Pacific Gas and Electric Company

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July 14, 2006

Mr. 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: PG&E Topock Compressor Station
Interim Measure No. 3 Groundwater Treatment System
Board Order R7-2004-0103, Discharge to Injection Wells
June 2006 Monitoring Report / Second Quarter 2006 Monitoring Report /
Semi-Annual January 1, 2006 – June 30, 2006 Operation and Maintenance Report
WDID No. 7B 36 2033 001

Dear Mr. Perdue:

Enclosed is the June 2006 Monitoring Report, Second Quarter 2006 Monitoring Report, and January 1 to June 30, 2006 Semi-Annual Operation and Maintenance Report for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station, Interim Measure (IM) No. 3 Groundwater Treatment System. This report is being submitted in compliance with the Waste Discharge Requirements (WDRs) issued by the Colorado River Basin Regional Water Quality Control Board (Water Board) under Board Order R7-2004-0103.

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

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

Sincerely,

Curt Russell
Topock Onsite Project Manager

Enclosures:

Board Order R7-2004-0103 IM No. 3 Groundwater Treatment System June 2006 Monitoring Report / Second Quarter 2006 Monitoring Report / January 1, 2006 to June 30, 2006 Semi-Annual Operation and Maintenance Report

cc: José Cortez, RWQCB
Liann Chavez, RWQCB
Tom Vandenberg, RWQCB
Chris Guerre, DTSC

June 2006 Monitoring Report, Second Quarter 2006 Monitoring Report, and Semi-Annual Operation and Maintenance Report for January 1–June 30, 2006

Interim Measure No. 3 Groundwater Treatment System
Waste Discharge Requirements Order No. R7-2004-0103
WDID No. 7B 36 2033 001
PG&E Topock Remediation Facility
Needles, California

Prepared for

California Regional Water Quality Control Board
Colorado River Basin Region

On behalf of

Pacific Gas and Electric Company

July 14, 2006

CH2MHILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

Combined Report
June 2006 Monitoring Report,
Second Quarter 2006 Monitoring Report,
and
Semi-Annual Operation and Maintenance Report
January 1 – June 30, 2006

Interim Measure No. 3 Groundwater Treatment System
Waste Discharge Requirements Order No. R7-2004-0103
PG&E Topock Remediation Facility
Needles, California

Prepared for
Pacific Gas and Electric Company

July 14, 2006

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

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

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Acronyms and Abbreviations

BLM	United States Bureau of Land Management
DTSC	California Department of Toxic Substances Control
gpm	gallons per minute
IM	Interim Measure
mg/kg	milligram per kilogram
mg/L	milligram per liter
MBC	MBC Applied Environmental Sciences Laboratories
MRP	Monitoring and Reporting Program
PG&E	Pacific Gas and Electric Company
PLC	process logic controller
STL	Severn Trent Laboratories, Inc.
Truesdail	Truesdail Laboratories, Inc.
Water Board	California Regional Water Quality Control Board, Colorado River Basin Region
WDR	Waste Discharge Requirements

1.0 Introduction

Pacific Gas and Electric Company (PG&E) is implementing an Interim Measure (IM) to address chromium concentrations in groundwater near the Topock Compressor Station in 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 the IM No. 3 groundwater treatment system. 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 monitoring reports to be submitted by the 15th day of the month following the end of the monitoring and reporting period. **This IM No. 3 groundwater treatment system combined report includes June 2006 monthly monitoring, 2nd Quarter 2006 monitoring, and January 1, 2006 to June 30, 2006 Semi-Annual operation and maintenance.**

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

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

2.0 Sampling Station Locations

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 diagrams are provided again at the end of this report.

3.0 June 2006 Monitoring and Second Quarter 2006 Monitoring

IM No. 3 monitoring activities between January 1, 2006 and May 30, 2006 are included in the following monitoring reports for IM No. 3 Treatment System discharge to injection wells under Board Order R7-2004-0103:

- *January 2006 Monitoring Report,* submitted to the Water Board February 15, 2006.
- *February 2006 Monitoring Report,* submitted to the Water Board March 15, 2006.
- *March 2006 / 1st Quarter 2006 Monitoring Report,* submitted to the Water Board April 14, 2006.
- *April 2006 Monitoring Report,* submitted to the Water Board May 15, 2006.
- *May 2006 Monitoring Report,* submitted to the Water Board June 15, 2006.

Quarterly monitoring requirements, in addition to monthly monitoring requirements, are limited to an aquatic bioassay analysis of the sludge generated during the quarter. The 1st Quarter 2006 aquatic bioassay analysis was conducted on a sludge sample collected February 15, 2006; the results were presented in the *March 2006 / 1st Quarter 2006 Monitoring Report,* submitted to the Water Board April 14, 2006. The 2nd Quarter 2006 aquatic bioassay analysis was conducted on a sludge sample collected April 5, 2006; the results were presented in the *April 2006 Monitoring Report,* submitted to the Water Board May 15, 2006.

3.1 Description of June 2006 Activities

During June 2006, the IM No. 3 groundwater treatment system treated groundwater extracted from extraction wells TW-3D and PE-1. Treatment system effluent was discharged to injection well IW-2. Figure 1 shows the locations of the IM No. 3 system extraction and injection wells.

The IM No. 3 facility treated approximately 5,612,324 gallons of groundwater from extractions wells TW-3D and PE-1 during June 2006, of which approximately 5,050,593 gallons of treated water was injected into injection well IW-2 and 540,703 gallons of reverse osmosis brine was generated for offsite disposal. The IM No. 3 facility also treated approximately 4,080 gallons of water generated from the groundwater monitoring program during June 2006. Treatment of this water at the IM No. 3 facility, under Order No. R7-2004-0103, was approved by the Regional Board on January 26, 2006.

Reverse osmosis brine was transported offsite to U.S. Filter Corporation in Los Angeles for disposal during June 2006; and two containers of solids from the IM No. 3 facility were transported to the Chemical Waste Management at the Kettleman Hills facility during June 2006.

3.2 Groundwater Treatment System Flow Rates

The June 2006 treatment system monthly average flow rates are presented in Table 2. The flow monitoring include both treatment system influent (extraction wells) and treatment system out-flow. Operation of the groundwater treatment system results in the following three out-flow components:

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

Treatment System Influent (Extraction Wells) Flow Rate

System influent flow rate was measured by flow meters at groundwater extraction wells TW-2S, and TW-3D (Figure TP-PR-10-10-03). During June 2006, extraction wells TW-3D and PE-1 operated at a target pump rate of at 135 gallons per minute (gpm) excluding periods of planned and unplanned downtime. The operational run time for the IM No. 3 groundwater extraction system (combined or individual pumping from TW-3D and PE-1) was approximately 98 percent of the June 2006 reporting period.

Periods of planned and unplanned extraction system downtime during June 2006 are summarized in the Operations and Maintenance Log provided in Appendix D.

Outflow Components:

Treatment System Effluent (Injection Wells)

The treatment system effluent flow rate was measured by flow meters in the piping into injection wells IW-2 and IW-3 (Figure TP-PR-10-10-11), and in the piping from the treated water tank T-700 to the injection wells (Figure TP-PR-10-10-04).

Reverse Osmosis Concentrate

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-PR-10-10-08).

Sludge

Two containers of solids (approximately 14 cubic yards each) were generated and shipped off-site from the IM No. 3 facility during June 2006. The sludge was shipped to Chemical Waste Management at Kettleman Hills for disposal.

3.3 Sampling and Analytical Procedures

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

The samples were stored in a cooler at 4° Celsius and transported to Truesdail or STL via courier service under chain-of-custody documentation. Truesdail transported a portion of the sludge sample to MBC Applied Environmental Sciences Laboratories (MBC) for the aquatic bioassay analysis.

Truesdail is certified by the California Department of Health Services (Certification #1237) under the State of California's Environmental Laboratory Accreditation Program. STL is certified by the California Department of Health Services (Certification #1118) under the Environmental Laboratory Accreditation Program. MBC is certified by the California Department of Health Services (Certification # 1788) under the State of California's Environmental Laboratory Accreditation Program.

All analyses were performed in accordance with the latest edition of the "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40 CFR Part 136), promulgated by the United States Environmental Protection Agency.

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

Influent, effluent, reverse osmosis concentrate, and sludge sampling was conducted in accordance with the sampling frequency required by the MRP (see Section 4.0). The June 2006 sampling analytical results are shown in Tables 3, 4, 5 and 6, respectively.

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

4.0 Monitoring Analytical Results

The analytical results and laboratory reports for the IM No. 3 groundwater treatment system monitoring program between January 1, 2006 and May 31, 2006 were provided in previous monthly reports submitted to the Water Board (see Section 3.0 for a complete listing of reports).

The June 2006 analytical results from groundwater treatment system influent, effluent, reverse osmosis concentrate, and sludge samples are presented in Tables 3, 4, 5, and 6 respectively. The June 2006 laboratory reports prepared by the certified analytical laboratories are presented in Appendix A.

In accordance with the WDR reporting requirements, the following sampling frequency schedule was followed during June 2006:

- The influent was sampled monthly, on June 15, 2006.
- The effluent was sampled weekly, on June 1, 8, 15, 21 and 28, 2006.
- The reverse osmosis concentrate was sampled monthly, on June 15, 2006**.**
- The sludge was sampled monthly on June 15, 2006. WDR requirements state that sludge is to be sampled each time it is transported offsite unless sludge is transported offsite more frequently than monthly, in which case, the sampling frequency shall be monthly.
- The sludge is required to have an aquatic bioassay test quarterly; the 1st Quarter 2006 bioassay analysis was conducted on a sludge sample collected February 15, 2006; the results were presented in the *March 2006 / 1st Quarter 2006 Monitoring Report,* submitted to the Water Board April 14, 2006. The 2nd Quarter 2006 bioassay analysis was conducted on a sludge sample collected April 5, 2006; the results were presented in the *April 2006 Monitoring Report,* submitted to the Water Board May 15, 2006.
- Additional analysis of the sludge sample collected June 15, 2006 was completed for the purpose of waste characterization; the waste characterization analytical results are included in the laboratory reports provided in Appendix A.

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

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

5.0 Semi-Annual Operation and Maintenance

Pursuant to the WDRs Operations and Maintenance Section 1:

> *The discharger shall inspect and document any operation/maintenance problems by inspecting each unit process. In addition, calibration of flow meters and equipment shall be performed in a timely manner and documented. Operation and Maintenance reports shall be submitted to the Regional Board Office twice annually.*

This section includes the Semi-Annual Operation and Maintenance Report for the IM No. 3 groundwater treatment system for the period January 1, 2006 to June 30, 2006.

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

5.1 Analytical Results

System monitoring analytical results for January 1, 2006 through May 31, 2006 were previously provided in the appropriate monthly monitoring report (see Section 3.0 for complete listing of reports). The June 2006 analytical results are summarized in Tables 3 through 7, and June 2006 laboratory reports are provided in Appendix A.

There were no occurrences of non-compliant discharge to the injection wells during the January 1, 2006 to June 30, 2006 reporting period.

5.2 Flowmeter Calibration Records

The IM No. 3 groundwater treatment system flowmeter calibration records are provided in Appendix B. The following flowmeters were used to record the flows to each area of the treatment system:

- Influent flowmeter FIT-100 which records flow from extraction well TW-2S;
- Influent flowmeter FIT-101 which records flow from extraction well TW-2D;
- Influent flowmeter FIT-102 which records flow from extraction well TW-3D;
- Effluent flowmeter FIT-1202 which records flow to injection well IW-2;
- Effluent flowmeter FIT-1203 which records flow to injection well IW-3; and

- Effluent flowmeter FIT-702 which records combined flow to injection wells IW-2 and IW-3.
- Reverse osmosis concentrate flowmeter FIT-701 recorded flow to the reverse osmosis concentrate storage tank.

Communications to injection well flow meters FIT-1202 and FIT-1203 located at the injection well heads for IW-2 and IW-3 malfunctioned November 14, 2005. Repairs were completed January 24, 2006 to restore communications to the flow meters. During the communications malfunction between November 14, 2005 and January 24, 2006, flow meter FIT-702 was used to calculate effluent volumes and flow rates. This flow meter, located at the IM No. 3 facility, measures the total flow from the treated water tank T-700 to the injection wells (Figure TP-PR-10-10-04).

5.3 Volumes of Groundwater Treated

Data regarding daily volumes of groundwater treated are provided in Appendix C. An estimated volume of 33,867,597 gallons of groundwater was extracted and treated between January 1, 2006 and June 30, 2006. Approximately 30,765,384 gallons of treated groundwater was injected back into the Alluvial Aquifer and approximately 2,970,656 gallons of water was treated offsite as reverse osmosis concentrate (i.e., brine).

The differences in the estimated influent volumes and the sum of effluent and reverse osmosis concentration volumes is approximately 0.4 percent over the six month period, which is within the range of acceptable accuracy considering the margin of error for on-site instrumentation, the water contained within the sludge, and differences in the inventory of water in the treatment system between the beginning and end of each reporting period.

Approximately 74,725 gallons of well purge water (generated during well development, monitoring well sampling, and aquifer testing) was treated at the IM No. 3 facility during the January 1, 2006 to June 30, 2006 semi-annual period. Treatment of this water at the IM No. 3 facility, in accordance with the conditions of Order No. R7-2004-0103, was approved by the Regional Board in a letter dated January 26, 2006.

5.4 Groundwater Monitoring Data

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 is issued separately to the Water Board, in conjunction with groundwater level maps of the same monitoring wells.

5.5 Residual Solids Generated (Sludge)

Ten containers of residual solids (i.e., sludge) were sampled and shipped off-site for disposal from January 1, 2006 to June 30, 2006 as a non-RCRA hazardous waste. A listing of each shipment during this period is provided below.

Date Sludge Bin Removed from Site	Approximate Quantity from Waste Manifests	Approximate Wet Weight (lbs)
6-Jan-06	15 yards	23,160
6-Feb-06	14 yards	24,560
21-Feb-06	12 yards	22,060
9-Mar-06	14 yards	23,300
31-Mar-06	14 yards	3,560
19-Apr-06	13 yards	29,840
28-Apr-06	14 yards	27,060
22-May-06	15 yards	22,400
6-Jun-06	15 yards	22,680
26-Jun-06	12 yards	20,660

Note: The approximate wet weight is provided by the disposal facility prior to disposal.

5.6 Reverse Osmosis Concentrate Generated

Data regarding daily volumes of reverse osmosis concentrate generated are provided in Appendix C, as measured by flowmeter FIT-701 (Figure TP-PR-10-10-08). Between January 1, 2006 and June 30, 2006, approximately 2,970,656 gallons of reverse osmosis concentrate was transported to U.S. Filter Corporation in Los Angeles, California for disposal based on on-site metering.

5.7 Summary of WDR Violations

No WDRs violations were identified during the January 1, 2006 to June 30, 2006 semi-annual reporting period. Therefore, no corrective actions were required.

5.8 Operation and Maintenance – Required Shutdowns

A summary of the operation or maintenance issues that required shutting down the treatment system during this semi-annual reporting period is provided in Appendix D. Records of routine maintenance are maintained onsite.

5.9 Treatment Plant Modifications

There were no treatment plant modifications that affected the capacity or performance of the extraction and treatment system during the January 1, 2006 to June 30, 2006 reporting period.

The following modifications that did not affect the capacity or performance of the extraction and treatment system were made:

- Extraction Well PE-1 was installed in March 2005 per California Department of Toxic Substances Control (DTSC) direction. A Final Work Plan to construct conveyance piping and power supply from PE-1 to the IM No. 3 treatment system was submitted to the DTSC and BLM on July 29, 2005. DTSC conditionally approved the work plan in October 5, 2005 and BLM approved the work plan on December 9, 2005. Construction of the conveyance piping and power supply began on December 12, 2005. The construction and testing of the pipeline was completed in January 2006. Extraction well PE-1 was brought into full-time service on January 26, 2006.
- A second set of ten Microfilter modules was added to the existing Micro Filter on January 15, 2006. This arrangement allows ten modules to be cleaned while the other ten modules are in service, reducing system down time.
- Non-intrusive testing of the piping of the facility reverse osmosis unit was completed in April 2006 after observing pinhole leaks develop in the piping. It was recommended that new piping with improved metallurgy be fabricated to replace the existing piping. A temporary reverse osmosis unit provided by U.S. Filter was subsequently installed on May 24, 2006 and brought into service on May 25, 2006. This allowed for the existing piping to be taken to the welder's shop for accurate measurements while fabricating the new piping. The facility reverse osmosis unit will be brought back into service in mid-July 2006 after the replacement piping is installed. The temporary reverse osmosis unit will be returned to U.S. Filter at that time.
- On March 5, 2006, the T-301A tank was drained and the air distribution header was dismantled and inspected. The sparging holes were showing signs of fouling. The original FRP piping was replaced with Duraplus® pipe. After the T301A tank was returned to service, the T-301B tank was drained, the sparging holes in the original FRP piping were cleaned of fouling, and T-301B was returned to service.

6.0 Conclusions

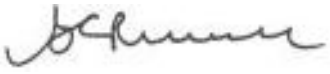
There were no exceedances of the effluent limitations during the reporting period. In addition, no incidents of non-compliance were identified during the reporting period, and no events that caused an immediate or potential threat to human health or the environment, or new releases of hazardous waste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

7.0 Certification

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

Certification Statement:

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

Signature: 

Name: Curt Russell

Company: Pacific Gas and Electric Company

Title: Topock Onsite Project Manager

Date: July 14, 2006

Tables

TABLE 1
Sampling Station Descriptions
June 2006 Report for IM No. 3 Groundwater Treatment System

Sample Station	Sample ID[a]	Location
Sampling Station A: Groundwater Treatment System Influent	SC-100B-WDR-###	Sample collected from tap on pipe into T-100 (see Figure TP-PR-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-PR-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-PR-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-PR-10-10-06).

Note:
[a] The sample event is included at the end of the sample ID (e.g. SC-100B-WDR-015).

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

Parameter	System Influent[a,d]	System Effluent[b,d]	Reverse Osmosis Concentrate[c,d]
Average Monthly Flowrate (gpm)	129.9	116.9	12.5

Note:
gpm: gallons per minute.
[a] Extraction wells TW-3D and PE-1 were operated during June 2006.
[b] All effluent was discharged into injection wells IW-2 and IW-3. Flow meter readings from FIT-702 were used in January 2006 to record system effluent due to communication difficulties with FIT-1202 at the injection wellhead.
[c] Reverse Osmosis flow meter reading from FIT-701.
[d] The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates is approximately 0.4 percent, which is within the range of acceptable accuracy considering the margin of error for onsite instrumentation, the water contained within the sludge, and differences in the inventory of water in the treatment system between the beginning and end of the reporting period.

