL REPORT**

PG&E TOPOCK GWM

Lot #: E5J050196

Shawn Duffy

CH2M Hill Inc

SEVERN TRENT LABORATORIES, INC.

Marisol Tabirara  
Project Manager

October 11, 2005

## EXECUTIVE SUMMARY - Detection Highlights

E5J050196

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
SC-SLUDGE-WDR-013 09/22/05 14:15 001				
Chromium	130	0.10	mg/L	SW846 6010B
Zinc	1.4	1.0	mg/L	SW846 6010B
pH (solid)	8.2	0.10	No Units	SW846 9045C

# METHODS SUMMARY

E5J050196

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 CAM TITLE
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 1311/3010
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A	SW846 CAM TITLE
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A	SW846 1311/7470
Soil and Waste pH	SW846 9045C	SW846 DI-LEACHA

## References:

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



# SAMPLE SUMMARY

E5J050196

WO #	SAMPLE#	CLIENT	SAMPLE ID	SAMPLED DATE	SAMP TIME
HL25N	001	SC-SLUDGE-WDR-013		09/22/05	14:15

## 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-013**

**TCLP Metals**

**Lot-Sample #...**: E5J050196-001

**Matrix.....**: SO

**Date Sampled...**: 09/22/05 14:15    **Date Received...**: 09/23/05 18:30

**Leach Date.....**: 10/05/05        **Leach Batch #...**: P527812

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION-</u>	<u>WORK</u>
		<u>LIMIT</u>	<u>UNITS</u>		<u>ANALYSIS DATE</u>	<u>ORDER #</u>
<b>Prep Batch #...</b> : 5279499						
Arsenic	ND	0.50	mg/L	SW846 6010B	10/06-10/08/05	HL25N1AV
		Dilution Factor: 1		Analysis Time..: 16:42	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5279312		
Barium	ND	10	mg/L	SW846 6010B	10/06-10/08/05	HL25N1AW
		Dilution Factor: 1		Analysis Time..: 16:42	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5279312		
Cadmium	ND	0.10	mg/L	SW846 6010B	10/06-10/08/05	HL25N1AX
		Dilution Factor: 1		Analysis Time..: 16:42	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5279312		
Chromium	ND	0.50	mg/L	SW846 6010B	10/06-10/08/05	HL25N1A0
		Dilution Factor: 1		Analysis Time..: 16:42	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5279312		
Lead	ND	0.50	mg/L	SW846 6010B	10/06-10/08/05	HL25N1A1
		Dilution Factor: 1		Analysis Time..: 16:42	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5279312		
Selenium	ND	0.25	mg/L	SW846 6010B	10/06-10/08/05	HL25N1A2
		Dilution Factor: 1		Analysis Time..: 16:42	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5279312		
Silver	ND	0.50	mg/L	SW846 6010B	10/06-10/08/05	HL25N1A3
		Dilution Factor: 1		Analysis Time..: 16:42	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5279312		
<b>Prep Batch #...</b> : 5279549						
Mercury	ND	0.0020	mg/L	SW846 7470A	10/07/05	HL25N1A4
		Dilution Factor: 1		Analysis Time..: 16:01	Analyst ID.....: 000023	
		Instrument ID..: M04		MS Run #.....: 5279343		

**NOTE(S):**

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

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-013

STLC Metals

Lot-Sample #...: E5J050196-001

Matrix.....: SO

Date Sampled...: 09/22/05 14:15 Date Received...: 09/23/05 18:30

Leach Date.....: 10/05/05 Leach Batch #...: P527811

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
<b>Prep Batch #...: 5280460</b>						
Antimony	ND	1.0	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AA
		Dilution Factor: 1		Analysis Time...: 15:47	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 5280293		
Arsenic	ND	1.0	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AC
		Dilution Factor: 1		Analysis Time...: 15:47	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 5280293		
Barium	ND	10	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AD
		Dilution Factor: 1		Analysis Time...: 15:47	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 5280293		
Beryllium	ND	0.10	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AE
		Dilution Factor: 1		Analysis Time...: 15:47	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 5280293		
Cadmium	ND	0.10	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AF
		Dilution Factor: 1		Analysis Time...: 15:47	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 5280293		
Chromium	130	0.10	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AG
		Dilution Factor: 1		Analysis Time...: 15:47	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 5280293		
Cobalt	ND	1.0	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AH
		Dilution Factor: 1		Analysis Time...: 15:47	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 5280293		
Copper	ND	1.0	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AJ
		Dilution Factor: 1		Analysis Time...: 15:47	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 5280293		
Lead	ND	1.0	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AK
		Dilution Factor: 1		Analysis Time...: 15:47	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 5280293		

(Continued on next page)

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-013

STLC Metals

Lot-Sample #...: E5J050196-001

Matrix.....: SO

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION-	WORK
		LIMIT	UNITS		ANALYSIS DATE	ORDER #
Molybdenum	ND	1.0	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AL
		Dilution Factor: 1		Analysis Time..: 15:47	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5280293		
Nickel	ND	1.0	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AM
		Dilution Factor: 1		Analysis Time..: 15:47	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5280293		
Selenium	ND	1.0	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AN
		Dilution Factor: 1		Analysis Time..: 15:47	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5280293		
Silver	ND	0.10	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AP
		Dilution Factor: 1		Analysis Time..: 15:47	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5280293		
Thallium	ND	1.0	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AQ
		Dilution Factor: 1		Analysis Time..: 15:47	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5280293		
Vanadium	ND	1.0	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AR
		Dilution Factor: 1		Analysis Time..: 15:47	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5280293		
Zinc	1.4	1.0	mg/L	SW846 6010B	10/07-10/11/05	HL25N1AT
		Dilution Factor: 1		Analysis Time..: 15:47	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5280293		

Prep Batch #...: 5280486

Mercury	ND	0.020	mg/L	SW846 7470A	10/10-10/11/05	HL25N1AU
		Dilution Factor: 10		Analysis Time..: 13:35	Analyst ID.....: 000023	
		Instrument ID..: M04		MS Run #.....: 5280306		

**NOTE(S):**

Soluble 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-013

General Chemistry

Lot-Sample #...: E5J050196-001    Work Order #...: HL25N    Matrix.....: SO  
Date Sampled...: 09/22/05 14:15    Date Received..: 09/23/05 18:30  
% Moisture.....:

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
pH (solid)	8.2	0.10	No Units	SW846 9045C	10/05/05	5278501
		Dilution Factor: 1		Analysis Time..: 15:42	Analyst ID.....: 000064	
		Instrument ID..: W07		MS Run #.....: 5278313		