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

Required Sampling Frequency		**Monthly**																					
Analytes / **Units** [b]		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	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L
Sample ID	**Date**																							
SC-100B-WDR-051	6/15/2006	4850	0.129	10000	7.52	1970	1950 J	ND (52)	ND (0.5)	ND (3.0)	7.90	ND (300)	1.36	95.0	2.72	ND (2.0)	ND (500)	14.8	ND (20)	3.21	0.027	682	ND (300)	ND (20)

NOTES:

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

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

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

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

WDRs Effluent Limits [b]	Ave. Monthly	NA	NA	NA	6.5-8.4	25	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Max Daily	NA	NA	NA	6.5-8.4	50	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Required Sampling Frequency		**Weekly**						**Monthly**															
Analytes		TDS	Turbidity	Specific Conductance	pH	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate (as N)	Nitrite (as N)	Sulfate	Iron	Zinc
Units [c]		mg/L	NTU	µmhos/cm	pHunits	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L
Sample ID	**Date**																						
SC-700B-WDR-049	6/1/2006	4300	ND (0.1)	7320	7.75	ND (1.0)	ND (1.0)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SC-700B-WDR-050	6/8/2006	3380	ND (0.1)	6350	8.17	ND (1.0)	ND (1.0)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SC-700B-WDR-051	6/15/2006	4030	ND (0.1)	7420	7.88	ND (1.0)	ND (2.0)J	ND (52)	ND (0.5)	ND (3.0)	ND (5.0)	ND (300)	1.10	71.3	1.97	ND (2.0)	ND (500)	6.20	21.8	2.44	0.0118	471	ND (300)	23.2
SC-700B-WDR-052	6/21/2006	4240	ND (0.1)	7450	8.18	ND (1.0)	ND (1.0)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SC-700B-WDR-053	6/28/2006	3380	0.105	7180	8.10	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

a Sampling location for all Effluent Samples is tap on pipe downstream from tank T-700 to injection well IW-2 (see attached P&ID TP-PR-10-10-04)

b In addition to the listed effluent limits, the WDRs state that the effluent shall not contain heavy metals, chemicals, pesticides or other constituents in concentrations toxic to human health.

c Units reported in this table are those units required in the WDRs

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

Required Sampling Frequency		Monthly																				
Analytes / Units [b] / Sample ID	Date	TDS mg/L	Specific Conductance µmhos/cm	pH pHunits	Chromium mg/L	Hexavalent Chromium mg/L	Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Cadmium mg/L	Cobalt mg/L	Copper mg/L	Fluoride mg/L	Lead mg/L	Molybdenum mg/L	Mercury mg/L	Nickel mg/L	Selenium mg/L	Silver mg/L	Thallium mg/L	Vanadium mg/L	Zinc mg/L
SC-701-WDR-051	6/15/2006	26400	38700	7.89	ND (0.001)	ND (0.002)J	ND (0.01)	0.0302	ND (0.3)	ND (0.0052)	ND (0.0052)	ND (0.01)	0.361	2.19	ND (0.0052)	0.0524	ND (0.0002)	0.0348	0.0265	ND (0.01)	ND (0.0052)	0.0164	0.0207

NOTES:

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

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

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

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

Required Sampling Frequency		Monthly [c]																		
Sample ID	Date / Analytes / Units [b]	Chromium mg/kg	Hexavalent Chromium mg/kg	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Cobalt mg/kg	Copper mg/kg	Fluoride mg/kg	Lead mg/kg	Molybdenum mg/kg	Mercury mg/kg	Nickel mg/kg	Selenium mg/kg	Silver mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg
SC-SLUDGE-WDR-051	6/15/2006	22000	110	ND (33)J	19.0	98.0	ND (2.8)	6.60	ND (28)	140	13.0	ND (2.8)	64.0	2.50 J	46.0	9.70	ND (5.6)	17.0 J	110	66.0

NOTES:

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

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

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

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

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

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-100B	SC-100B-WDR-051	Gary Sibble	6/15/2006	11:45:00 AM	TLI	EPA 120.1	SC	6/16/2006	Tina Acquiat
					TLI	EPA 150.1	PH	6/16/2006	Tina Acquiat
					TLI	EPA 160.1	TDS	6/22/2006	Tina Acquiat
					TLI	EPA 180.1	TRB	6/16/2006	Gautam Savani
					TLI	EPA 200.7	MN	6/16/2006	Victoria Than
					TLI	EPA 200.7	B	6/16/2006	Victoria Than
					TLI	EPA 200.7	BA	6/16/2006	Victoria Than
					TLI	EPA 200.7	AL	6/21/2006	Victoria Than
					TLI	EPA 200.7	FE	6/16/2006	Victoria Than
					TLI	EPA 200.7	NI	6/16/2006	Victoria Than
					TLI	EPA 200.7	ZN	6/16/2006	Victoria Than
					TLI	EPA 200.7	CRT	6/16/2006	Victoria Than
					TLI	EPA 200.8	PB	7/6/2006	Victoria Than
					TLI	EPA 200.8	AS	7/6/2006	Victoria Than
					TLI	EPA 200.8	CU	7/6/2006	Victoria Than
					TLI	EPA 200.8	MO	7/6/2006	Victoria Than
					TLI	EPA 200.8	SB	7/6/2006	Victoria Than
					TLI	EPA 300.0	FL	6/16/2006	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	6/16/2006	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	6/16/2006	Giawad Ghenniwa
					TLI	EPA 350.2	NH3N	6/16/2006	Iordan Stavrev
					TLI	EPA 354.1	NO2N	6/16/2006	Tina Acquiat
					TLI	EPA Method 218.6	CR6	6/16/2006	Jorge Arriaga
SC-700B	SC-700B-WDR-049	Kevin Mullin	6/1/2006	3:00:00 PM	TLI	EPA 120.1	SC	6/2/2006	Tina Acquiat
					TLI	EPA 150.1	PH	6/2/2006	Tina Acquiat
					TLI	EPA 160.1	TDS	6/2/2006	Emilia Haley
					TLI	EPA 180.1	TRB	6/1/2006	Gautam Savani
					TLI	EPA 200.7	CRT	6/5/2006	Victoria Than
					TLI	EPA Method 218.6	CR6	6/2/2006	Jorge Arriaga
SC-700B	SC-700B-WDR-050	Gary Sibble	6/8/2006	11:23:00 AM	TLI	EPA 120.1	SC	6/9/2006	Tina Acquiat
					TLI	EPA 150.1	PH	6/9/2006	Tina Acquiat
					TLI	EPA 160.1	TDS	6/13/2006	Tina Acquiat
					TLI	EPA 180.1	TRB	6/9/2006	Gautam Savani
					TLI	EPA 200.7	CRT	6/15/2006	Victoria Than
					TLI	EPA Method 218.6	CR6	6/9/2006	Jorge Arriaga
SC-700B	SC-700B-WDR-051	Gary Sibble	6/15/2006	12:00:00 PM	TLI	EPA 120.1	SC	6/16/2006	Tina Acquiat
					TLI	EPA 150.1	PH	6/16/2006	Tina Acquiat

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

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-051	Gary Sibble	6/15/2006	12:00:00 PM	TLI	EPA 160.1	TDS	6/22/2006	Tina Acquiat
					TLI	EPA 180.1	TRB	6/16/2006	Gautam Savani
					TLI	EPA 200.7	ZN	6/16/2006	Victoria Than
					TLI	EPA 200.7	AL	6/21/2006	Victoria Than
					TLI	EPA 200.7	B	6/16/2006	Victoria Than
					TLI	EPA 200.7	BA	6/16/2006	Victoria Than
					TLI	EPA 200.7	CRT	6/27/2006	Victoria Than
					TLI	EPA 200.7	FE	6/16/2006	Victoria Than
					TLI	EPA 200.7	MN	6/16/2006	Victoria Than
					TLI	EPA 200.7	NI	6/16/2006	Victoria Than
					TLI	EPA 200.8	SB	7/6/2006	Victoria Than
					TLI	EPA 200.8	PB	7/6/2006	Victoria Than
					TLI	EPA 200.8	MO	7/6/2006	Victoria Than
					TLI	EPA 200.8	AS	7/6/2006	Victoria Than
					TLI	EPA 200.8	CU	7/6/2006	Victoria Than
					TLI	EPA 300.0	FL	6/16/2006	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	6/16/2006	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	6/16/2006	Giawad Ghenniwa
					TLI	EPA 350.2	NH3N	6/16/2006	Iordan Stavrev
					TLI	EPA 354.1	NO2N	6/16/2006	Tina Acquiat
					TLI	EPA Method 218.6	CR6	6/16/2006	Jorge Arriaga
SC-700B	SC-700B-WDR-052	Erik Johannsen	6/21/2006	1:00:00 PM	TLI	EPA 120.1	SC	6/22/2006	Alex Hernandez
					TLI	EPA 150.1	PH	6/22/2006	Tina Acquiat
					TLI	EPA 160.1	TDS	6/22/2006	Tina Acquiat
					TLI	EPA 180.1	TRB	6/22/2006	Gautam Savani
					TLI	EPA 200.7	CRT	6/27/2006	Victoria Than
					TLI	EPA Method 218.6	CR6	6/22/2006	Jorge Arriaga
SC-700B	SC-700B-WDR-053	David Chaney	6/28/2006	12:30:00 PM	TLI	EPA 120.1	SC	6/29/2006	Tina Acquiat
					TLI	EPA 150.1	PH	6/29/2006	Tina Acquiat
					TLI	EPA 160.1	TDS	6/29/2006	Tina Acquiat
					TLI	EPA 180.1	TRB	6/29/2006	Gautam Savani
					TLI	EPA 200.7	CRT	6/30/2006	Victoria Than
					TLI	EPA Method 218.6	CR6	6/29/2006	Jorge Arriaga
SC-701	SC-701-WDR-051	Gary Sibble	6/15/2006	12:45:00 PM	TLI	EPA 120.1	SC	6/16/2006	Tina Acquiat
					TLI	EPA 150.1	PH	6/16/2006	Tina Acquiat
					TLI	EPA 160.1	TDS	6/22/2006	Tina Acquiat
					TLI	EPA 200.7	ZN	6/16/2006	Victoria Than

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

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-701	SC-701-WDR-051	Gary Sibble	6/15/2006	12:45:00 PM	TLI	EPA 200.7	BA	6/16/2006	Victoria Than
					TLI	EPA 200.7	CRT	6/27/2006	Victoria Than
					TLI	EPA 200.7	NI	6/16/2006	Victoria Than
					TLI	EPA 200.8	AS	7/6/2006	Victoria Than
					TLI	EPA 200.8	V	7/6/2006	Victoria Than
					TLI	EPA 200.8	CO	7/6/2006	Victoria Than
					TLI	EPA 200.8	TL	7/6/2006	Victoria Than
					TLI	EPA 200.8	SE	7/6/2006	Victoria Than
					TLI	EPA 200.8	SB	7/6/2006	Victoria Than
					TLI	EPA 200.8	PB	7/6/2006	Victoria Than
					TLI	EPA 200.8	MO	7/6/2006	Victoria Than
					TLI	EPA 200.8	CU	7/6/2006	Victoria Than
					TLI	EPA 200.8	CD	7/6/2006	Victoria Than
					TLI	EPA 200.8	AG	7/6/2006	Victoria Than
					TLI	EPA 200.8	BE	7/6/2006	Victoria Than
					TLI	EPA 245.1	HG	7/7/2006	Aksiniya Dimitrova
					TLI	EPA 300.0	FL	6/16/2006	Giawad Ghenniwa
					TLI	EPA Method 218.6	CR6	6/16/2006	Jorge Arriaga
SC-Sludge	SC-SLUDGE-WDR-051	Gary Sibble	6/15/2006	12:10:00 PM	STL	EPA 160.3	MOIST	7/6/2006	Florian Zimmermann
					TLI	EPA 300.0	FL	6/16/2006	Giawad Ghenniwa
					STL	EPA 6010B	CU	6/25/2006	Josephine Asuncion
					STL	EPA 6010B	ZN	6/25/2006	Josephine Asuncion
					STL	EPA 6010B	V	6/25/2006	Josephine Asuncion
					STL	EPA 6010B	TL	6/25/2006	Josephine Asuncion
					STL	EPA 6010B	SE	6/25/2006	Josephine Asuncion
					STL	EPA 6010B	SB	6/25/2006	Josephine Asuncion
					STL	EPA 6010B	PB	6/25/2006	Josephine Asuncion
					STL	EPA 6010B	AG	6/25/2006	Josephine Asuncion
					STL	EPA 6010B	MO	6/25/2006	Josephine Asuncion
					STL	EPA 6010B	CRT-TCLP	6/21/2006	Josephine Asuncion
					STL	EPA 6010B	CRT-STLC	6/22/2006	Josephine Asuncion
					STL	EPA 6010B	CRT	6/25/2006	Josephine Asuncion
					STL	EPA 6010B	CO	6/25/2006	Josephine Asuncion
					STL	EPA 6010B	CD	6/25/2006	Josephine Asuncion
					STL	EPA 6010B	BE	6/25/2006	Josephine Asuncion
					STL	EPA 6010B	BA	6/25/2006	Josephine Asuncion
					STL	EPA 6010B	AS	6/25/2006	Josephine Asuncion

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

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-Sludge	SC-SLUDGE-WDR-051	Gary Sibble	6/15/2006	12:10:00 PM	STL	EPA 6010B	NI	6/25/2006	Josephine Asuncion
					STL	EPA 7471A	HG	6/22/2006	Hao Ton
					STL	SW 7199	CR6	6/20/2006	Yuriy Zakhrabov
					STL	SW 7199	CR6	6/21/2006	Yuriy Zakhrabov

NOTES:

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

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

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

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

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

Figures

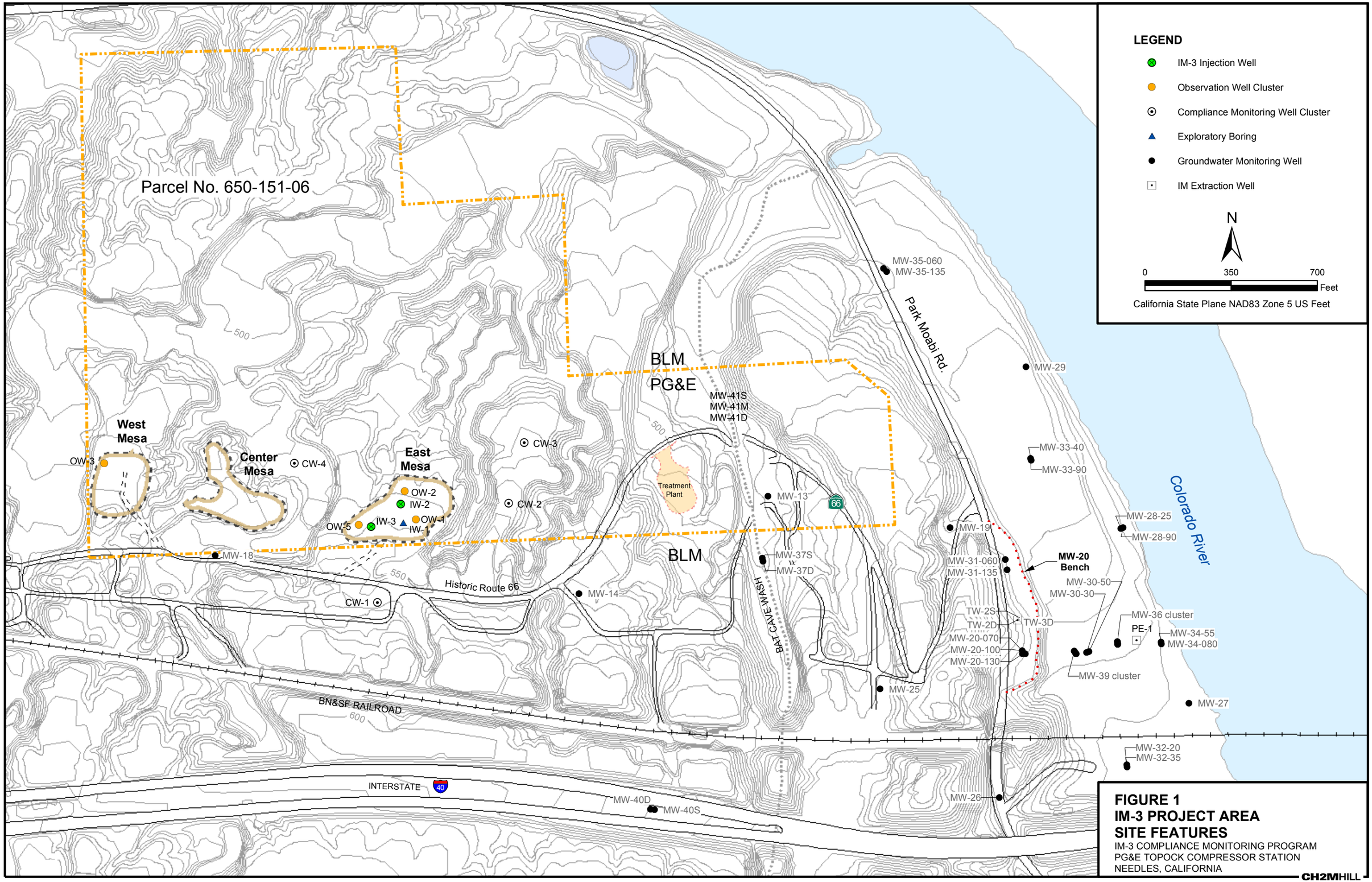


FIGURE 1
IM-3 PROJECT AREA
SITE FEATURES
IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

CONTROL PANEL LCP-100

WELL TW-3D CONTROL

WELL TW-2S CONTROL

WELL TW-2D CONTROL

WELL PE-1 CONTROL

LEAK DETECTION PANEL - 003

ALM

120V

LSH LVL RUN ON RM PRESS FLOW

LSHH

HOA

HS 102

HS 100

HS 101

HS 103

HOLD

LSH 002

LSHH 002

FUTURE

4"-RW-140-1HB

V-RW-140-01

VALVE VAULT No. 2

4"-RW-139-1HB

V-RW-139-01

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

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

NOTE 1

3"-RW-138-1HB

V-RW-138-01

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

4"-RW-105-1HB

V-RW-105-05

4" IN 8"-FUTURE

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

LSH 102A

NOTE 1

FI 102

LSH 001

LSHH 001

1" V-1390

4" x 3"

EJ-RW-105-01

4"-RW-105-1HB

Well TW-2S Flowmeter

Well TW-2D Flowmeter

Well PE-1 Flowmeter

FE 100

FIT 100

PIT 100

PE 100

LT 100

VENT

3"x2"

V-RW-105-02

MAG

3"-RW-105-1HB THROTTLING

V-RW-105-01

V-1390

VALVE VAULT No. 1

LT 101

FE 101

FIT 101

PIT 101

PE 101

V-RW-102-02

3"-RW-102-1HB THROTTLING

V-RW-102-01

LT 103

FE 103

FIT 103

PIT 103

PE 103

V-RW-108-02 THROTTLING

V-RW-108-1HB

V-RW-108-01

V-RW-130-02

V-RW-130-01

4"-RW-130-1HB

V-RW-105-06 THROTTLING

V-RW-105-03

V-RW-105-04

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

4" IN 8" RW-127-1KB

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

SPARE TO VALVE VAULT 4

NOTES 1 & 2

4" IN 8" RW-107-1KB

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

TO RAW WATER STORAGE

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

TO BAKER TANKS V-RW-131-01

V-RW-131-01

LSH 100A

LSH 101A

LSH 103A

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

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

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

NOTE 1

Well TW-3D Flowmeter

VENT

LT 102

PI 102

PIT 102

PRV 102

PE 102

FE 102

FIT 102

LSH 102

SET AT 120 PSI

V-1390

3"x2"

3"-RW-134-1HB

V-RW-134-01

MAG

4"x3"

V-RW-134-02

WELL VAULT No. 4

PI 100

LSH 100

3"-RW-103-1HB

V-RW-103-01

V-RW-103-02

WELL VAULT No. 2

PI 101

PRV 101

LSH 101

3"-RW-100-1HB

V-RW-100-01

V-RW-100-02

WELL VAULT No. 1

PI 103

PRV 103

LSH 103

4"x3"

3"-RW-132-1HB

V-RW-132-01

V-RW-132-02

WELL VAULT No. 3

LE 102

P-102

EXTRACTION WELL TW-3D

135 GPM x 248 FT. H20

LE 100

P-100

EXTRACTION WELL TW-2S

40 GPM x 180 FT. H20

LE 101

P-101

EXTRACTION WELL TW-2D

90 GPM x 245 FT. H20

LE 103

P-103

EXTRACTION WELL PE-1

40 GPM x 235 FT. H20

NOTES

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

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

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

PRINT DISTRIBUTION

DATE	
STATUS	
REV.	
CLIENT	
FIELD	
INTRA CO.	

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

SCALE NONE

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

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

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

PROJ NO. 315994

CH2MHILL

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

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

BAR IS ONE INCH
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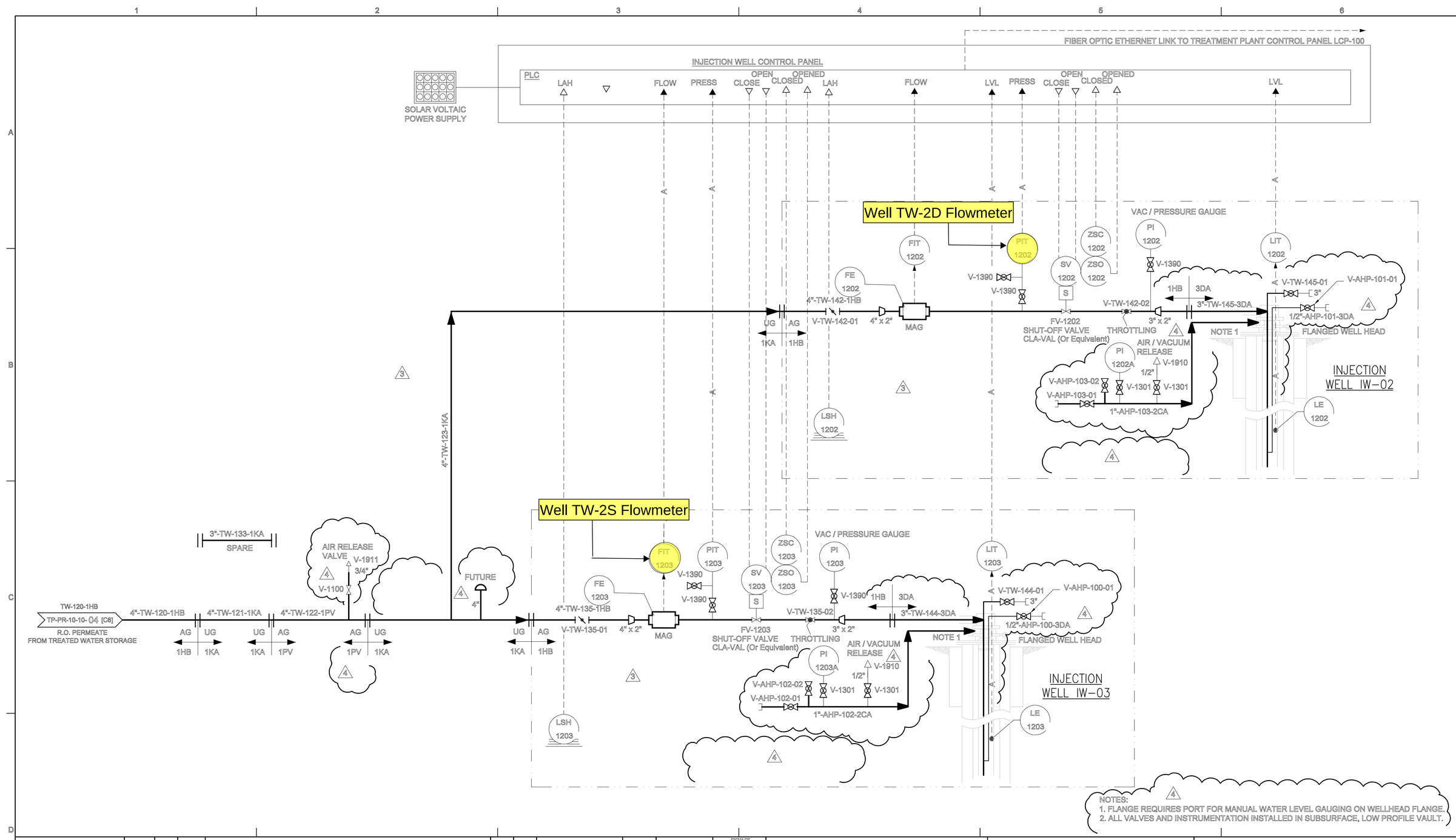
FILENAME: tppr101003.dwg PLOT DATE: 19-OCT-2005 PLOT TIME:



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

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

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

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

SCALE NONE

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

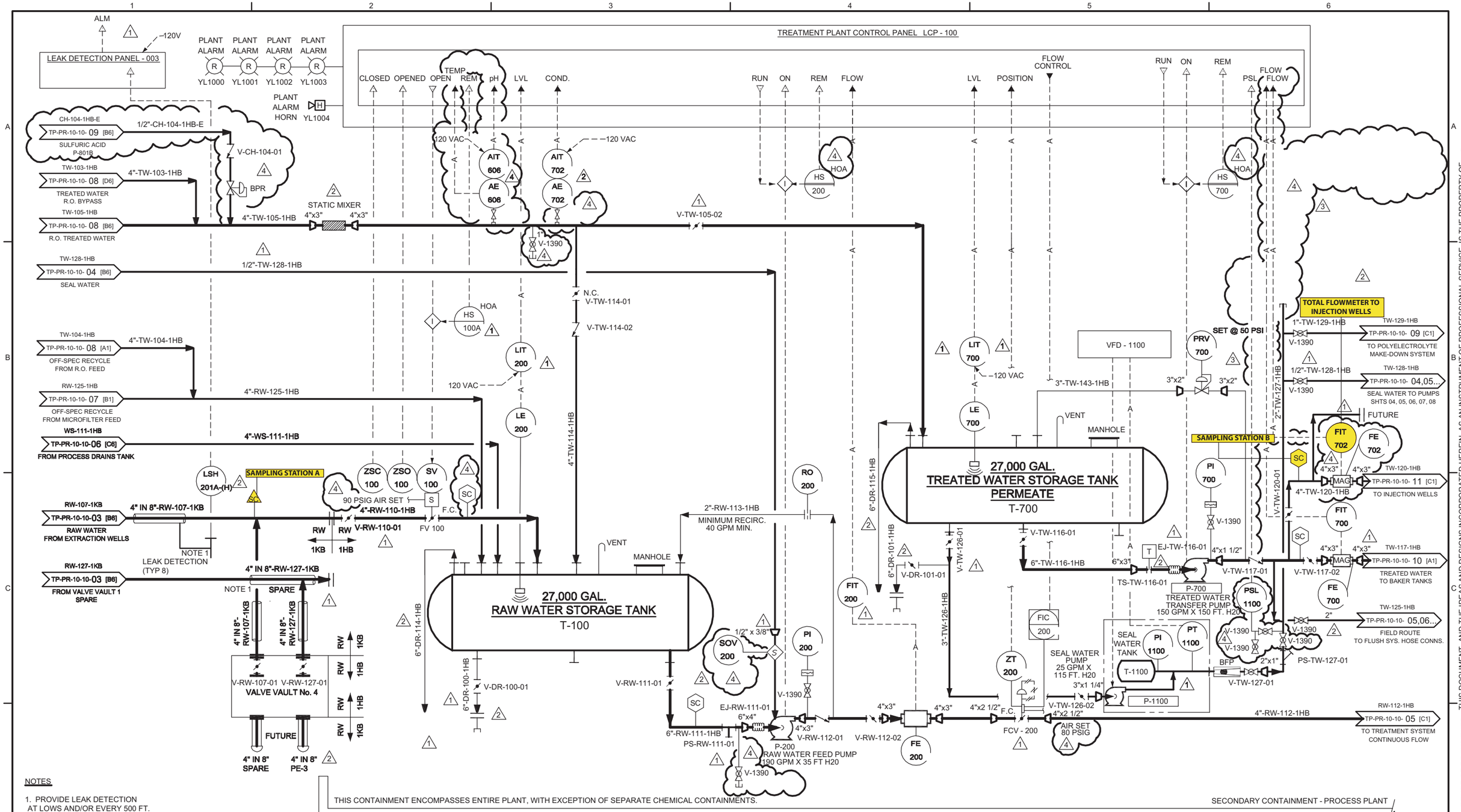
CH2MHILL

PROCESS AND INSTRUMENTATION DIAGRAM
SHEET 11
INJECTION WELLS

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

FILENAME: tppr101011.dwg PLOT DATE: 10-MAR-2005 PLOT TIME:

BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"



NOTES

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

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

SECONDARY CONTAINMENT - PROCESS PLANT

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

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

PRINT DISTRIBUTION

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

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

SCALE NONE

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

PROJ NO. 315994

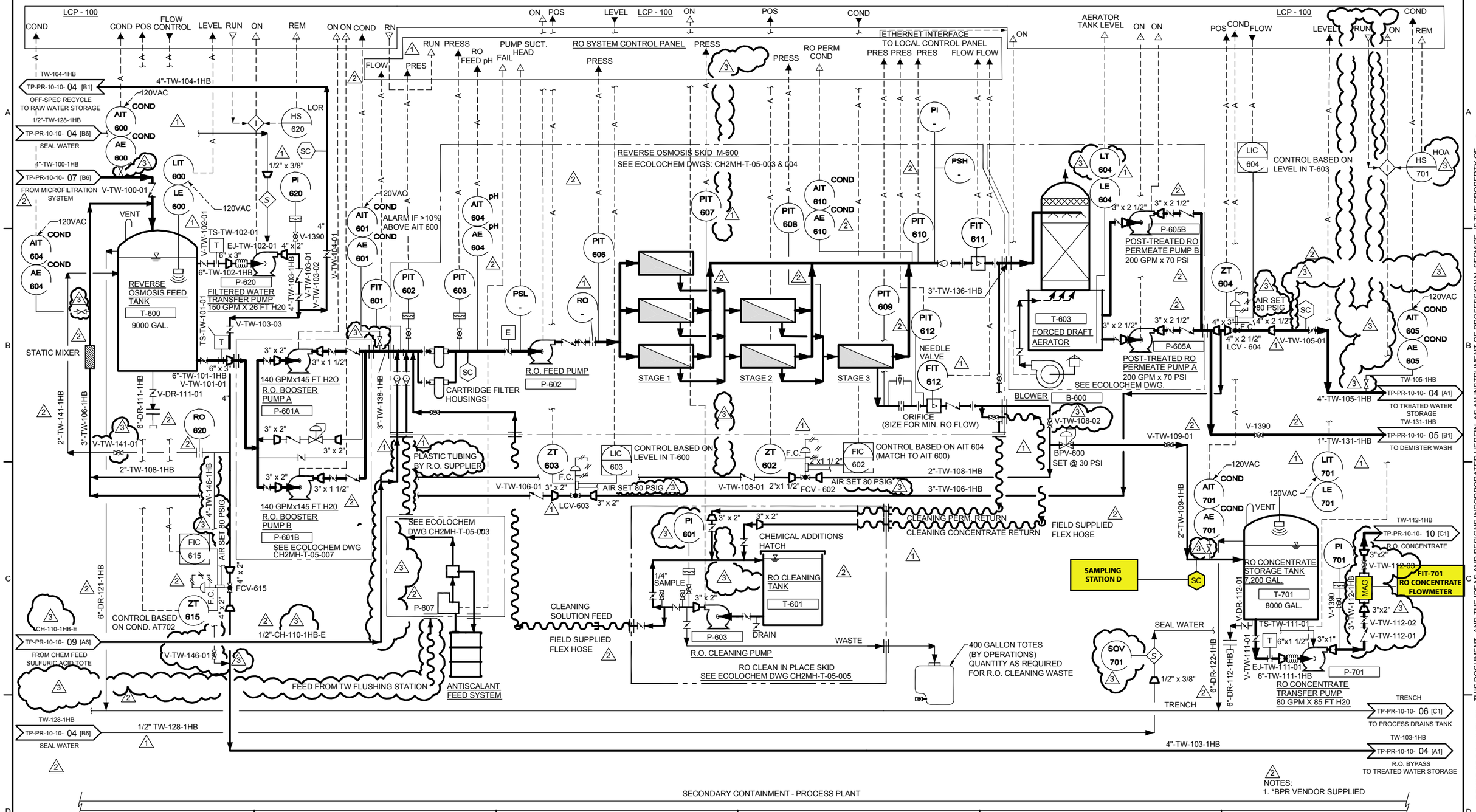
CH2MHILL

PROCESS AND INSTRUMENTATION DIAGRAM
SHEET 04
STORAGE AREA

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

BAR IS ONE INCH ON ORIGINAL DRAWING

FILENAME: tppr101004.dwg PLOT DATE: 21-SEP-2005 PLOT TIME:



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

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

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

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

SCALE NONE

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

CH2MHILL

PROCESS AND INSTRUMENTATION DIAGRAM
SHEET 08
REVERSE OSMOSIS SYSTEM

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

BAR IS ONE INCH ON ORIGINAL DRAWING

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

CONTROL PANEL

PLC

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

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

HS 400 HOA · HS 410 HOA · HS 900 LOR

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

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

TORQUE NSH 400

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

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

M-400-A · M-400-B · M-400-C

CL-400 CLARIFIER

6"-DR-107-1HB

SEE PARKSON DRAWING 10066701-01

120VAC AIT 400 TURB

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

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

120VAC LIT 402

SV 400 · SV 401 · SV 403 · SV 404 · SV 410

ZSC 400 · ZSO 400 · AE 400 TURB · ZSC 410 · ZSO 410

AIR SET 120 PSIG · F. C.

FV - 400 · FV - 410

4"-WS-102-1HB · 4"-WS-100-1HB

120 PSIG AIR SET · 1/2"

PI 401 · PE 401 · LE 402 · M-402

HS 403 HOA · PI 404 · PE 404

4" x 1" · 2" x 1"

V-WS-103-01 · V-WS-103-02

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

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

2"-WS-109-1HB

V-WS-109-01

V-WS-104-01

2"-WS-101-1HB · V-WS-101-01 · 4" x 2"

P-401
SLUDGE WITHDRAWAL PUMP
20 GPM X 30 FT. H2O

SLUDGE HOLDING TANK
6000 GAL
T-402

VENT · DECANT

2" V-1790 (TYP 5)

4" (TYP 5) AIR/SIGHT GAP · 4"

PI 403 · PE 403

3% - 5% SOLIDS

2"-WS-105-1HB · V-WS-105-01 · V-WS-108-01 · 4"-WS-108-1HB

2"-WS-107-1HB · V-WS-107-01

P-403
SEPARATOR FEED PUMP
20 GPM X 30 FT. H2O

2"-WS-106-1HB · V-WS-106-01 · 4"-WS-110-1HB

TRUCK FILL FOR OFF-SITE DISPOSAL

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

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

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

4"-WS-104-1HB

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

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

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

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

V-WS-110-01 · V-WS-111-02 · V-WS-111-03 · 4"-WS-111-1HB

V-WS-111-01 · PS-WS-111-01 · V-1390 · 1"-DR-106-1HB

V-WS-113-01 · 2"-WS-113-1HB · 4" x 2"

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

LSH 405B · FH-WS-106-01 · LSH 405A

SAMPLING STATION E

UNIT 2 CAKE CAKE · UNIT 1 CAKE CAKE

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

LSHH 405

480 VAC · LCP - 405

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

PUMPOUT VAULT

PS-405
PHASE SEPARATORS ALTERNATING DURING OPERATION

PROCESS DRAIN TANK
5,000 GAL.
T-900

P-900
PROCESS DRAIN PUMP

V-DR-113-01 · 6"-DR-113-1HB

VERTICAL WET PIT
175 GPM x 37 FT. H2O

LSH 900

T-900A
PROCESS SUMP

NOTE 1

SECONDARY CONTAINMENT - PROCESS PLANT

NOTES:

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

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

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

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

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

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

SCALE NONE

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

CH2MHILL

PROCESS AND INSTRUMENTATION DIAGRAM
SHEET 06
CLARIFICATION AND SLUDGE REMOVAL

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

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

BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

Appendix A
June 2006 Laboratory Analytical Reports

Table of Contents
TLI Laboratory Data Package
For Laboratory Number: 955424

Section 1.0

Case Narrative

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

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

June 8, 2006

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-049 PROJECT, GROUNDWATER MONITORING,

TLI NO.: 955424

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-049 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on June 1, 2006, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

The sample for Total Chromium analysis was preserved in the lab.

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services

K. R. P. Iyer

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

CC: Mr. Mark Cichy, CH2M HILL Redding CA

002

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www.truesdail.com

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

Laboratory No.: 955424
Date: June 8, 2006
Collected: June 1, 2006
Received: June 1, 2006

ANALYST LIST

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

Section 2.0

Summary Table of Final Results

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

Laboratory No.: 955424
Date Received: June 1, 2006

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

Analytical Results Summary

Lab I.D.	Sample I.D.	Sample Time	EPA 200.7 *Chromium Total* mg/L	EPA 218.6 *Chromium Hexavalent* mg/L	EPA 180.1 *Turbidity* NTU	EPA 150.1 *pH* Unit	EPA 120.1 *EC* µmhos/cm	EPA 160.1 *TDS* mg/L
955424	SC-700B-WDR-049	15:00	ND	ND	ND	7.75	7320	4300

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.

SC0

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: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248
Prep. Batch: 060506A

Laboratory No.: 955424

Date: June 8, 2006
Collected: June 1, 2006
Received: June 1, 2006
Prep/ Analyzed: June 5, 2006
Analytical Batch: 060506A

Investigation: **Total Dissolved Chromium by Inductively Coupled Argon Plasma Atomic Emission Spectrometer using EPA 200.7**

Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
955424	SC-700B-WDR-049	mg/L	EPA 200.7	11:45	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	955424	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	955381	0.00	1.04	0.0100	0.0104	0.0118	0.0104	113%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00982	0.0100	98%	90% - 110%	Yes
MRCVS#1	0.00977	0.0100	97.7%	90% - 110%	Yes
ICS	0.0102	0.0100	102%	80% - 120%	Yes
LCS	0.0106	0.0100	106%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

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

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

Laboratory No.: 955424

Date: June 8, 2006
Collected: June 1, 2006
Received: June 1, 2006
Prep/ Analyzed: June 2, 2006
Analytical Batch: 06CrH06B

Investigation: **Hexavalent Chromium by EPA 218.6**

Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
955424	SC-700B-WDR-049	15:00	13:09	mg/L	5.00	0.0010	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	955424	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	955424	0.00000	5.00	0.00100	0.00500	0.00512	0.00500	102%	90-110%	Yes
MSD	955424	0.00000	5.00	0.00100	0.00500	0.00513	0.00500	103%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00495	0.00500	99.0%	90% - 110%	Yes
MRCVS#1	0.00999	0.0100	99.9%	95% - 105%	Yes
MRCVS#2	0.00976	0.0100	97.6%	95% - 105%	Yes
MRCVS#3	0.0100	0.0100	100%	95% - 105%	Yes
MRCVS#4	0.00999	0.0100	99.9%	95% - 105%	Yes
MRCVS#5	0.00988	0.0100	98.8%	95% - 105%	Yes
LCS	0.00514	0.00500	103%	90% - 110%	Yes
LCSD	0.00518	0.00500	104%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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REPORT

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

Laboratory No.: 955424
Date: June 8, 2006
Collected: June 1, 2006
Received: June 1, 2006
Prep/ Analyzed: June 1, 2006
Analytical Batch: 06TUC06A

Investigation: **Turbidity by Method EPA 180.1**

Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
955424	SC-700B-WDR-049	15:00	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	955389-3	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	8.03	8.00	100%	90% - 110%	Yes
LCS	7.93	8.00	99.1%	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.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

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

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

Laboratory No.: 955424
Date: June 8, 2006
Collected: June 1, 2006
Received: June 1, 2006
Prep/ Analyzed: June 2, 2006
Analytical Batch: 06PH06B

Investigation:

pH by EPA 150.1

Analytical Results pH

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	MDL	RL	Results
955424	SC-700B-WDR-049	15:00	09:44	pH Units	0.0570	2.00	7.75

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	955424	7.75	7.75	0.00	± 0.100 Units	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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REPORT

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

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

Laboratory No.: 955424
Date: June 8, 2006
Collected: June 1, 2006
Received: June 1, 2006
Prep/ Analyzed: June 2, 2006
Analytical Batch: 06EC06B

Investigation:

Specific Conductivity by EPA 120.1

Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
955424	SC-700B-WDR-049	µmhos/cm	EPA 120.1	10.0	20.0	7320

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	955424	7320	7310	0.14%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	670	706	94.9%	90% - 110%	Yes
CVS#1	993	1000	99.3%	90% - 110%	Yes
LCS	669	706	94.8%	90% - 110%	Yes
LCSD	671	706	95.0%	90% - 110%	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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REPORT

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Attention: Shawn Duffy

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

Laboratory No.: 955424
Date: June 8, 2006
Collected: June 1, 2006
Received: June 1, 2006
Prep/ Analyzed: June 2, 2006
Analytical Batch: 06TDS06B

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

Analytical Results Total Dissolved Solids

TLI I.D.	Field I.D.	Units	Method	RL	Results
955424	SC-700B-WDR-049	mg/L	EPA 160.1	250	4300

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	955424	4300	4290	0.12%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	498	500	99.6%	90% - 110%	Yes
LCS 2	488	500	97.6%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

955424

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

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-049]

COC Number IM3Plant-WDR-049
TURNAROUND TIME 5 Days
DATE 6/1/06 PAGE 1 OF 1

COMPANY CH2M HILL
PROJECT NAME PG&E Topock IM3
PHONE 530-229-3303 FAX 530-339-3303
ADDRESS 155 Grand Ave Ste 1000
Oakland, CA 94612
P.O. NUMBER P.O. # 911248
SAMPLERS (SIGNATURE

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr(VI) (218.6) Lab Filtered	Title 22 Metals List (200.7, 200.8, 245.1)	EC (120.1), pH (150.1)	TDS (160.1)	Turb (180.0)	Cr - Total Metals (200.7)	Ammonia (350.2)	Anions (300.0) F	NUMBER OF CONTAINERS	COMMENTS
SC-700B-WDR-049	6/1/06	1500		X		X	X	X	X			3	
												3	TOTAL NUMBER OF CONTAINERS

ALERT!!
Level III QC

RUSH

Rec'd 06/01/06
~~SA~~ 955424
pH 7

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	Kevin Mullin	CH2M	Date/ 6-1-2006 Time 1500
Signature (Received)	L. Shabenow	TRI	Date/ Time 6/1/06 21:15
Signature (Relinquished)			Date/ Time
Signature (Received)			Date/ Time
Signature (Relinquished)			Date/ Time
Signature (Received)			Date/ Time

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

For Sample Conditions
See Form Attached

Table of Contents
TLI Laboratory Data Package

For Laboratory Number: 955642

Section 1.0

Case Narrative

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

14201 FRANKLIN AVENUE
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www.truesdail.com

June 22, 2006

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-050 PROJECT, GROUNDWATER MONITORING,

TLI NO.: 955642

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-050 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on June 8, 2006, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

No violations or nonconformance actions occurred for this data package.

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services

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

CC: Mr. Mark Ciehy, CH2M HILL Redding CA

TRUESDAIL LABORATORIES, INC.

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www.truesdail.com

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

Laboratory No.: 955642
Date: June 22, 2006
Collected: June 8, 2006
Received: June 8, 2006

ANALYST LIST

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

Section 2.0

Summary Table of Final Results

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

Laboratory No.: 955642
Date Received: June 8, 2006

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

Analytical Results Summary

Lab I.D.	Sample I.D.	Sample Time	EPA 200.7 *Chromium Total* mg/L	EPA 218.6 *Chromium Hexavalent* mg/L	EPA 180.1 *Turbidity* NTU	EPA 150.1 *pH* Unit	EPA 120.1 *EC* µmhos/cm	EPA 160.1 *TDS* mg/L
955642	SC-700B-WDR-050	11:23	ND	ND	ND	8.17	6350	3380

900

ND: Non Detected (below reporting limit)

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

Section 3.0

Final Reports

TRUESDAIL LABORATORIES, INC.

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REPORT

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

Laboratory No.: 955642

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248
Prep. Batch: 061506A

Date: June 22, 2006
Collected: June 8, 2006
Received: June 8, 2006
Prep/ Analyzed: June 15, 2006
Analytical Batch: 061506A

Investigation: **Total Dissolved Chromium by Inductively Coupled Argon Plasma Atomic Emission Spectrometer using EPA 200.7**

Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
955642	SC-700B-WDR-050	mg/L	EPA 200.7	9:44	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	955642	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	955642	0.00	1.04	0.0100	0.0104	0.0101	0.0104	97.1%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00995	0.0100	99.5%	90% - 110%	Yes
MRCVS#1	0.00961	0.0100	96.1%	90% - 110%	Yes
MRCVS#2	0.00994	0.0100	99.4%	90% - 110%	Yes
ICS	0.0109	0.0100	109%	80% - 120%	Yes
LCS	0.00992	0.0100	99.2%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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www.truesdail.com

REPORT

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

Laboratory No.: 955642

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

Date: June 22, 2006
Collected: June 8, 2006
Received: June 8, 2006
Prep/ Analyzed: June 9, 2006
Analytical Batch: 06CrH06I

Investigation: **Hexavalent Chromium by EPA 218.6**

Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
955642	SC-700B-WDR-050	11:23	06:56	mg/L	5.00	0.0010	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	955642	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	955642	0.00	1.06	0.00100	0.00106	0.00122	0.00106	115%	90-110%	No
MSD	955642	0.00	5.00	0.00100	0.00500	0.00521	0.00500	104%	90-110%	Yes
MS	955642	0.00	5.00	0.00100	0.0050	0.00535	0.0050	107%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00502	0.00500	100%	90% - 110%	Yes
MRCVS#1	0.00982	0.0100	98.2%	95% - 105%	Yes
LCS	0.00515	0.00500	103%	90% - 110%	Yes
LCSD	0.00513	0.00500	103%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

QCR

TRUESDAIL LABORATORIES, INC.

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REPORT

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

Laboratory No.: 955642
Date: June 22, 2006
Collected: June 8, 2006
Received: June 8, 2006
Prep/ Analyzed: June 9, 2006
Analytical Batch: 06TUC06I

Investigation: **Turbidity by Method EPA 180.1**

Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
955642	SC-700B-WDR-050	11:23	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	955634-2	0.149	0.150	0.67%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	8.07	8.00	101%	90% - 110%	Yes
LCS	8.01	8.00	100%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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REPORT

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

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

Laboratory No.: 955642
Date: June 22, 2006
Collected: June 8, 2006
Received: June 8, 2006
Prep/ Analyzed: June 9, 2006
Analytical Batch: 06PH06H

Investigation:

pH by EPA 150.1

Analytical Results pH

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	MDL	RL	Results
955642	SC-700B-WDR-050	11:23	10:10	pH Units	0.0570	2.00	8.17

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	955637-1	2.08	2.08	0.00	± 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.03	7.00	0.03	± 0.100 Units	Yes
LCS #1	7.03	7.00	0.03	± 0.100 Units	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

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

Laboratory No.: 955642

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

Date: June 22, 2006
Collected: June 8, 2006
Received: June 8, 2006
Prep/ Analyzed: June 9, 2006
Analytical Batch: 06EC06D

Investigation:

Specific Conductivity by EPA 120.1

Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
955642	SC-700B-WDR-050	µmhos/cm	EPA 120.1	10.0	20.0	6350

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	955642	6350	6360	0.16%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	682	706	96.6%	90% - 110%	Yes
CVS#1	940	1000	94.0%	90% - 110%	Yes
CVS#2	938	994	94.4%	90% - 110%	Yes
LCS	669	706	94.8%	90% - 110%	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

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

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

Laboratory No.: 955642
Date: June 22, 2006
Collected: June 8, 2006
Received: June 8, 2006
Prep/ Analyzed: June 13, 2006
Analytical Batch: 06TDS06E

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

Analytical Results Total Dissolved Solids

TLI I.D.	Field I.D.	Units	Method	RL	Results
955642	SC-700B-WDR-050	mg/L	EPA 160.1	500	3380

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	955642	3380	3320	0.90%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	520	500	104%	90% - 110%	Yes
LCS 2	499	500	99.8%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.
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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-050]

955642

COC Number IM3Plant-WDR-050
TURNAROUND TIME 10 Days
DATE 6/8/06 PAGE 1 OF 1

COMPANY CH2M HILL
PROJECT NAME PG&E Topock IM3
PHONE 530-229-3303 FAX 530-339-3303
ADDRESS 155 Grand Ave Ste 1000
Oakland, CA 94612
P.O. NUMBER P.O. # 911248
SAMPLERS (SIGNATURE

Rec'd 06/08/06
955642

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr(VI) (218.6) Lab Filtered	Title 22 Metals List (200.7, 200.8, 245.1)	EC (120.1), pH (150.1)	TDS (160.1)	Turb (180.0)	Cr - Total Metals (200.7)	Ammonia (350.2)	Anions (300.0) F	NUMBER OF CONTAINERS	COMMENTS
SC-700B-WDR-050	6/8/06	1123		X		X	X	X	X			4	pH = 2
												4	TOTAL NUMBER OF CONTAINERS

ALERT!! Level III QC

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	CINDY SIBBLE	ONE TOPOCK IM-3	6/08/06 1355
Signature (Received)	Shane Stelle	TLI	6/8/06 19:25
Signature (Relinquished)			
Signature (Received)			
Signature (Relinquished)			
Signature (Received)			

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

For Sample Conditions See Form Attached

Table of Contents
TLI Laboratory Data Package

For Laboratory Number: 955857

Section 1.0

Case Narrative

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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www.truesdail.com

July 7, 2006

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-051 PROJECT, GROUNDWATER MONITORING,

TLI NO.: 955857

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-051 project groundwater monitoring. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on June 15, 2006, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

The samples for Hexavalent Chromium analysis were inadvertently delivered to EMAX Laboratories by the courier and had to be retrieved by Truesdail Personnel. Due to the late arrival of the samples, all runs of SDG's 955857-1 and 955857-2 were out of holding time. The straight run for 955857-3 was within holding time but the analysis at a 10X dilution and the associated matrix spike was out of holding time.

The samples for metals analysis were received with a pH of 7 and therefore were preserved in the lab.

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services

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

CC: Mr. Mark Cichy, CH2M HILL Redding CA

TRUESDAIL LABORATORIES, INC.

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

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: NA

Laboratory No.: 955857
Date: July 7, 2006
Collected: June 15, 2006
Received: June 15, 2006

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Tina Acquiat
EPA 150.1	pH	Tina Acquiat
EPA 160.1	Total Dissolved Solids	Tina Acquiat
EPA 180.1	Turbidity	Gautam Savani
EPA 300.0	Anions	Giawad Ghenniwa
EPA 350.2	Ammonia	Iordan Stavrev
EPA 354.1	Nitrite as N	Tina Acquiat
EPA 200.7	Metals by ICP	Victoria Than
EPA 200.8	Metals by ICP/MS	Victoria Than
EPA 245.1	Mercury	Aksiniya Dimitrova
EPA 218.6	Hexavalent Chromium	Jorge Arriaga

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

Laboratory No.: 955857
Date Received: June 15, 2006

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Analytical Results Summary

Lab I.D.	Sample I.D.	Sample Time	EPA 150.1 *pH*	EPA 120.1 *EC*	EPA 160.1 *TDS*	EPA 180.1 *Turbidity*	EPA 218.6 *Hexavalent Chromium*	EPA 350.2 *Ammonia*
			Units	*µmhos/cm*	*mg/L*	*NTU*	*mg/L*	*mg/L*
955857-1	SC-700B-WDR-051	12:00	7.88	7420	4030	ND	ND J	ND
955857-2	SC-100B-WDR-051	11:45	7.52	10000	4850	0.129	1.95 J	ND
955857-3	SC-701-WDR-051	12:45	7.89	38700	26400	---	ND J	---

Lab I.D.	Sample I.D.	Sample Time	EPA 300.0 *Fluoride*	EPA 300.0 *Sulfate*	EPA 300.0 *Nitrate as N*	EPA 354.1 *Nitrite as N*
			mg/L	*mg/L*	*mg/L*	*mg/L*
955857-1	SC-700B-WDR-051	12:00	1.97	471	2.44	0.0118
955857-2	SC-100B-WDR-051	11:45	2.72	682	3.21	0.0270
955857-3	SC-701-WDR-051	12:45	2.19	---	---	---

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.

C60

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: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 955857
Date Received: June 15, 2006

Analytical Results Summary

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

Lab I.D.	Sample ID	Date of Analysis: / Time Coll.	Aluminum EPA 200.7 06/21/06 mg/L	Antimony EPA 200.8 07/06/06 mg/L	Arsenic EPA 200.8 07/06/06 mg/L	Barium EPA 200.7 04/11/06 mg/L	Beryllium EPA 200.8 07/06/06 mg/L	Cadmium EPA 200.8 07/06/06 mg/L	Chromium EPA 200.7 06/27/06 mg/L	Cobalt EPA 200.8 07/06/06 mg/L	Copper EPA 200.8 07/06/06 mg/L	Lead EPA 200.8 07/06/06 mg/L
955857-1	SC-700B-WDR-051	12:00	ND	ND	ND	ND	---	---	ND	---	0.0713	ND
955857-2	SC-100B-WDR-051	11:45	ND	ND	0.0079	ND	---	---	1.97	---	0.0950	ND
955857-3	SC-701-WDR-051	12:45	---	ND	0.0302	ND	ND	ND	ND	ND	0.3610	ND

Lab I.D.	Sample ID	Date of Analysis: / Time Coll.	Manganese EPA 200.7 04/11/06 mg/L	Mercury EPA 245.1 07/07/06 mg/L	Molybdenum EPA 200.8 07/06/06 mg/L	Nickel EPA 200.7 04/11/06 mg/L	Selenium EPA 200.8 07/06/06 mg/L	Silver EPA 200.8 07/06/06 mg/L	Thallium EPA 200.8 07/06/06 mg/L	Vanadium EPA 200.8 07/06/06 mg/L	Zinc EPA 200.7 06/16/06 mg/L
955857-1	SC-700B-WDR-051	12:00	ND	---	0.0062	0.0218	---	---	---	---	0.0232
955857-2	SC-100B-WDR-051	11:45	ND	---	0.0148	ND	---	---	---	---	ND
955857-3	SC-701-WDR-051	12:45	---	ND	0.0524	0.0348	0.0265	ND	ND	0.0164	0.0207

Lab I.D.	Sample ID	Date of Analysis: / Time Coll.	Boron EPA 200.7 06/16/06 mg/L	Iron EPA 200.7 04/11/06 mg/L
955857-1	SC-700B-WDR-051	12:00	1.10	ND
955857-2	SC-100B-WDR-051	11:45	1.36	ND
955857-3	SC-701-WDR-051	12:45	---	---

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

90

Section 3.0

Final Reports

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REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 955857
Date: July 7, 2006
Collected: June 15, 2006
Received: June 15, 2006
Prep/ Analyzed: June 16, 2006
Analytical Batch: 06PH06M

Investigation: **pH by EPA 150.1**

Analytical Results pH

TLI I.D.	Field I.D.	Run Time	Units	MDL	RL	Results
955857-1	SC-700B-WDR-051	08:22	pH Units	0.0570	2.00	7.88
955857-2	SC-100B-WDR-051	08:25	pH Units	0.0570	2.00	7.52
955857-3	SC-701-WDR-051	08:28	pH Units	0.0570	2.00	7.89

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	955857-3	7.89	7.89	0.00	± 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.01	7.00	0.01	± 0.100 Units	Yes
LCS #1	7.02	7.00	0.02	± 0.100 Units	Yes
LCS #2	7.02	7.00	0.02	± 0.100 Units	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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REPORT

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

Laboratory No.: 955857

Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Date: July 7, 2006
Collected: June 15, 2006
Received: June 15, 2006
Prep/ Analyzed: June 16, 2006
Analytical Batch: 06EC06J

Investigation:

Specific Conductivity by EPA 120.1

Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
955857-1	SC-700B-WDR-051	µmhos/cm	EPA 120.1	10.0	20.0	7420
955857-2	SC-100B-WDR-051	µmhos/cm	EPA 120.1	10.0	20.0	10000
955857-3	SC-701-WDR-051	µmhos/cm	EPA 120.1	10.0	20.0	38700

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	955857-3	38700	38800	0.26%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	672	706	95.2%	90% - 110%	Yes
CVS#1	944	1000	94.4%	90% - 110%	Yes
LCS	674	706	95.5%	90% - 110%	Yes
LCSD	674	706	95.5%	90% - 110%	Yes

Respectfully submitted,
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REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 955857
Date: July 7, 2006
Collected: June 15, 2006
Received: June 15, 2006
Prep/ Analyzed: June 22, 2006
Analytical Batch: 06TDS06G

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

Analytical Results Total Dissolved Solids

TLI I.D.	Field I.D.	Units	Method	RL	Results
955857-1	SC-700B-WDR-051	mg/L	EPA 160.1	250	4030
955857-2	SC-100B-WDR-051	mg/L	EPA 160.1	312	4850
955857-3	SC-701-WDR-051	mg/L	EPA 160.1	1250	26400

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	955857-1	4030	4140	1.35%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	494	500	98.8%	90% - 110%	Yes

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

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REPORT

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

Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 955857
Date: July 7, 2006
Collected: June 15, 2006
Received: June 15, 2006
Prep/ Analyzed: June 16, 2006
Analytical Batch: 06TUC06M

Investigation: **Turbidity by Method EPA 180.1**

Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
955857-1	SC-700B-WDR-051	12:00	NTU	1.00	0.100	ND
955857-2	SC-100B-WDR-051	11:45	NTU	1.00	0.100	0.129

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	955841-4	0.125	0.120	4.08%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.85	8.00	98.1%	90% - 110%	Yes
LCS	7.90	8.00	98.8%	90% - 110%	Yes

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

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REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA
Prep. Batch: 06CrH06Q

Laboratory No.: 955857
Date: July 7, 2006
Collected: June 15, 2006
Received: June 15, 2006
Prep/ Analyzed: June 16, 2006
Analytical Batch: 06CrH06Q

Investigation: **Hexavalent Chromium by IC Using Method EPA 218.6**

Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
955857-1	SC-700B-WDR-051	12:00	15:33	mg/L	10.0	0.0020	ND J
955857-2	SC-100B-WDR-051	11:45	14:05	mg/L	100	0.0200	1.95 J
955857-3	SC-701-WDR-051	12:45	14:43	mg/L	10.0	0.0020	ND J

QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	955857-2	1.95	1.95	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	955857-1	0.00	1.06	0.00100	0.00106	0.00117	0.00106	110%	90-110%	No
MS	955857-1	0.00	10.0	0.00100	0.0100	0.0101	0.0100	101%	90-110%	Yes
MS	955857-2	1.95	100	0.0200	2.00	3.89	3.95	97.0%	90-110%	Yes
MS	955857-3	0.00	10.0	0.00100	0.0100	0.0106	0.0100	106%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00498	0.00500	99.6%	90% - 110%	Yes
MRCVS#1	0.0103	0.0100	103%	95% - 105%	Yes
MRCVS#2	0.0103	0.0100	103%	95% - 105%	Yes
MRCVS#3	0.0102	0.0100	102%	95% - 105%	Yes
MRCVS#4	0.0101	0.0100	101%	95% - 105%	Yes
MRCVS#5	0.00961	0.0100	96.1%	95% - 105%	Yes
MRCVS#6	0.00961	0.0100	96.1%	95% - 105%	Yes
LCS	0.00511	0.00500	102%	90% - 110%	Yes
LCSD	0.00508	0.00500	102%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
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Mona Nassimi, Manager
Analytical Services

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REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 955857
Date: July 7, 2006
Collected: June 15, 2006
Received: June 15, 2006
Prep/ Analyzed: June 16, 2006
Analytical Batch: 06NH306C

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
955857-1	SC-700B-WDR-051	12:00	EPA 350.2	mg/L	1.00	0.500	ND
955857-2	SC-100B-WDR-051	11:45	EPA 350.2	mg/L	1.00	0.500	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	955857-2	ND	ND	0.0%	≤ 20%	Yes

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	955857-1	0.00	1.00	10.0	10.0	9.90	10.0	99.0%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	9.90	10.0	99.0%	90% - 110%	Yes

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

Respectfully submitted,
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Analytical Services

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REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 955857
Date: July 7, 2006
Collected: June 15, 2006
Received: June 15, 2006
Prep/ Analyzed: June 16, 2006
Analytical Batch: 06AN06O

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
955857-1	SC-700B-WDR-051	12:00	17:59	mg/L	1.00	0.200	1.97
955857-2	SC-100B-WDR-051	11:45	18:10	mg/L	1.00	0.200	2.72
955857-3	SC-701-WDR-051	12:45	20:49	mg/L	5.00	1.00	2.19

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	955857-1	1.97	1.95	1.02%	≤ 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	955857-1	1.97	1.00	4.00	4.00	5.85	5.97	97.0%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.16	4.00	104%	90% - 110%	Yes
MRCVS#1	3.19	3.00	106%	90% - 110%	Yes
MRCVS#2	3.18	3.00	106%	90% - 110%	Yes
LCS	4.14	4.00	104%	90% - 110%	Yes
LCSD	4.17	4.00	104%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 955857
Date: July 7, 2006
Collected: June 15, 2006
Received: June 15, 2006
Prep/ Analyzed: June 16, 2006
Analytical Batch: 06AN06O

Investigation: **Sulfate by Method EPA 300.0**

Analytical Results Sulfate

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
955857-1	SC-700B-WDR-051	12:00	18:38	mg/L	25.0	12.5	471
955857-2	SC-100B-WDR-051	11:45	18:49	mg/L	50.0	25.0	682

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	955857-2	682	680	0.29%	≤ 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	955857-2	682	50.0	20.0	1000	1690	1682	101%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	20.2	20.0	101%	90% - 110%	Yes
MRCVS#1	15.2	15.0	101%	90% - 110%	Yes
MRCVS#2	15.3	15.0	102%	90% - 110%	Yes
LCS	19.7	20.0	98.5%	90% - 110%	Yes
LCSD	19.9	20.0	99.5%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

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REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 955857
Date: July 7, 2006
Collected: June 15, 2006
Received: June 15, 2006
Prep/ Analyzed: June 16, 2006
Analytical Batch: 06AN06O

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
955857-1	SC-700B-WDR-051	12:00	17:59	mg/L	1.00	0.200	2.44
955857-2	SC-100B-WDR-051	11:45	18:10	mg/L	1.00	0.200	3.21

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	955857-1	2.44	2.44	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	955857-1	2.44	1.00	4.00	4.00	6.38	6.44	98.5%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.02	4.00	101%	90% - 110%	Yes
MRCVS#1	3.03	3.00	101%	90% - 110%	Yes
MRCVS#2	3.03	3.00	101%	90% - 110%	Yes
LCS	4.02	4.00	101%	90% - 110%	Yes
LCSD	4.04	4.00	101%	90% - 110%	Yes

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

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REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 955857
Date: July 7, 2006
Collected: June 15, 2006
Received: June 15, 2006
Prep/ Analyzed: June 16, 2006
Analytical Batch: 06NO206F

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

Analytical Results for Nitrite as N

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
955857-1	SC-700B-WDR-051	12:00	14:58	mg/L	1.00	0.0050	0.0118
955857-2	SC-100B-WDR-051	11:45	15:02	mg/L	1.00	0.0050	0.0270

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	955857-1	0.0118	0.0115	2.58%	< 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	955813-10	0.0126	1.00	0.100	0.100	0.114	0.113	101%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0935	0.0900	104%	90% - 110%	Yes
MRCVS#1	0.0921	0.100	92.1%	90% - 110%	Yes
MRCVS#2	0.0921	0.100	92.1%	90% - 110%	Yes
LCS	0.191	0.180	106%	90% - 110%	Yes

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Oakland, CA 94612

Attention: Shawn Duffy

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

Laboratory No.: 955857
Reported: July 7, 2006
Collected: June 15, 2006
Received: June 15, 2006
Analyzed: June 16 - July 7, 2006

Analytical Results

SAMPLE ID: SC-700B-WDR-051 **Time Collected:** 12:00 **LAB ID:** 955857-1

Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Aluminum	EPA 200.7	ND	1.04	mg/L	0.0520	062106C	06/21/06	19:12
Antimony	EPA 200.8	ND	2.08	mg/L	0.0030	070606A	07/06/06	15:10
Arsenic	EPA 200.8	ND	2.08	mg/L	0.0050	070606A	07/06/06	15:10
Barium	EPA 200.7	ND	1.04	mg/L	0.300	061606B	06/16/06	15:16
Chromium	EPA 200.7	ND	1.04	mg/L	0.0010	062706a	06/27/06	09:40
Copper	EPA 200.8	0.0713	2.08	mg/L	0.0100	070606A	07/06/06	15:10
Lead	EPA 200.8	ND	2.08	mg/L	0.0020	070606A	07/06/06	15:10
Manganese	EPA 200.7	ND	1.04	mg/L	0.500	061606B	06/16/06	15:16
Molybdenum	EPA 200.8	0.0062	2.08	mg/L	0.0050	070606A	07/06/06	15:10
Nickel	EPA 200.7	0.0218	1.04	mg/L	0.0200	061606B	06/16/06	15:16
Zinc	EPA 200.7	0.0232	1.04	mg/L	0.0200	061606B	06/16/06	15:16
Boron	EPA 200.7	1.10	1.04	mg/L	0.200	061606B	06/16/06	15:16
Iron	EPA 200.7	ND	1.04	mg/L	0.300	061606B	06/16/06	15:16

SAMPLE ID: SC-100B-WDR-051 **Time Collected:** 11:45 **LAB ID:** 955857-2

Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Aluminum	EPA 200.7	ND	1.04	mg/L	0.0520	062106C	06/21/06	19:16
Antimony	EPA 200.8	ND	2.08	mg/L	0.0030	070606A	07/06/06	15:16
Arsenic	EPA 200.8	0.0079	2.08	mg/L	0.0050	070606A	07/06/06	15:16
Barium	EPA 200.7	ND	1.04	mg/L	0.300	061606B	06/16/06	15:20
Chromium	EPA 200.7	1.97	1.04	mg/L	0.0104	061606B	06/16/06	15:20
Copper	EPA 200.8	0.0950	2.08	mg/L	0.0100	070606A	07/06/06	15:16
Lead	EPA 200.8	ND	2.08	mg/L	0.0020	070606A	07/06/06	15:16
Manganese	EPA 200.7	ND	1.04	mg/L	0.500	061606B	06/16/06	15:20
Molybdenum	EPA 200.8	0.0148	2.08	mg/L	0.0050	070606A	07/06/06	15:16
Nickel	EPA 200.7	ND	1.04	mg/L	0.0200	061606B	06/16/06	15:20
Zinc	EPA 200.7	ND	1.04	mg/L	0.0200	061606B	06/16/06	15:20
Boron	EPA 200.7	1.36	1.04	mg/L	0.200	061606B	06/16/06	15:20
Iron	EPA 200.7	ND	1.04	mg/L	0.300	061606B	06/16/06	15:20

SAMPLE ID: SC-701-WDR-051		Time Collected: 12:45				LAB ID: 955857-3		
Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Antimony	EPA 200.8	ND	10.4	mg/L	0.0104	070606A	07/06/06	15:21
Arsenic	EPA 200.8	0.0302	10.4	mg/L	0.0104	070606A	07/06/06	15:21
Barium	EPA 200.7	ND	1.04	mg/L	0.300	061606B	06/16/06	15:33
Beryllium	EPA 200.8	ND	10.4	mg/L	0.0052	070606A	07/06/06	15:21
Cadmium	EPA 200.8	ND	10.4	mg/L	0.0052	070606A	07/06/06	15:21
Chromium	EPA 200.7	ND	1.04	mg/L	0.0010	062706A	06/27/06	09:53
Cobalt	EPA 200.8	ND	10.4	mg/L	0.0104	070606A	07/06/06	15:21
Copper	EPA 200.8	0.361	10.4	mg/L	0.0104	070606A	07/06/06	15:21
Lead	EPA 200.8	ND	10.4	mg/L	0.0052	070606A	07/06/06	15:21
Mercury	EPA 245.1	ND	1.00	mg/L	0.00020	07Hg06B	07/07/06	NA
Molybdenum	EPA 200.8	0.0524	10.4	mg/L	0.0104	070606A	07/06/06	15:21
Nickel	EPA 200.7	0.0348	1.04	mg/L	0.0200	061606B	06/16/06	15:33
Selenium	EPA 200.8	0.0265	10.4	mg/L	0.0208	070606A	07/06/06	15:21
Silver	EPA 200.8	ND	10.4	mg/L	0.0104	070606A	07/06/06	15:21
Thallium	EPA 200.8	ND	10.4	mg/L	0.0052	070606A	07/06/06	15:21
Vanadium	EPA 200.8	0.0164	10.4	mg/L	0.0104	070606A	07/06/06	15:21
Zinc	EPA 200.7	0.0207	1.04	mg/L	0.0200	061606B	06/16/06	15:33

ND: Not detected,or below limit of detection.

DF: Dilution factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES
Established 1931
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(714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Samples: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 955857
Reported: July 7, 2006
Collected: June 15, 2006
Received: June 15, 2006

Quality Control/Quality Assurance Report

				DIGESTED BLANK		IPC				LFB			
Parameter	Method	Batch	Units	LRB	RL	Observed Value	TRUE Value	% Rec	Control Limits	Observed Value	TRUE Value	% Rec	Control Limits %
Mercury	EPA 245.1	07Hg06B	mg/L	ND	0.00020	0.00049	0.00050	98.0%	95-105%	0.00048	0.00050	96.0%	85-115%

			LABORATORY CONTROL SAMPLES				SAMPLE DUPLICATES				
Parameter	Method	Units	LCS Obs.	LCS Theo.	% Rec.	Control Limits	SAMPLE ID	SAMPLE RESULT	DUP RESULT	% RPD	Precision Control Limits %
Mercury	EPA 245.1	mg/L	0.00050	0.00050	100%	90-110%	955857-3	ND	ND	0.00%	≤20

MATRIX SPIKE

Sample ID	Parameter	Method	Units	Sample Result	DF	Spike Level	Total Amt. of Spike	Theo. Value	MS Obs.	% Rec.	Accuracy Control Limits %
955857-3	Mercury	EPA 245.1	mg/L	0.00	1.00	0.00050	0.00050	0.00050	0.00059	118%	75-125%

050

				BLANK		MRCCS				MRCVS			
Parameter	Method	Batch	Units	Blank	RL	Observed Value	TRUE Value	% Rec	Control Limits	Observed Value	TRUE Value	% Rec	Control Limits %
Aluminum	EPA 200.7	062106C	mg/L	ND	0.0500	5.19	5.00	104%	95-105%	5.29	5.00	106%	90-110%
Antimony	EPA 200.8	070606A	mg/L	ND	0.0030	0.0506	0.0500	101%	95-105%	0.0493	0.0500	98.6%	90-110%
Arsenic	EPA 200.8	070606A	mg/L	ND	0.0050	0.0503	0.0500	101%	95-105%	0.0493	0.0500	98.6%	90-110%
Barium	EPA 200.7	061606B	mg/L	ND	0.300	4.88	5.00	97.6%	95-105%	4.66	5.00	93.2%	90-110%
Beryllium	EPA 200.8	070606A	mg/L	ND	0.0010	0.0503	0.0500	101%	95-105%	0.0476	0.0500	95.2%	90-110%
Cadmium	EPA 200.8	070606A	mg/L	ND	0.0020	0.0510	0.0500	102%	95-105%	0.0485	0.0500	97.0%	90-110%
Chromium	EPA 200.7	061606B	mg/L	ND	0.0010	0.0104	0.0100	104%	95-105%	0.0100	0.0100	100%	90-110%
Chromium	EPA 200.7	061606B	mg/L	ND	0.0050	4.97	5.00	99.4%	95-105%	4.96	5.00	99.2%	90-110%
Cobalt	EPA 200.8	070606A	mg/L	ND	0.0050	0.0499	0.0500	99.8%	95-105%	0.0498	0.0500	99.6%	90-110%
Copper	EPA 200.8	070606A	mg/L	ND	0.0100	0.0506	0.0500	101%	95-105%	0.0519	0.0500	104%	90-110%
Lead	EPA 200.8	070606A	mg/L	ND	0.0020	0.0502	0.0500	100%	95-105%	0.0464	0.0500	92.8%	90-110%
Manganese	EPA 200.7	061606B	mg/L	ND	0.500	4.86	5.00	97.2%	95-105%	4.84	5.00	96.8%	90-110%
Molybdenum	EPA 200.8	070606A	mg/L	ND	0.0050	0.0509	0.0500	102%	95-105%	0.0484	0.0500	96.8%	90-110%
Nickel	EPA 200.7	061606B	mg/L	ND	0.0200	4.89	5.00	97.8%	95-105%	4.78	5.00	95.6%	90-110%
Selenium	EPA 200.8	070606A	mg/L	ND	0.0050	0.0486	0.0500	97.2%	95-105%	0.0479	0.0500	95.8%	90-110%
Silver	EPA 200.8	070606A	mg/L	ND	0.0050	0.0507	0.0500	101%	95-105%	0.0483	0.0500	96.6%	90-110%
Thallium	EPA 200.8	070606A	mg/L	ND	0.0010	0.0500	0.0500	100%	95-105%	0.0465	0.0500	93.0%	90-110%
Vanadium	EPA 200.8	070606A	mg/L	ND	0.0050	0.0498	0.0500	99.6%	95-105%	0.0482	0.0500	96.4%	90-110%
Zinc	EPA 200.7	061606B	mg/L	ND	0.0200	5.08	5.00	102%	95-105%	4.79	5.00	95.8%	90-110%
Boron	EPA 200.7	061606B	mg/L	ND	0.200	4.99	5.00	100%	95-105%	4.76	5.00	95.2%	90-110%
Iron	EPA 200.7	061606B	mg/L	ND	0.300	4.89	5.00	97.8%	95-105%	4.93	5.00	98.6%	90-110%

			LABORATORY CONTROL SAMPLES				SAMPLE DUPLICATES				
Parameter	Method	Units	LCS Obs.	LCS Theo.	% Rec.	Control Limits	SAMPLE ID	SAMPLE RESULT	DUP RESULT	% RPD	Precision Control Limits %
Aluminum	EPA 200.7	mg/L	4.86	5.00	97.2%	90-110%	955857-3	ND	ND	0.00%	≤20
Antimony	EPA 200.8	mg/L	0.0487	0.0500	97.4%	90-110%	955857-3	ND	ND	0.00%	≤20
Arsenic	EPA 200.8	mg/L	0.0494	0.0500	98.8%	90-110%	955857-3	0.0302	0.0282	6.85%	≤20
Barium	EPA 200.7	mg/L	4.61	5.00	92.2%	90-110%	955857-2	ND	ND	0.00%	≤20
Beryllium	EPA 200.8	mg/L	0.0504	0.0500	101%	90-110%	955857-3	ND	ND	0.00%	≤20
Cadmium	EPA 200.8	mg/L	0.0501	0.0500	100%	90-110%	955857-3	ND	ND	0.00%	≤20
Chromium	EPA 200.7	mg/L	0.00985	0.0100	98.5%	90-110%	955857-1	ND	ND	0.00%	≤20
Chromium	EPA 200.7	mg/L	5.04	5.00	101%	90-110%	955857-2	1.97	1.86	5.74%	≤20
Cobalt	EPA 200.8	mg/L	0.0488	0.0500	97.6%	90-110%	955857-3	ND	ND	0.00%	≤20
Copper	EPA 200.8	mg/L	0.0498	0.0500	99.6%	90-110%	955857-3	0.361	0.363	0.55%	≤20
Lead	EPA 200.8	mg/L	0.0490	0.0500	98.0%	90-110%	955857-3	ND	ND	0.00%	≤20
Manganese	EPA 200.7	mg/L	4.77	5.00	95.4%	90-110%	955857-2	ND	ND	0.00%	≤20
Molybdenum	EPA 200.8	mg/L	0.0483	0.0500	96.6%	90-110%	955857-3	0.0524	0.0534	1.89%	≤20
Nickel	EPA 200.7	mg/L	4.53	5.00	90.6%	90-110%	955857-2	ND	ND	0.00%	≤20
Selenium	EPA 200.8	mg/L	0.0483	0.0500	96.6%	90-110%	955857-3	0.0265	0.0282	6.22%	≤20
Silver	EPA 200.8	mg/L	0.0497	0.0500	99.4%	90-110%	955857-3	ND	ND	0.00%	≤20
Thallium	EPA 200.8	mg/L	0.0491	0.0500	98.2%	90-110%	955857-3	ND	ND	0.00%	≤20
Vanadium	EPA 200.8	mg/L	0.0479	0.0500	95.8%	90-110%	955857-3	0.0164	0.0169	3.00%	≤20
Zinc	EPA 200.7	mg/L	4.99	5.00	99.8%	90-110%	955857-2	ND	ND	0.00%	≤20
Boron	EPA 200.7	mg/L	4.94	5.00	98.8%	90-110%	955857-2	1.36	1.32	2.99%	≤20
Iron	EPA 200.7	mg/L	5.07	5.00	101%	90-110%	955857-2	ND	ND	0.00%	≤20

TRUESDAIL LABORATORIES, INC.

Report Continued

MATRIX SPIKE

Sample ID	Parameter	Method	Units	Sample Result	DF	Spike Level	Total Amt. of Spike	Theo. Value	MS Obs.	% Rec.	Accuracy Control Limits %
955857-3	Aluminum	EPA 200.7	mg/L	0.00	1.04	3.00	3.12	3.12	3.19	102%	70-130%
955857-3	Antimony	EPA 200.8	mg/L	0.00	10.4	0.0500	0.520	0.520	0.543	104%	70-130%
955857-3	Arsenic	EPA 200.8	mg/L	0.0302	10.4	0.0500	0.520	0.550	0.551	100%	70-130%
955857-2	Barium	EPA 200.7	mg/L	0.00	1.04	3.00	3.12	3.12	2.78	89.1%	70-130%
955857-3	Beryllium	EPA 200.8	mg/L	0.00	10.4	0.0500	0.520	0.520	0.600	115%	70-130%
955857-3	Cadmium	EPA 200.8	mg/L	0.00	10.4	0.0500	0.520	0.520	0.484	93.1%	70-130%
955857-1	Chromium	EPA 200.7	mg/L	0.00	1.04	0.0100	0.0104	0.0104	0.0100	96.2%	70-130%
955857-2	Chromium	EPA 200.7	mg/L	1.97	1.04	3.00	3.12	5.09	4.76	89.4%	70-130%
955857-3	Cobalt	EPA 200.8	mg/L	0.00	10.4	0.0500	0.520	0.520	0.472	90.8%	70-130%
955857-3	Copper	EPA 200.8	mg/L	0.361	10.4	0.0500	0.520	0.881	0.795	83.5%	70-130%
955857-3	Lead	EPA 200.8	mg/L	0.00	10.4	0.0500	0.520	0.520	0.442	85.0%	70-130%
955857-2	Manganese	EPA 200.7	mg/L	0.00	1.04	3.00	3.12	3.12	2.84	91.0%	70-130%
955857-3	Molybdenum	EPA 200.8	mg/L	0.0524	10.4	0.0500	0.520	0.572	0.609	107%	70-130%
955857-2	Nickel	EPA 200.7	mg/L	0.00	1.04	3.00	3.12	3.12	2.63	84.3%	70-130%
955857-3	Selenium	EPA 200.8	mg/L	0.0265	10.4	0.0500	0.520	0.547	0.515	93.9%	70-130%
955857-3	Silver	EPA 200.8	mg/L	0.00	10.4	0.0500	0.520	0.520	0.470	90.4%	70-130%
955857-3	Thallium	EPA 200.8	mg/L	0.00	10.4	0.0500	0.520	0.520	0.424	81.5%	70-130%
955857-3	Vanadium	EPA 200.8	mg/L	0.0164	10.4	0.0500	0.520	0.536	0.514	95.7%	70-130%
955857-2	Zinc	EPA 200.7	mg/L	0.00	1.04	3.00	3.12	3.12	2.87	92.0%	70-130%
955857-2	Boron	EPA 200.7	mg/L	1.36	1.04	3.00	3.12	4.48	4.26	92.9%	70-130%
955857-2	Iron	EPA 200.7	mg/L	0.00	1.04	3.00	3.12	3.12	2.85	91.3%	70-130%

ND: Not detected, or below limit of detection.

DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

023

955857

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

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-051]

COC Number IM3Plant-WDR-051
TURNAROUND TIME 10 Days
DATE 6/15/06 PAGE 1 OF 1

COMPANY CH2M HILL
PROJECT NAME PG&E Topock IM3
PHONE 530-229-3303 FAX 530-339-3303
ADDRESS 155 Grand Ave Ste 1000
Oakland, CA 94612
P.O. NUMBER E-2
SAMPLERS (SIGNATURE)

Rec'd 06/15/06
955857

	SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr(VI) (218.6) Lab Filtered	Title 22 Metals List (200.7, 200.8, 245.1)	EC (120.1), pH (180.1)	TDS (160.1)	Turb (180.0)	Total Metals (200.7) See List Below	Ammonia (350.2)	Anions (300.0) F	Anions (300.0) F, NO3, NO2, SO4	NUMBER OF CONTAINE	COMMENTS
-1	SC-700B-WDR-051	6/15/06	1200		X		X	X	X	X	X		X	5	pH-7
-2	SC-100B-WDR-051	6/15/06	1145		X		X	X	X	X	X		X	4	pH-7
-3	SC-701-WDR-051	6/15/06	1245		X	X	X	X				X		4	pH-2
														14	TOTAL NUMBER OF CONTAINERS

ALERT!!
Level III QC

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	GARY SIEBLE	Topock IM-3 GWT	6-15-06 1257
Signature (Received)	MANGARUK	T.E.T.	6-15-06 19:15
Signature (Relinquished)			
Signature (Received)			
Signature (Relinquished)			
Signature (Received)			

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

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

Sample Conditions attached

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

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TUSTIN, CALIFORNIA 92780-7008
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www.truesdail.com

July 7, 2006

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

Dear Mr. Duffy:

SUBJECT: REVISED CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-052 PROJECT, GROUNDWATER MONITORING,

TLI NO.: 956046

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-052 project groundwatet monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on June 21, 2006, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Due to the dilution of the Hexavalent Chromium sample, the result is below the detection limit of 0.001 mg/L but the result of 0.00043 mg/L is reported in the QC to pass the matrix spike.

The pH was not recorded on the chain of custody during log-in. After re-checking the pH on the Total Chromium sample it was determined that the pH was 2 and that sample had been preserved in the field.

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services

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

CC: Mr. Mark Cichy, CH2M HILL Redding CA

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Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: NA

Laboratory No.: 956046
Date: July 6, 2006
Collected: June 21, 2006
Received: June 21, 2006

ANALYST LIST

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

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INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

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REPORT

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

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA
Prep. Batch: 062706A

Laboratory No.: 956046

Date: July 6, 2006
Collected: June 21, 2006
Received: June 21, 2006
Prep/ Analyzed: June 27, 2006
Analytical Batch: 062706A

Investigation: **Total Dissolved Chromium by Inductively Coupled Argon Plasma Atomic Emission Spectrometer using EPA 200.7**

Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
956046	SC-700B-WDR-052	mg/L	EPA 200.7	9:28	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	956046	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	956046	0.00	1.04	0.0100	0.0104	0.0106	0.0104	102%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0104	0.0100	104%	90% - 110%	Yes
MRCVS#1	0.0100	0.0100	100%	90% - 110%	Yes
ICS	0.0101	0.0100	101%	80% - 120%	Yes
LCS	0.00985	0.0100	98.5%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

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www.truesdail.com

REPORT

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

Laboratory No.: 956046

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Date: July 6, 2006
Collected: June 21, 2006
Received: June 21, 2006
Prep/ Analyzed: June 22, 2006
Analytical Batch: 06CrH06V

Investigation: **Hexavalent Chromium by EPA 218.6**

Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
956046	SC-700B-WDR-052	13:00	07:07	mg/L	5.00	0.0010	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	956046	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	956046	0.00043	5.00	0.00100	0.00500	0.00554	0.00543	102%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00491	0.00500	98.2%	90% - 110%	Yes
MRCVS#1	0.00997	0.0100	99.7%	95% - 105%	Yes
LCS	0.00500	0.00500	100%	90% - 110%	Yes
LCSD	0.00497	0.00500	99.4%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 956046
Date: July 6, 2006
Collected: June 21, 2006
Received: June 21, 2006
Prep/ Analyzed: June 22, 2006
Analytical Batch: 06TUC06S

Investigation: **Turbidity by Method EPA 180.1**

Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
956046	SC-700B-WDR-052	13:00	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	956040-17	0.145	0.150	3.39%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	8.02	8.00	100%	90% - 110%	Yes
LCS	8.03	8.00	100%	90% - 110%	Yes
LCS	7.98	8.00	99.8%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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REPORT

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

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 956046
Date: July 6, 2006
Collected: June 21, 2006
Received: June 21, 2006
Prep/ Analyzed: June 22, 2006
Analytical Batch: 06PH06R

Investigation:

pH by EPA 150.1

Analytical Results pH

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	MDL	RL	Results
956046	SC-700B-WDR-052	13:00	09:06	pH Units	0.0570	2.00	8.18

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	956046	8.18	8.18	0.00	± 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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

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Analytical Services

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REPORT

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

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 956046
Date: July 6, 2006
Collected: June 21, 2006
Received: June 21, 2006
Prep/ Analyzed: June 22, 2006
Analytical Batch: 06EC06K

Investigation:

Specific Conductivity by EPA 120.1

Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
956046	SC-700B-WDR-052	µmhos/cm	EPA 120.1	10.0	20.0	7450

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	956046	7450	7400	0.67%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	672	706	95.2%	90% - 110%	Yes
CVS#1	945	1000	94.5%	90% - 110%	Yes
CVS#2	935	1000	93.5%	90% - 110%	Yes
LCS	675	706	95.6%	90% - 110%	Yes
LCSD	674	706	95.5%	90% - 110%	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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REPORT

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

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 956046
Date: July 6, 2006
Collected: June 21, 2006
Received: June 21, 2006
Prep/ Analyzed: June 22, 2006
Analytical Batch: 06TDS06G

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

Analytical Results Total Dissolved Solids

TLI I.D.	Field I.D.	Units	Method	RL	Results
956046	SC-700B-WDR-052	mg/L	EPA 160.1	250	4240

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	955857-1	4030	4140	1.35%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	494	500	98.8%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

956046

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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-052]

COC Number IM3Plant-WDR-052
TURNAROUND TIME 10 Days
DATE 6/21/06 PAGE 1 OF 1

COMPANY CH2M HILL /E2
PROJECT NAME PG&E Topock IM3
PHONE 530-229-3303 FAX 530-339-3303
ADDRESS 155 Grand Ave Ste 1000
Oakland, CA 94612
P.O. NUMBER E2
SAMPLERS (SIGNATURE

Rec'd 06/21/06 s10a 956046

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr(VI) (218.6) Lab Filtered	Title 22 Metals List (200.7, 200.8, 245.1)	EC (120.1), pH (150.1)	TDS (160.1)	Turb (180.0)	Cr - Total Metals (200.7)	Ammonia (350.2)	Anions (300.0) F	NUMBER OF CONTAINERS	COMMENTS
SC-7008-WDR-052	6/21/06	1300		X		X	X	X	X			3	pH=2
												3	TOTAL NUMBER OF CONTAINERS

ALERT!!
Level III QC

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	Printed Name Eric Tosmanes	Company/ Agency Omi	Date/ Time 6-21-06 1307
Signature (Received) L. Shabumura	Printed Name L. Shabumura	Company/ Agency TA	Date/ Time 6/21/06 17 45
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

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

SPECIAL REQUIREMENTS:

032

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July 6, 2006

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-053 PROJECT, GROUNDWATER MONITORING,

TLI NO.: 956269

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-053 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on June 28, 2006, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Due to the dilution of the Hexavalent Chromium sample, the result is below the detection limit of 0.001 mg/L but the result of 0.00041 mg/L is reported in the QC to pass the matrix spike. In addition, the sample was analyzed along with other samples that were analyzed by SW 7199. No duplicate was run on the EPA 218.6 sample but was run on the SW 7199 sample which has the same QC recovery range for the duplicates. Therefore, the duplicate of sample 956270-1 was used for both methods in the batch.

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services

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

CC: Mr. Mark Cichy, CH2M HILL Redding CA

TRUESDAIL LABORATORIES, INC.

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Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: NA

Laboratory No.: 956269
Date: July 7, 2006
Collected: June 28, 2006
Received: June 28, 2006
Revision 1

ANALYST LIST

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

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

Laboratory No.: 956269
Date Received: June 28, 2006
Revision 1

Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Analytical Results Summary

Lab I.D.	Sample I.D.	Sample Time	EPA 200.7 *Chromium Total* mg/L	EPA 218.6 *Chromium Hexavalent* mg/L	EPA 180.1 *Turbidity* NTU	EPA 150.1 *pH* Unit	EPA 120.1 *EC* µmhos/cm	EPA 160.1 *TDS* mg/L
956269	SC-700B-WDR-053	12:30	ND	ND	0.105	8.10	7180	3380

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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REPORT

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

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA
Prep. Batch: 063006A

Laboratory No.: 956269

Date: July 7, 2006
Collected: June 28, 2006
Received: June 28, 2006
Prep/ Analyzed: June 30, 2006
Analytical Batch: 063006A
Revision 1

Investigation: **Total Dissolved Chromium by Inductively Coupled Argon Plasma Atomic Emission Spectrometer using EPA 200.7**

Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
956269	SC-700B-WDR-053	mg/L	EPA 200.7	11:57	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	956269	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	956269	0.00	1.04	0.0150	0.0156	0.0160	0.0156	103%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0102	0.0100	102%	90% - 110%	Yes
MRCVS#1	0.0102	0.0100	102%	90% - 110%	Yes
MRCVS#2	0.00989	0.0100	98.9%	90% - 110%	Yes
ICS	0.00986	0.0100	98.6%	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.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

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

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 956269

Date: July 7, 2006
Collected: June 28, 2006
Received: June 28, 2006
Prep/ Analyzed: June 29, 2006
Analytical Batch: 06CrH06Z
Revision 1

Investigation: **Hexavalent Chromium by EPA 218.6**

Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
956269	SC-700B-WDR-053	12:30	09:35	mg/L	5.00	0.0010	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	956270-1	0.976	0.973	0.31%	< 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
MSD	956269	0.00041	5.00	0.00100	0.00500	0.00553	0.00541	102%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00505	0.00500	101%	90% - 110%	Yes
MRCVS#1	0.01010	0.0100	101%	95% - 105%	Yes
MRCVS#2	0.01000	0.0100	100%	95% - 105%	Yes
LCS	0.00515	0.00500	103%	90% - 110%	Yes
LCSD	0.00509	0.00500	102%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 956269
Date: July 7, 2006
Collected: June 28, 2006
Received: June 28, 2006
Prep/ Analyzed: June 29, 2006
Analytical Batch: 06TUC06W
Revision 1

Investigation: **Turbidity by Method EPA 180.1**

Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
956269	SC-700B-WDR-053	12:30	NTU	1.00	0.100	0.105

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	956267-37	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.70	8.00	96.3%	90% - 110%	Yes
LCS	7.72	8.00	96.5%	90% - 110%	Yes
LCS	7.82	8.00	97.8%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

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

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 956269
Date: July 7, 2006
Collected: June 28, 2006
Received: June 28, 2006
Prep/ Analyzed: June 29, 2006
Analytical Batch: 06PH06Z
Revision 1

Investigation:

pH by EPA 150.1

Analytical Results pH

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	MDL	RL	Results
956269	SC-700B-WDR-053	12:30	08:07	pH Units	0.0570	2.00	8.10

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	956269	8.10	8.10	0.00	± 0.100 Units	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

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

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 956269
Date: July 7, 2006
Collected: June 28, 2006
Received: June 28, 2006
Prep/ Analyzed: June 29, 2006
Analytical Batch: 06EC06R
Revision 1

Investigation:

Specific Conductivity by EPA 120.1

Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
956269	SC-700B-WDR-053	µmhos/cm	EPA 120.1	10.0	20.0	7180

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	956269	7180	7190	0.14%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	672	706	95.2%	90% - 110%	Yes
CVS#1	930	1000	93.0%	90% - 110%	Yes
LCS	673	706	95.3%	90% - 110%	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

for Mona Nassimi

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

14201 FRANKLIN AVENUE
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(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: NA
P.O. No.: NA

Laboratory No.: 956269
Date: July 7, 2006
Collected: June 28, 2006
Received: June 28, 2006
Prep/ Analyzed: June 29, 2006
Analytical Batch: 06TDS06J
Revision 1

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

Analytical Results Total Dissolved Solids

TLI I.D.	Field I.D.	Units	Method	RL	Results
956269	SC-700B-WDR-053	mg/L	EPA 160.1	250	3380

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	956269	3380	3400	0.29%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	484	500	96.8%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

956269 RUSH

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

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-053]

COC Number IM3Plant-WDR -053
TURNAROUND TIME 5 Days
DATE 6/28/06 PAGE 1 OF 1

COMPANY	CH2M HILL /E2
PROJECT NAME	PG&E Topock IM3
PHONE	530-229-3303 FAX 530-339-3303
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612
P.O. NUMBER	E2
SAMPLERS (SIGNATURE	

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Cr(VI) (218.6) Lab Filtered	Title 22 Metals List (200.7, 200.8, 245.1)	EC (120.1), pH (150.1)	TDS (160.1)	Turb (180.0)	Cr - Total Metals (200.7)	Ammonia (350.2)	Anions (300.0) F	NUMBER OF CONTAINERS	COMMENTS
SC-7008-WDR-053	6/28/06	12:30		X		X	X	X	X			3	pH-2
												3	TOTAL NUMBER OF CONTAINERS

ALERT!!
Level III QC

Rec'd 06/28/06
956269

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	David Chang	OMI	6-28/06 12:36
Signature (Received)	Manager	T-L-I	6/28/06 19:25
Signature (Relinquished)			
Signature (Received)			
Signature (Relinquished)			
Signature (Received)			

SAMPLE CONDITIONS

RECEIVED COOL ☐ WARM ☐ °F

CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

ANALYTICAL REPORT

PG & E TOPOCK

Lot #: E6F160255

Shawn Duffy

CH2M Hill Inc

SEVERN TRENT LABORATORIES, INC.

Marisol Tabirara
Project Manager

July 6, 2006

EXECUTIVE SUMMARY - Detection Highlights

E6F160255

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SC-SLUDGE-WDR-051 06/15/06 12:10 001				
Chromium	140	0.10	mg/L	SW846 6010B
Mercury	2.5	0.56	mg/kg	SW846 7471A
Arsenic	19	5.6	mg/kg	SW846 6010B
Barium	98	11	mg/kg	SW846 6010B
Cadmium	6.6	2.8	mg/kg	SW846 6010B
Chromium	22000	5.6	mg/kg	SW846 6010B
Selenium	9.7	2.8	mg/kg	SW846 6010B
Copper	140	14	mg/kg	SW846 6010B
Molybdenum	64	22	mg/kg	SW846 6010B
Nickel	46	22	mg/kg	SW846 6010B
Thallium	17	5.6	mg/kg	SW846 6010B
Vanadium	110	28	mg/kg	SW846 6010B
Zinc	66	11	mg/kg	SW846 6010B
Dissolved Hexavalent Chromium	0.0083	0.0010	mg/L	SW846 7199
Percent Moisture	82	0.10	%	MCAWW 160.3 MOD
Hexavalent Chromium	110	2.8	mg/kg	SW846 7199

METHODS SUMMARY

E6F160255

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

References:

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

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

METHOD / ANALYST SUMMARY

E6F160255

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

References:

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

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

SAMPLE SUMMARY

E6F160255

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
H7K2T	001	SC-SLUDGE-WDR-051	06/15/06	12:10

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-051

TOTAL Metals

Lot-Sample #...: E6F160255-001 **Matrix.....:** SO
Date Sampled...: 06/15/06 12:10 **Date Received..:** 06/16/06 08:55
% Moisture.....: 82

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 6172259						
Arsenic	**19**	**5.6**	**mg/kg**	**SW846 6010B**	**06/21-06/25/06**	**H7K2T1AA**
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		
Antimony	ND	33	mg/kg	SW846 6010B	06/21-06/25/06	H7K2T1AC
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		
Barium	**98**	**11**	**mg/kg**	**SW846 6010B**	**06/21-06/25/06**	**H7K2T1AD**
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		
Cadmium	**6.6**	**2.8**	**mg/kg**	**SW846 6010B**	**06/21-06/25/06**	**H7K2T1AE**
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		
Chromium	**22000**	**5.6**	**mg/kg**	**SW846 6010B**	**06/21-06/25/06**	**H7K2T1AF**
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		
Beryllium	ND	2.8	mg/kg	SW846 6010B	06/21-06/25/06	H7K2T1AG
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		
Lead	ND	2.8	mg/kg	SW846 6010B	06/21-06/25/06	H7K2T1AH
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		
Selenium	**9.7**	**2.8**	**mg/kg**	**SW846 6010B**	**06/21-06/25/06**	**H7K2T1AJ**
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		
Silver	ND	5.6	mg/kg	SW846 6010B	06/21-06/25/06	H7K2T1AK
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		

(Continued on next page)

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-051

TOTAL Metals

Lot-Sample #...: E6F160255-001 **Matrix.....:** SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Cobalt	ND	28	mg/kg	SW846 6010B	06/21-06/25/06	H7K2T1AL
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		
Copper	**140**	**14**	**mg/kg**	**SW846 6010B**	**06/21-06/25/06**	**H7K2T1AM**
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		
Molybdenum	**64**	**22**	**mg/kg**	**SW846 6010B**	**06/21-06/25/06**	**H7K2T1AN**
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		
Nickel	**46**	**22**	**mg/kg**	**SW846 6010B**	**06/21-06/25/06**	**H7K2T1AP**
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		
Thallium	**17**	**5.6**	**mg/kg**	**SW846 6010B**	**06/21-06/25/06**	**H7K2T1AQ**
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		
Vanadium	**110**	**28**	**mg/kg**	**SW846 6010B**	**06/21-06/25/06**	**H7K2T1AR**
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		
Zinc	**66**	**11**	**mg/kg**	**SW846 6010B**	**06/21-06/25/06**	**H7K2T1AT**
		Dilution Factor: 1		Analysis Time..: 00:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172136		

Prep Batch #...: 6172261

Mercury	**2.5**	**0.56**	**mg/kg**	**SW846 7471A**	**06/21-06/22/06**	**H7K2T1AU**
		Dilution Factor: 1		Analysis Time..: 12:58	Analyst ID.....: 000023	
		Instrument ID..: M04		MS Run #.....: 6172142		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-051

TCLP Metals

Lot-Sample #...: E6F160255-001 **Matrix.....:** SO
Date Sampled...: 06/15/06 12:10 **Date Received..:** 06/16/06 08:55
Leach Date.....: 06/19/06 **Leach Batch #..:** P617014

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 6171547						
Chromium	ND	0.50	mg/L	SW846 6010B	06/20-06/21/06	H7K2T1AX
		Dilution Factor: 1		Analysis Time..: 15:25	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6171357		

NOTE(S):

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

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-051

STLC Metals

Lot-Sample #...: E6F160255-001 **Matrix.....:** SO
Date Sampled...: 06/15/06 12:10 **Date Received..:** 06/16/06 08:55
Leach Date.....: 06/19/06 **Leach Batch #..:** P617012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 6172561						
Chromium	**140**	**0.10**	**mg/L**	**SW846 6010B**	**06/21-06/22/06**	**H7K2T1A0**
		Dilution Factor: 1		Analysis Time..: 18:53	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6172316		

NOTE(S):

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

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-051

TOTAL General Chemistry

Lot-Sample #...: E6F160255-001 **Work Order #...:** H7K2T **Matrix.....:** SO
Date Sampled...: 06/15/06 12:10 **Date Received..:** 06/16/06 08:55
% Moisture.....: 82 **Leach Date.....:** 06/19/06 **Leach Batch #..:** P617013

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Dissolved Hexavalent Chromium	**0.0083**	**0.0010**	**mg/L**	**SW846 7199**	**06/21/06**	**6172540**

Dilution Factor: 1 Analysis Time..: 16:44 Analyst ID.....: 000022
Instrument ID..: W18 MS Run #.....: 6172338

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-051

General Chemistry

Lot-Sample #...: E6F160255-001 **Work Order #...:** H7K2T **Matrix.....:** SO
Date Sampled...: 06/15/06 12:10 **Date Received..:** 06/16/06 08:55
% Moisture.....: 82

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	**110**	**2.8**	**mg/kg**	**SW846 7199**	**06/19-06/20/06**	**6170236**
	Dilution Factor: 2.5		Analysis Time..: 13:04		Analyst ID.....: 0000228	
	Instrument ID..: W18		MS Run #.....: 6170158			
Percent Moisture	**82**	**0.10**	**%**	**MCAWW 160.3 MOD**	**07/05-07/06/06**	**6186468**
	Dilution Factor: 1		Analysis Time..: 08:30		Analyst ID.....: 0000648	
	Instrument ID..: W15		MS Run #.....: 6186321			

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

Severn Trent Laboratories
1721 Grand Ave, Santa Ana, CA 92705
(714)258-8610

CHAIN OF CUSTODY RECORD

[Sludge Sample-9]

COC Number E6F160255

TURNAROUND TIME 10 Days

DATE 6/15/06

PAGE 1 OF 1

OMPANY CH2M HILL /E2

ROJECT NAME PG&E Topock

HONE 530-229-3303 FAX 530-339-3303

DDRESS 155 Grand Ave Ste 1000, Oakland, CA 94612

P.O. NUMBER ______ TEAM 1

SAMPLERS (SIGNATURE [signature]

SAMPLE I.D.	DATE	TIME	DESCRIPTION	CR6 (7199)	Total Met (6010B) Tile 22	Metals (7470A)	STLC Cr (7199) and (6010B)	TCLP Cr (6010B)	NUMBER OF CONTAINERS	COMMENTS
Sc-Sludge-WDR-051	6/15/06	1210	Soil	X	X	X	X	X	2	
									2	TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SIGNATURE RECORD

Signature	Printed Name	Company/Agency	Date/Time
Signature (Relinquished) [signature]	Gary Sh[illegible]	Topock IM3 [illegible]	6-15-06 12:43
Signature (Received) [signature]	Vince Padilla	STL	6/16/06 0842
Signature (Relinquished) [signature]			
Signature (Received)			
Signature (Relinquished) [signature]	Vince Padilla	STL	6/16/06 0855
Signature (Received) [signature]	Steve Gonzales	STL	6/16/06 0855

SAMPLE CONDITIONS

RECEIVED COOL ☐ WARM ☐ _____ °F

CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

Temp: 5.9-0.3=5.6

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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www.truesdail.com

July 3, 2006

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK PROJECT, SLUDGE SAMPLE-9,
TLI NO.: 955851

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock project, Sludge Sample-9. A summary table for this sample delivery group is included in Section 2. Complete laboratory report, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The sample was received and delivered with the chain of custody on June 15, 2006, intact and in chilled condition. The sample will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

No violations or nonconformance actions occurred for this data package.

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services

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

CC: Mr. Mark Ciehy, CH2M HILL Redding CA

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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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: One (1) Soil Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00

Laboratory No.: 955851
Date: July 3, 2006
Collected: June 15, 2006
Received: June 15, 2006

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 300.0	Fluoride	Giawad Ghenniwa

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931

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

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

Laboratory No.: 955851
Date: July 3, 2006
Collected: June 15, 2006
Received: June 15, 2006
Prep/ Analyzed: June 16, 2006
Analytical Batch: 06AN06O

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

Analytical Results Fluoride

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
955851	SC-Sludge-WDR-051	mg/kg	EPA 300.0	21:19	19.6	3.92	13.0

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	955857-1	1.97	1.95	1.02%	≤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	955857-1	1.97	1.00	4.00	4.00	5.85	5.97	97.0%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.16	4.00	104%	90% - 110%	Yes
MRCVS#1	3.19	3.00	106%	90% - 110%	Yes
MRCVS#2	3.18	3.00	106%	90% - 110%	Yes
LCS	4.14	4.00	104%	90% - 110%	Yes
LCSD	4.17	4.00	104%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

955851

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

CHAIN OF CUSTODY RECORD

[Sludge Sample -9]

COC Number

TURNAROUND TIME 10 Days

DATE 6/15/06 PAGE 1 OF 1

COMPANY CH2M HILL

PROJECT NAME PG&E Topock IM3

PHONE 530-229-3303 FAX 530-339-3303

ADDRESS 155 Grand Ave Ste 1000
Oakland, CA 94612

P.O. NUMBER E2

SAMPLERS (SIGNATURE

For Sample Condition
See Form Attached

Rec'd 06/15/06
955851

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Anions (300.0) F	Biossay-Mac-Aquia	NUMBER OF CONTAINERS	COMMENTS
SC-Sludge-WDR-051	6/15/06	1210	Sludge	X	X	1	
						1	

ALERT!!
Level III QC

TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	GARY SIBBLE	Topock IM-3 QAI	6/15-06 1236
Signature (Received)	Monagan	T.K.J.	6/15/06 19:35
Signature (Relinquished)			
Signature (Received)			
Signature (Relinquished)			
Signature (Received)			

SAMPLE CONDITIONS

RECEIVED COOL ☐ WARM ☐ °F

CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

Appendix B
Flowmeter Calibration Records

Flow Calibration with Adjustment

Endress+Hauser
People for Process Automation

30057866-1275190

41724888
Purchase Order Number

USA-49310090-40 / Endress+Hauser Flowtec
Order Nº/Manufacturer

23P50-AL1A1RA022AW
Order Code

PROMAG 23 P 2"
Transmitter/Sensor

6A021F16000
Serial Nº

FIT-100
Tag Nº

FCP-6.C
Calibration rig

155.6102 GPM (≙ 100%)
Calibrated full scale

Current 4 - 20 mA
Calibrated output

0.9178
Calibration factor

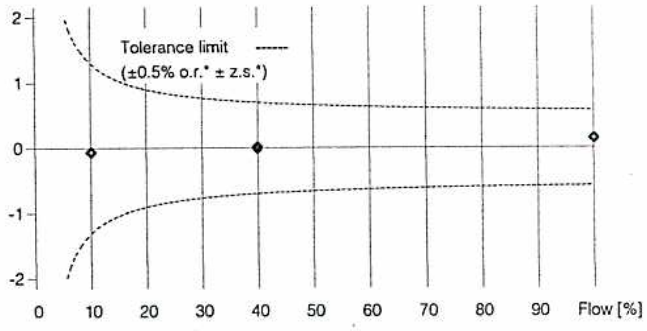
0
Zero point

72.9 °F
Water temperature

Flow [%]	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ o.r.* [%]	Outp.** [mA]
10.0	15.5	30.0	7.7502	7.7457	-0.06	5.59
39.9	62.1	30.0	31.071	31.070	0.00	10.38
39.9	62.1	30.0	31.073	31.078	0.02	10.38
100.2	156.0	30.0	78.041	78.156	0.15	20.06
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate
**Calculated value (4 - 20 mA)

Measured error % o.r.



*z.s.: Zero stability

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

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

11-29-2004
Date of calibration

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143

Tim Swick
Operator

Certified acc. to
MIL-STD-45662A
ISO 9001, Reg.-Nº 030502.2

Parameter Setting

Endress+Hauser
People for Process Automation

1275190

41724888 Purchase Order Number	PROMAG 23 P Transm./Sensor
USA-49310090-40 / Endress+Hauser Flowtec Order Nº/Manufacturer	2" Nominal diameter
23P50-AL1A1RA022AW Order Code	FIT-100 Tag Nº
6A021F16000 Serial Nº	

Current Output 1	
Value for 0/4mA	0 USgal/min
Value for 20mA	75 USgal/min
Current Span	4-20mA HART US

The above parameters are set according to your order. Please refer to the Operating Manual for any parameters not mentioned.

11-29-2004
Date

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143

CH2M HILL INSTRUMENT CALIBRATION SHEET Rev.06.05.92

COMPONENT	MANUFACTURER	PROJECT
Code:	Name: Endress + Hauser	Number:
Name:	Model: 23P50-AL1A1RA022AW	Name: TOPOCIC IM3
	Serial #: 6A0221F16000	

FUNCTIONS

	RANGE	VALUE	UNITS	COMPUTING FUNCTIONS? Y / N	CONTROL? Y / N
Indicate? (Y) / N	Chart:			Describe:	Action? direct / ~~reverse~~
Record? Y / (N)	Scale:	0-50	gpm		Modes? P / I / D
Transmit/	Input:	0-50	GPM		SWITCH? Y / (N)
Convert? (Y) / N	Output:	4-20	MA		Unit Range:
					Differential: fixed/adjustable
					Reset? automatic / manual

ANALOG CALIBRATIONS

REQUIRED			AS CALIBRATED			
			Increasing Input		Decreasing Input	
Input	Indicated	Output	Indicated	Output	Indicated	Output
0.0	0.0	4.0	0	4.00		
25.0	25.0	12.0				
50.0	50.0	20.0				
CONTROL MODE SETTINGS:			P:	I:	D:	

DISCRETE CALIBRATIONS

REQUIRED			AS CALIBRATED		Note.
Number	Trip Point (note rising or falling)	Reset Pt.	Trip Point (note rising or falling)	Reset Pt.	No
1.					
2.					
3.					
4.					
5.					
6.					
7.					

#	NOTES:
	Verified Model No & Tag.
	Programmed Tag & Description
	Reranged from 0-75 gpm to 0-50 gpm
	Simulated Current output 4, 8, 12, 16, & 20

Component Calibrated and Ready for Start-up

By: C. Hastings

Date: 4-18-05

Tag No.: FIT-100

Flow Calibration with Adjustment

Endress+Hauser
People for Process Automation

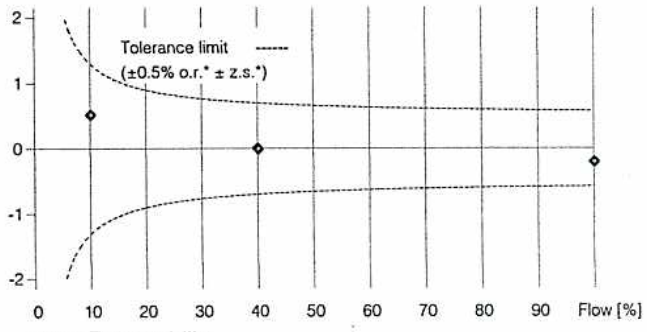
30057870-1275191

41724888 Purchase Order Number	FCP-6.C Calibration rig
USA-49310090-40 / Endress+Hauser Flowtec Order Nº/Manufacturer	155.6102 GPM (≙ 100%) Calibrated full scale
23P50-AL1A1RA022AW Order Code	Current 4 - 20 mA Calibrated output
PROMAG 23 P 2" Transmitter/Sensor	0.9207 Calibration factor
6A022016000 Serial Nº	0 Zero point
FIT-101 Tag Nº	74.1 °F Water temperature

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

*o.r.: of rate
**Calculated value (4 - 20 mA)

Measured error % o.r.



*z.s.: Zero stability

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

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

11-29-2004
Date of calibration

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143

Tim Swick
Operator

Certified acc. to
MIL-STD-45662A
ISO 9001, Reg.-Nº 030502.2

Parameter Setting

Endress+Hauser
People for Process Automation

1275191

41724888 Purchase Order Number	PROMAG 23 P Transm./Sensor
USA-49310090-40 / Endress+Hauser Flowtec Order Nº/Manufacturer	2" Nominal diameter
23P50-AL1A1RA022AW Order Code	FIT-101 Tag Nº
6A022016000 Serial Nº	

Current Output 1	
Value for 0/4mA	0 USgal/min
Value for 20mA	75 USgal/min
Current Span	4-20mA HART US

The above parameters are set according to your order. Please refer to the Operating Manual for any parameters not mentioned.

11-29-2004
Date

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143

***CH2M HILL* INSTRUMENT CALIBRATION SHEET** Rev.06.05.92

COMPONENT	MANUFACTURER	PROJECT
Code:	Name: Endress + Hauser	Number:
Name:	Model: 23P50-AL1ARA022AW	Name: Topock IM3
	Serial #: 6A0220160000	

FUNCTIONS

	RANGE	VALUE	UNITS	COMPUTING FUNCTIONS? Y / N	CONTROL? Y (N)
Indicate? (Y) / N	Chart:			Describe:	Action? direct / reverse
Record? Y (N)	Scale:	0-120	GPM		Modes? P / I / D
Transmit/	Input:	0-120	GPM		SWITCH? Y (N)
Convert? (Y) / N	Output:	4-20	MA		Unit Range:
					Differential: fixed/adjustable
					Reset? automatic / manual

ANALOG CALIBRATIONS

REQUIRED			AS CALIBRATED			
Input	Indicated	Output	Increasing Input		Decreasing Input	
			Indicated	Output	Indicated	Output
0.0		4.0	0	4.0		
30.0		8.0				
60.0		12.0				
90.0		16.0				
120.0		20.0				
CONTROL MODE SETTINGS:			P:	I:	D:	

DISCRETE CALIBRATIONS

	REQUIRED		AS CALIBRATED		Note.
Number	Trip Point (note rising or falling)	Reset Pt.	Trip Point (note rising or falling)	Reset Pt.	No
1.					
2.					
3.					
4.					
5.					
6.					
7.					

#	NOTES:
	Verified Model No. & Tag.
	ReRanged from 0-75 gpm to 0120 gpm
	Programmed Tag & Description
	Simulated mA output 4, 8, 12, 16, & 20

Component Calibrated and Ready for Start-up

By: C. Hastings

Date: 4-18-05

Tag No.: FIT-101

Flow Calibration with Adjustment

Endress+Hauser
People for Process Automation

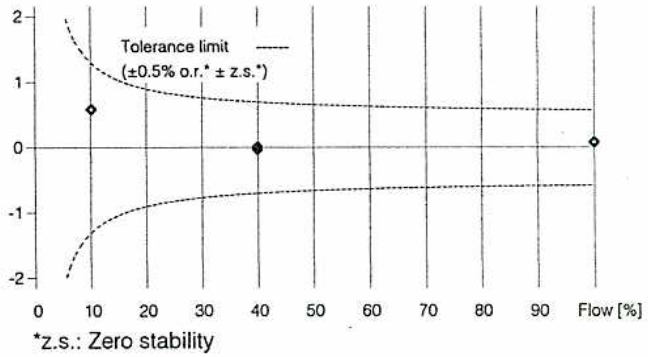
30057871-1275192

41724888 Purchase Order Number	FCP-6.C Calibration rig
USA-49310090-40 / Endress+Hauser Flowtec Order Nº/Manufacturer	155.6102 GPM (≙ 100%) Calibrated full scale
23P50-AL1A1RA022AW Order Code	Current 4 - 20 mA Calibrated output
PROMAG 23 P 2" Transmitter/Sensor	0.9214 Calibration factor
6A022116000 Serial Nº	0 Zero point
FIT-102 Tag Nº	74.9 °F Water temperature

Flow [%]	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ o.r.* [%]	Outp.** [mA]
10.0	15.6	30.0	7.7896	7.8356	0.59	5.61
39.9	62.1	30.0	31.069	31.073	0.01	10.38
39.9	62.1	30.0	31.070	31.063	-0.02	10.38
100.2	155.9	30.0	78.008	78.072	0.08	20.04
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate
**Calculated value (4 - 20 mA)

Measured error % o.r.



*z.s.: Zero stability

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

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

11-29-2004
Date of calibration

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143

Tim Swick
Operator

Certified acc. to
MIL-STD-45662A
ISO 9001, Reg.-Nº 030502.2

Parameter Setting

Endress+Hauser
People for Process Automation

1275192

41724888 Purchase Order Number	PROMAG 23 P Transm./Sensor
USA-49310090-40 / Endress+Hauser Flowtec Order Nº/Manufacturer	2" Nominal diameter
23P50-AL1A1RA022AW Order Code	FIT-102 Tag Nº
6A022116000 Serial Nº	

Current Output 1	
Value for 0/4mA	0 USgal/min
Value for 20mA	75 USgal/min
Current Span	4-20mA HART US

The above parameters are set according to your order. Please refer to the Operating Manual for any parameters not mentioned.

11-29-2004
Date

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143

CH2M HILL INSTRUMENT CALIBRATION SHEET Rev.06.05.92

COMPONENT	MANUFACTURER	PROJECT
Code:	Name: Eirdress + Hauser	Number:
Name:	Model:	Name: Topock IM3
	Serial #: 6AØ2211600Ø	

FUNCTIONS

	RANGE	VALUE	UNITS	COMPUTING FUNCTIONS? Y / N	CONTROL? Y / N
Indicate? Y / N	Chart:			Describe:	Action? direct / reverse
Record? Y / N	Scale:				Modes? P / I / D
Transmit/	Input:	0-50	GPM		SWITCH? Y / N
Convert? Y / N	Output:	4-20	mA		Unit Range:
					Differential: fixed/adjustable
					Reset? automatic / manual

ANALOG CALIBRATIONS

REQUIRED			AS CALIBRATED			
			Increasing Input		Decreasing Input	
Input	Indicated	Output	Indicated	Output	Indicated	Output
0.0	0.	4.00	Ø	4.0		
12.5	12.5	8.00				
25.00	25.0	12.00				
37.5	37.5	16.00				
50.0	50.0	20.00				
CONTROL MODE SETTINGS:			P:	I:	D:	

DISCRETE CALIBRATIONS

	REQUIRED		AS CALIBRATED		Note.
Number	Trip Point	Reset Pt.	Trip Point	Reset Pt.	No
	(note rising or falling)		(note rising or falling)		
1.					
2.					
3.					
4.					
5.					
6.					
7.					

#	NOTES:
	Verified, Model No & tag.
	Re-ranged from 0-75 gpm to 0-50 gpm
	Programmed tag & description
	Simulated mA output: 4, 8, 12, 16, & 20mA

Component Calibrated and Ready for Start-up

By: C. Hastings

Date: 4-18-05

Tag No.: FIT-102

Endress+Hauser
People for Process Automation

Flow Calibration with Adjustment

30060317-1304709

41729921
Purchase order number

US-49311914-10 / Endress+Hauser Flowtec
Order N°/Manufacturer

23P50-AL1A1AA022AW
Order code

PROMAG 23 P 2"
Transmitter/Sensor

6C037316000
Serial N°

~~FIT-1205~~ (AR) FIT-701 (put into service as FIT-701)
Tag N°

FCP-20 SMALL
Calibration rig

155.6102 GPM (≙ 100%)
Calibrated full scale

Current 4 - 20 mA
Calibrated output

0.9152
Calibration factor

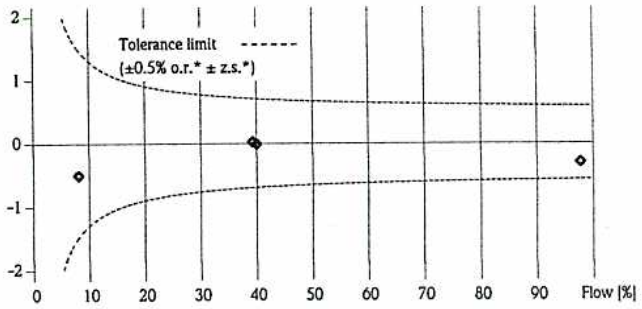
0
Zero point

72.0 °F
Water temperature

Flow [%]	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ o.r.* [%]	Outp.** [mA]
8.2	12.7	61.3	13.009	12.942	-0.51	5.30
39.5	61.4	61.6	63.049	63.061	0.02	10.32
40.2	62.5	60.9	63.388	63.377	-0.02	10.43
97.9	152.4	62.1	157.766	157.275	-0.31	19.62
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate
**Calculated value (4 - 20 mA)

Measured error % o.r.



*z.s.: Zero stability

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

Jim Baase

01-31-2005
Date of calibration

Jim Baase
Operator

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

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

Endress+Hauser

People for Process Automation

Parameter Setting

1304709

41729921 Purchase order number	PROMAG 23 P Transmitter/Sensor
US-49311914-10 / Endress+Hauser Flowtec Order N°/Manufacturer	2" Nominal diameter (AR)
23P50-AL1A1AA022AW Order code	~~FIT-1205~~ FIT-701 (put into service as FIT-701) Tag N°
6C037316000 Serial N°	

Current Output 1	
Value for 0/4mA	0 USgal/min
Value for 20mA	75 USgal/min
Current Span	4-20mA HART US

The above parameters are set according to your order.
Please refer to the Operating Manual for any parameters not mentioned.

01-31-2005
Date

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

CH2M HILL INSTRUMENT CALIBRATION SHEET Rev.06.05.92

COMPONENT	MANUFACTURER	PROJECT
Code:	Name: Endress + Hauser	Number:
Name:	Model: 23P5Ø-AL1A1AAØ22AW	Name: Topock IM3
	Serial #: 6CØ37316ØØØ	

FUNCTIONS

	RANGE	VALUE	UNITS	COMPUTING FUNCTIONS? Y / N	CONTROL? Y / (N)
Indicate? (Y) / N	Chart:			Describe:	Action? direct / reverse
Record? Y / (N)	Scale:	0-25	GPM		Modes? P / I / D
Transmit/ Convert? (Y) / N	Input:	0-25	GPM		SWITCH? Y / (N)
	Output:	4-20	ma		Unit Range:
					Differential: fixed/adjustable
					Reset? automatic / manual

ANALOG CALIBRATIONS

REQUIRED			AS CALIBRATED			
Input	Indicated	Output	Increasing Input		Decreasing Input	
			Indicated	Output	Indicated	Output
Ø.Ø	0.0	4.0	ØØ	4.0		
6.25	6.25	8.0				
12.5	12.50	12.0				
18.75	18.75	16.0				
25.0	25.00	20.0				
CONTROL MODE SETTINGS:			P:	I:	D:	

DISCRETE CALIBRATIONS

	REQUIRED		AS CALIBRATED		Note.
Number	Trip Point (note rising or falling)	Reset Pt.	Trip Point (note rising or falling)	Reset Pt.	No
1.					
2.					
3.					
4.					
5.					
6.					
7.					

#	NOTES:
	Re ranged from 0-75 gpm to 0-25 gpm
	Programmed tag & Description
	Simulated Output Ø4, 8, 12, 16, & 20 ma

Component Calibrated and Ready for Start-up

By: C. Hastings

Date:

Tag No.: ~~FIT-12Ø5~~

(AR) FIT-701 (put into service as FIT-701)

Endress+Hauser

People for Process Automation

Flow Calibration with Adjustment

Replica 30067967-1385113

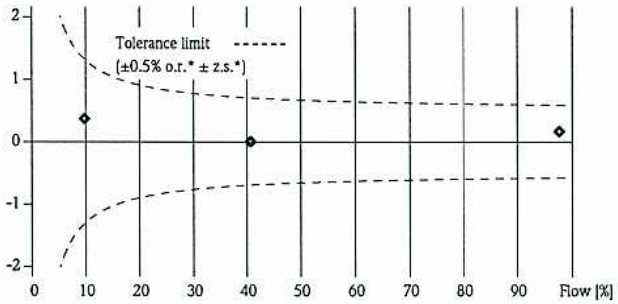
41743399 Purchase order number	FCP-20 MEDIUM Calibration rig
US-49316500-10 / Endress+Hauser Flowtec Order N°/Manufacturer	398.3621 GPM (≙ 100%) Calibrated full scale
23P80-AL1A1AA022AW Order code	Current 4 - 20 mA Calibrated output
PROMAG 23 P 3" Transmitter/Sensor	1.1476 Calibration factor
7700C616000 Serial N°	35 Zero point
- FIT-702 (AR) Tag N°	77.1 °F Water temperature

Flow [%]	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ o.r.* [%]	Outp.** [mA]
9.9	39.5	120.5	79.279	79.569	0.36	5.59
40.8	162.7	60.9	165.107	165.096	-0.01	10.53
40.9	162.7	60.5	164.200	164.202	0.00	10.54
97.9	390.1	60.8	395.561	396.199	0.16	19.69
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



*z.s.: Zero stability

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

07-27-2005
Date of calibration

John Redmon
Operator

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

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

Endress+Hauser
People for Process Automation

Parameter Setting

Replica 1385113

41743399 Purchase order number	PROMAG 23 P Transmitter/Sensor
US-49316500-10 / Endress+Hauser Flowtec Order N°/Manufacturer	3" Nominal diameter
23P80-AL1A1AA022AW Order code	- FIT-702 AR Tag N°
7700C616000 Serial N°	

Current Output 1

Value for 0/4mA	0 USgal/min
Value for 20mA	200 USgal/min
Current Span	4-20mA HART US

The above parameters are set according to your order.
Please refer to the Operating Manual for any parameters not mentioned.

07-27-2005
Date

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

Endress+Hauser

People for Process Automation

Flow Calibration with Adjustment

30060305-1304706

41729921
Purchase order number

US-49311914-10 / Endress+Hauser Flowtec
Order N°/Manufacturer

23P50-AL1A1AA022AW
Order code

PROMAG 23 P 2"
Transmitter/Sensor

6C037016000
Serial N°

FIT-1202
Tag N°

FCP-20 SMALL
Calibration rig

155.6102 GPM (≙ 100%)
Calibrated full scale

Current 4 - 20 mA
Calibrated output

0.9212
Calibration factor

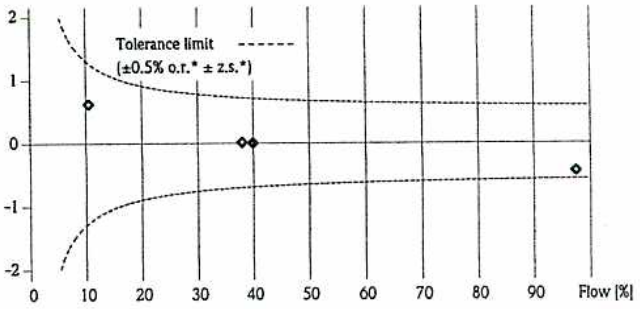
0
Zero point

71.6 °F
Water temperature

Flow [%]	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ o.r.* [%]	Outp.** [mA]
10.6	16.5	58.3	16.013	16.111	0.61	5.71
38.1	59.3	64.6	63.940	63.944	0.01	10.10
40.1	62.3	61.2	63.602	63.598	-0.01	10.41
97.6	151.9	61.2	154.838	154.134	-0.45	19.55
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate
**Calculated value (4 - 20 mA)

Measured error % o.r.



*z.s.: Zero stability

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

Jim Baase

01-31-2005
Date of calibration

Jim Baase
Operator

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

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

Endress+Hauser

People for Process Automation

Parameter Setting

1304706

41729921 Purchase order number	PROMAG 23 P Transmitter/Sensor
US-49311914-10 / Endress+Hauser Flowtec Order N°/Manufacturer	2" Nominal diameter
23P50-AL1A1AA022AW Order code	FIT-1202 Tag N°
6C037016000 Serial N°	

Current Output 1	
Value for 0/4mA	0 USgal/min
Value for 20mA	75 USgal/min
Current Span	4-20mA HART US

The above parameters are set according to your order.
Please refer to the Operating Manual for any parameters not mentioned.

01-31-2005
Date

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

***CH2M HILL* INSTRUMENT CALIBRATION SHEET** Rev.06.05.92

COMPONENT	MANUFACTURER	PROJECT
Code:	Name: Endress + Hauser	Number:
Name:	Model: 23P5Φ-AL1AAΦ22AW	Name: Topock IM3
	Serial #: 6CΦ37Φ116ΦΦΦ	

FUNCTIONS

	RANGE	VALUE	UNITS	COMPUTING FUNCTIONS? Y (N)	CONTROL? Y (N)
Indicate? (Y) N	Chart:			Describe:	Action? direct / reverse
Record? Y (N)	Scale:	0-25	GPM		Modes? P / I / D
					SWITCH? Y (N)
Transmit/	Input:	0-25	GPM		Unit Range:
Convert? (Y) N	Output:	4-20	MA		Differential: fixed/adjustable
					Reset? automatic / manual

ANALOG CALIBRATIONS

REQUIRED			AS CALIBRATED			
			Increasing Input		Decreasing Input	
Input	Indicated	Output	Indicated	Output	Indicated	Output
0.0	0.0	4.0	0	4.00		
6.25	6.25	8.0				
12.5	12.50	12.0				
18.75	18.75	16.0				
25.0	25.0	20.0				
CONTROL MODE SETTINGS:			P:	I:	D:	

DISCRETE CALIBRATIONS

REQUIRED			AS CALIBRATED		Note.
Number	Trip Point (note rising or falling)	Reset Pt.	Trip Point (note rising or falling)	Reset Pt.	No
1.					
2.					
3.					
4.					
5.					
6.					
7.					

#	NOTES:
	Verified Model No. & Tag
	Re-Ranged from 0-75 gpm to 0-25 gpm
	Programmed tag & Description

Component Calibrated and Ready for Start-up

By: C. Hastings

Date: 4-20-05

Tag No.: FIT-12Φ2

Endress+Hauser

People for Process Automation

Flow Calibration with Adjustment

30060319-1304707

41729921
Purchase order number

US-49311914-10 / Endress+Hauser Flowtec
Order N°/Manufacturer

23P50-AL1A1AA022AW
Order code

PROMAG 23 P 2"
Transmitter/Sensor

6C037116000
Serial N°

FIT-1203
Tag N°

FCP-20 SMALL
Calibration rig

155.6102 GPM (≙ 100%)
Calibrated full scale

Current 4 - 20 mA
Calibrated output

0.9152
Calibration factor

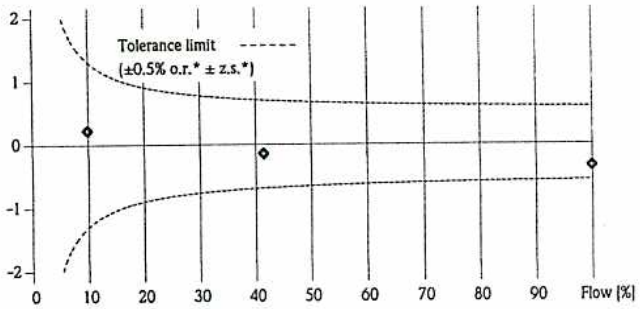
0
Zero point

72.2 °F
Water temperature

Flow [%]	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ o.r.* [%]	Outp.** [mA]
10.0	15.5	61.2	15.818	15.853	0.22	5.60
41.6	64.7	61.2	66.050	65.948	-0.15	10.64
41.6	64.8	61.3	66.120	66.024	-0.14	10.65
100.1	155.8	61.2	158.973	158.403	-0.36	19.96
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate
**Calculated value (4 - 20 mA)

Measured error % o.r.



*z.s.: Zero stability

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

Jim Baase

01-31-2005
Date of calibration

Jim Baase
Operator

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

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

Endress+Hauser

People for Process Automation

Parameter Setting

1304707

41729921 Purchase order number	PROMAG 23 P Transmitter/Sensor
US-49311914-10 / Endress+Hauser Flowtec Order N°/Manufacturer	2" Nominal diameter
23P50-AL1A1AA022AW Order code	FIT-1203 Tag N°
6C037116000 Serial N°	

Current Output 1	
Value for 0/4mA	0 USgal/min
Value for 20mA	75 USgal/min
Current Span	4-20mA HART US

The above parameters are set according to your order.
Please refer to the Operating Manual for any parameters not mentioned.

01-31-2005
Date

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

***CH2M HILL* INSTRUMENT CALIBRATION SHEET** Rev.06.05.92

COMPONENT	MANUFACTURER	PROJECT
Code:	Name: Endress + Hauser	Number:
Name:	Model: 23P50-AL1AA022AW	Name: Topock IM3
	Serial #: 6C0371160000	

FUNCTIONS

	RANGE	VALUE	UNITS	COMPUTING FUNCTIONS? Y / (N)	CONTROL? Y / (N)
Indicate? (Y) / N	Chart:			Describe:	Action? direct / reverse
Record? Y / (N)	Scale:	0-25	gpm		Modes? P / I / D
					SWITCH? Y / (N)
Transmit/	Input:	0-25	GPM		Unit Range:
Convert? (Y) / N	Output:	4-20	mA		Differential: fixed/adjustable
					Reset? automatic / manual

ANALOG CALIBRATIONS

REQUIRED			AS CALIBRATED			
Input	Indicated	Output	Increasing Input		Decreasing Input	
			Indicated	Output	Indicated	Output
0.0	0.0	4.0				
6.25	6.25	8.0				
12.5	12.50	12.0				
18.75	18.75	16.0				
25.0	25.0	20.0				
CONTROL MODE SETTINGS:			P:	I:	D:	

DISCRETE CALIBRATIONS

REQUIRED			AS CALIBRATED		Note. No
Number	Trip Point (note rising or falling)	Reset Pt.	Trip Point (note rising or falling)	Reset Pt.	
1.					
2.					
3.					
4.					
5.					
6.					
7.					

#	NOTES:	Component Calibrated and Ready for Start-up
	Verified Model No. & Tag	
	Reprogrammed from 0-75 gpm to 0-25	By: C. Hastings
	Programmed Tag & Description	Date: 4-20-05
	Simulated output: 4, 8, 12, 16, & 20 ma	Tag No.: FIT-1203

Appendix C
Daily Volumes of Groundwater Treated

January 2006 Operational Data
IM-3 Groundwater Extraction and Treatment System
PG&E Topock Compressor Station, Needles California

			Extraction Well System (1)					Injection Well System			RO Brine
Month	**Day**	**Year**	**TW-2S (gallons)**	**TW-2D (gallons)**	**TW-3D (gallons)**	**PE-1 (gallons)**	**Total (gallons)**	**IW-02 (gallons)**	**IW-03 (gallons)**	**Total (gallons)**	**(gallons)**
January	1	2006	---	84,624	108,894	---	193,518	181,257	---	181,257	14,845
January	2	2006	---	84,836	108,655	---	193,491	171,078	---	171,078	18,403
January	3	2006	---	84,861	108,501	---	193,361	176,844	---	176,844	18,504
January	4	2006	---	84,953	108,367	---	193,320	166,007	---	166,007	14,216
January	5	2006	---	84,740	108,784	---	193,525	172,470	---	172,470	18,176
January	6	2006	---	84,744	111,225	---	195,969	177,463	---	177,463	19,067
January	7	2006	---	84,587	111,313	---	195,899	178,380	---	178,380	18,373
January	8	2006	---	84,741	111,081	---	195,822	175,107	---	175,107	21,737
January	9	2006	---	84,506	111,217	---	195,722	186,678	---	186,678	13,758
January	10	2006	---	84,388	111,310	---	195,698	183,522	---	183,522	10,338
January	11	2006	---	84,395	111,277	---	195,672	187,889	---	187,889	15,132
January	12	2006	---	84,489	111,152	---	195,641	178,545	---	178,545	12,672
January	13	2006	---	84,283	111,272	---	195,554	181,867	---	181,867	13,720
January	14	2006	---	84,255	111,225	---	195,480	183,681	---	183,681	11,368
January	15	2006	---	84,381	111,109	---	195,491	178,432	---	178,432	13,194
January	16	2006	---	84,150	111,360	---	195,510	180,805	---	180,805	14,262
January	17	2006	---	39,245	38,363	---	77,608	57,809	---	57,809	3,423
January	18	2006	---	83,558	79,587	---	163,144	153,919	---	153,919	14,110
January	19	2006	---	84,634	111,287	---	195,921	173,897	---	173,897	13,858
January	20	2006	---	84,427	111,413	---	195,840	189,464	---	189,464	13,823
January	21	2006	---	1,362	1,805	---	3,166	8	---	8	-70
January	22	2006	---	36,973	29,142	---	66,115	42,407	---	42,407	14,241
January	23	2006	---	84,621	111,384	---	196,005	194,906	---	194,906	11,141
January	24	2006	---	84,658	111,281	---	195,939	188,639	---	188,639	14,181
January	25	2006	---	44,056	123,544	20,192	187,792	171,896	---	171,896	14,048
January	26	2006	---	-135	134,236	51,443	185,544	165,618	---	165,618	17,887
January	27	2006	---	-136	135,676	55,308	190,848	174,864	---	174,864	15,513
January	28	2006	---	-136	138,497	54,855	193,216	176,227	---	176,227	18,375
January	29	2006	---	-133	139,178	53,559	192,604	172,804	---	172,804	18,257
January	30	2006	---	-124	139,220	53,459	192,555	170,601	---	170,601	18,163
January	31	2006	---	-124	139,413	53,065	192,354	174,475	---	174,475	14,464
Total Monthly Volumes (gal)			---	**1,895,680**	**3,310,767**	**341,880**	**5,548,327**	**5,067,560**	---	**5,067,560**	**449,178**
Average Pump/Injection Rates (gpm)			---	**42.5**	**74.2**	**7.7**	**124.3**	**113.5**	---	**113.5**	**10.1**

NOTES:
gal: gallons
gpm: gallons per minute
RO: Reverse Osmosis
(1) Negative daily volumes reflect periods when extraction well TW-3D was offline and are a result of small computational errors. The negative values are nonetheless kept as part of the monthly record for any well (injection or extraction) that was operated during the month to maintain consistency with the onsite electronic records.

February 2006 Operational Data
IM-3 Groundwater Extraction and Treatment System
PG&E Topock Compressor Station, Needles California

			Extraction Well System					Injection Well System (1)			RO Brine
Month	**Day**	**Year**	**TW-2S (gallons)**	**TW-2D (gallons)**	**TW-3D (gallons)**	**PE-1 (gallons)**	**Total (gallons)**	**IW-02 (gallons)**	**IW-03 (gallons)**	**Total (gallons)**	**(gallons)**
February	1	2006	---	---	139,301	53,141	192,443	175,420	-162	175,257	17,929
February	2	2006	---	---	139,570	52,567	192,137	176,396	-160	176,236	14,167
February	3	2006	---	---	137,886	51,859	189,746	177,495	-157	177,338	14,641
February	4	2006	---	---	141,026	51,878	192,903	173,121	-159	172,962	20,082
February	5	2006	---	---	142,978	52,010	194,988	171,573	-163	171,410	16,181
February	6	2006	---	---	142,930	52,204	195,134	174,489	-167	174,322	16,672
February	7	2006	---	---	140,860	50,480	191,340	170,821	-163	170,659	18,227
February	8	2006	---	---	136,426	49,850	186,276	165,142	-156	164,986	14,587
February	9	2006	---	---	141,274	54,244	195,518	182,860	-157	182,703	18,224
February	10	2006	---	---	141,120	54,903	196,023	186,573	-163	186,410	18,810
February	11	2006	---	---	141,048	54,925	195,973	171,795	-164	171,631	14,467
February	12	2006	---	---	141,491	54,408	195,898	178,297	-161	178,136	19,813
February	13	2006	---	---	141,718	53,985	195,703	181,421	-168	181,253	14,855
February	14	2006	---	---	139,219	52,249	191,468	163,773	-160	163,613	18,270
February	15	2006	---	---	141,683	53,233	194,916	188,187	-161	188,025	15,920
February	16	2006	---	---	140,965	52,845	193,809	173,487	-168	173,319	17,216
February	17	2006	---	---	144,834	47,472	192,307	178,084	-165	177,920	17,376
February	18	2006	---	---	141,383	53,047	194,429	175,061	-165	174,896	15,354
February	19	2006	---	---	141,691	52,785	194,475	174,123	-166	173,957	17,824
February	20	2006	---	---	141,845	52,775	194,620	179,234	-169	179,064	18,444
February	21	2006	---	---	141,528	52,646	194,174	170,686	-168	170,518	14,758
February	22	2006	---	---	141,807	52,552	194,359	176,851	-167	176,684	18,388
February	23	2006	---	---	141,680	52,518	194,198	176,998	-165	176,833	16,989
February	24	2006	---	---	146,773	43,737	190,510	76,962	100,957	177,919	15,635
February	25	2006	---	---	129,670	49,577	179,247	-120	134,843	134,723	20,160
February	26	2006	---	---	141,496	52,533	194,029	-112	182,575	182,463	18,555
February	27	2006	---	---	141,725	52,935	194,661	63,743	119,712	183,455	18,422
February	28	2006	---	---	141,642	52,907	194,549	179,984	-153	179,831	15,312
Total Monthly Volumes (gal)			---	---	**3,945,567**	**1,460,265**	**5,405,832**	**4,362,343**	**534,179**	**4,896,522**	**477,279**
Average Pump/Injection Rates (gpm)			---	---	**97.9**	**36.2**	**134.1**	**108.2**	**13.2**	**121.4**	**11.8**

NOTES:
gal: gallons
gpm: gallons per minute
RO: Reverse Osmosis
(1) Negative Daily Volumes reflect periods when the injection well was offline and are a result of small computational errors. The negative values are nonetheless kept as part of the monthly record for any well (injection or extraction) that was operated during the month to maintain consistency with the onsite electronic records.

March 2006 Operational Data
IM-3 Groundwater Extraction and Treatment System
PG&E Topock Compressor Station, Needles California

			Extraction Well System					Injection Well System (1)			RO Brine
Month	**Day**	**Year**	**TW-2S (gallons)**	**TW-2D (gallons)**	**TW-3D (gallons)**	**PE-1 (gallons)**	**Total (gallons)**	**IW-02 (gallons)**	**IW-03 (gallons)**	**Total (gallons)**	**(gallons)**
March	1	2006	---	---	141,489	52,990	194,479	179,179	---	179,179	17,455
March	2	2006	---	---	141,567	52,891	194,458	174,126	---	174,126	18,278
March	3	2006	---	---	141,670	52,724	194,393	183,092	---	183,092	16,097
March	4	2006	---	---	141,456	52,867	194,323	176,144	---	176,144	17,503
March	5	2006	---	---	141,264	52,440	193,704	167,876	---	167,876	14,439
March	6	2006	---	---	140,979	52,630	193,609	182,443	---	182,443	18,201
March	7	2006	---	---	137,930	51,932	189,862	173,719	---	173,719	15,741
March	8	2006	---	---	141,127	50,537	191,664	177,133	---	177,133	16,828
March	9	2006	---	---	140,785	54,333	195,118	178,417	---	178,417	17,927
March	10	2006	---	---	149,440	40,222	189,663	174,782	---	174,782	14,843
March	11	2006	---	---	152,210	35,284	187,494	150,361	---	150,361	14,266
March	12	2006	---	---	139,164	51,668	190,832	184,546	---	184,546	18,829
March	13	2006	---	---	141,212	53,312	194,523	181,607	---	181,607	14,727
March	14	2006	---	---	140,911	53,604	194,515	175,913	---	175,913	18,324
March	15	2006	---	---	139,500	52,842	192,342	176,375	---	176,375	18,376
March	16	2006	---	---	141,856	52,121	193,978	176,600	---	176,600	18,412
March	17	2006	---	---	141,895	51,443	193,338	167,529	---	167,529	14,604
March	18	2006	---	---	142,886	51,031	193,917	186,455	---	186,455	18,421
March	19	2006	---	---	143,501	49,854	193,355	158,198	---	158,198	16,692
March	20	2006	---	---	144,423	49,115	193,538	192,316	---	192,316	17,069
March	21	2006	---	---	144,431	49,429	193,861	170,541	---	170,541	18,297
March	22	2006	---	---	144,299	49,563	193,862	178,284	---	178,284	15,039
March	23	2006	---	---	143,316	51,088	194,404	173,597	---	173,597	18,210
March	24	2006	---	---	142,828	51,267	194,095	177,856	---	177,856	18,281
March	25	2006	---	---	124,159	44,659	168,818	151,224	---	151,224	14,278
March	26	2006	---	---	125,162	45,616	170,778	153,895	---	153,895	14,804
March	27	2006	---	---	142,217	51,264	193,480	170,748	---	170,748	17,514
March	28	2006	---	---	142,198	51,140	193,338	176,598	---	176,598	15,688
March	29	2006	---	---	142,303	50,730	193,033	171,225	---	171,225	18,263
March	30	2006	---	---	141,456	50,526	191,981	186,583	---	186,583	18,886
March	31	2006	---	---	139,791	50,817	190,608	177,862	---	177,862	15,879
Total Monthly Volumes (gal)			---	---	**4,377,424**	**1,559,939**	**5,937,363**	**5,405,223**	**0**	**5,405,223**	**522,172**
Average Pump/Injection Rates (gpm)			---	---	**98.1**	**34.9**	**133.0**	**121.1**	**0.0**	**121.1**	**11.7**

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

April 2006 Operational Data
IM-3 Groundwater Extraction and Treatment System
PG&E Topock Compressor Station, Needles California

			Extraction Well System					Injection Well System			RO Brine
Month	**Day**	**Year**	**TW-2S (gallons)**	**TW-2D (gallons)**	**TW-3D (gallons)**	**PE-1 (gallons)**	**Total (gallons)**	**IW-02 (gallons)**	**IW-03 (gallons)**	**Total (gallons)**	**(gallons)**
April	1	2006	---	---	142,451	50,326	192,777	168,803	---	168,803	14,589
April	2	2006	---	---	145,485	49,903	195,389	184,102	---	184,102	18,197
April	3	2006	---	---	142,247	49,701	191,948	176,989	---	176,989	14,395
April	4	2006	---	---	99,989	36,157	136,146	110,472	---	110,472	10,786
April	5	2006	---	---	125,105	45,824	170,929	177,792	---	177,792	15,070
April	6	2006	---	---	134,003	51,721	185,725	168,792	---	168,792	14,245
April	7	2006	---	---	136,603	50,265	186,868	145,376	---	145,376	19,667
April	8	2006	---	---	137,332	49,255	186,587	188,154	---	188,154	14,269
April	9	2006	---	---	141,507	49,558	191,064	176,761	---	176,761	18,361
April	10	2006	---	---	144,646	49,927	194,573	173,268	---	173,268	18,899
April	11	2006	---	---	144,609	49,958	194,568	174,880	---	174,880	17,806
April	12	2006	---	---	123,973	44,531	168,504	133,607	---	133,607	12,493
April	13	2006	---	---	143,120	51,594	194,714	188,280	---	188,280	19,127
April	14	2006	---	---	139,404	50,214	189,617	165,270	---	165,270	18,993
April	15	2006	---	---	143,130	51,798	194,928	178,565	---	178,565	16,930
April	16	2006	---	---	143,561	51,166	194,726	181,903	---	181,903	16,193
April	17	2006	---	---	143,577	51,018	194,595	184,968	---	184,968	18,719
April	18	2006	---	---	143,743	50,735	194,478	179,503	---	179,503	17,459
April	19	2006	---	---	141,572	51,143	192,715	149,587	---	149,587	20,424
April	20	2006	---	---	143,221	51,971	195,193	185,073	---	185,073	23,773
April	21	2006	---	---	143,515	51,441	194,955	174,954	---	174,954	18,125
April	22	2006	---	---	143,875	50,964	194,839	186,083	---	186,083	14,579
April	23	2006	---	---	144,057	50,695	194,752	171,504	---	171,504	18,147
April	24	2006	---	---	143,745	50,352	194,098	180,655	---	180,655	14,526
April	25	2006	---	---	143,903	49,937	193,840	174,410	---	174,410	18,188
April	26	2006	---	---	46,446	15,917	62,364	38,946	---	38,946	10,253
April	27	2006	---	---	144,171	50,864	195,035	186,754	---	186,754	21,901
April	28	2006	---	---	144,838	50,112	194,950	178,523	---	178,523	14,414
April	29	2006	---	---	145,083	49,356	194,440	177,921	---	177,921	14,415
April	30	2006	---	---	144,828	49,124	193,952	177,759	---	177,759	15,437
Total Monthly Volumes (gal)			---	---	**4,103,740**	**1,455,527**	**5,559,267**	**5,039,655**	---	**5,039,655**	**500,381**
Average Pump/Injection Rates (gpm)			---	---	**95.0**	**33.7**	**128.7**	**116.7**	---	**116.7**	**11.6**

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

May 2006 Operational Data
IM-3 Groundwater Extraction and Treatment System
PG&E Topock Compressor Station, Needles California

			Extraction Well System					Injection Well System			RO Brine
Month	**Day**	**Year**	**TW-2S (gallons)**	**TW-2D (gallons)**	**TW-3D (gallons)**	**PE-1 (gallons)**	**Total (gallons)**	**IW-02 (gallons)**	**IW-03 (gallons)**	**Total (gallons)**	**(gallons)**
May	1	2006	---	---	144,303	49,862	194,164	182,130	---	182,130	14,190
May	2	2006	---	---	143,811	50,538	194,349	177,016	---	177,016	16,940
May	3	2006	---	---	142,830	49,076	191,907	174,173	---	174,173	15,338
May	4	2006	---	---	145,412	47,634	193,046	175,331	---	175,331	14,096
May	5	2006	---	---	145,803	47,213	193,015	153,137	---	153,137	18,828
May	6	2006	---	---	146,060	46,695	192,754	186,806	---	186,806	14,308
May	7	2006	---	---	145,999	46,763	192,762	176,820	---	176,820	14,266
May	8	2006	---	---	131,851	47,566	179,416	166,108	---	166,108	14,131
May	9	2006	---	---	136,151	50,220	186,371	166,015	---	166,015	14,015
May	10	2006	---	---	131,461	51,228	182,689	174,532	---	174,532	13,345
May	11	2006	---	---	122,494	50,874	173,368	173,593	---	173,593	19,484
May	12	2006	---	---	143,368	50,443	193,810	177,034	---	177,034	14,740
May	13	2006	---	---	132,787	45,473	178,260	155,959	---	155,959	15,352
May	14	2006	---	---	146,133	47,418	193,551	180,574	---	180,574	15,578
May	15	2006	---	---	146,170	48,558	194,728	182,502	---	182,502	16,041
May	16	2006	---	---	145,814	48,858	194,673	171,282	---	171,282	14,032
May	17	2006	---	---	144,069	48,293	192,362	182,097	---	182,097	18,003
May	18	2006	---	---	145,562	48,548	194,110	174,565	---	174,565	15,120
May	19	2006	---	---	145,837	48,111	193,948	185,404	---	185,404	13,986
May	20	2006	---	---	145,870	47,994	193,864	174,941	---	174,941	14,330
May	21	2006	---	---	122,198	42,011	164,208	146,111	---	146,111	15,699
May	22	2006	---	---	115,630	41,782	157,413	133,892	---	133,892	10,655
May	23	2006	---	---	143,352	51,387	194,739	180,884	---	180,884	14,168
May	24	2006	---	---	104,714	37,151	141,865	134,944	---	134,944	20,860
May	25	2006	---	---	127,065	43,719	170,784	146,974	---	146,974	20,775
May	26	2006	---	---	144,261	46,552	190,812	173,248	---	173,248	13,990
May	27	2006	---	---	145,409	49,662	195,070	181,106	---	181,106	17,764
May	28	2006	---	---	145,296	51,650	196,947	177,418	---	177,418	15,239
May	29	2006	---	---	144,907	52,523	197,429	184,620	---	184,620	14,594
May	30	2006	---	---	144,253	53,097	197,350	175,945	---	175,945	14,026
May	31	2006	---	---	142,629	52,087	194,715	180,667	---	180,667	17,051
Total Monthly Volumes (gal)			---	---	**4,311,499**	**1,492,985**	**5,804,484**	**5,305,831**	---	**5,305,831**	**480,943**
Average Pump/Injection Rates (gpm)			---	---	**96.6**	**33.4**	**130.0**	**118.9**	---	**118.9**	**10.8**

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

June 2006 Operational Data
IM-3 Groundwater Extraction and Treatment System
PG&E Topock Compressor Station, Needles California

			Extraction Well System					Injection Well System			RO Brine
Month	**Day**	**Year**	**TW-2S (gallons)**	**TW-2D (gallons)**	**TW-3D (gallons)**	**PE-1 (gallons)**	**Total (gallons)**	**IW-02 (gallons)**	**IW-03 (gallons)**	**Total (gallons)**	**(gallons)**
June	1	2006	---	---	142,051	52,197	194,248	182,273	---	182,273	15,026
June	2	2006	---	---	144,594	52,965	197,558	175,749	---	175,749	16,147
June	3	2006	---	---	140,874	51,573	192,448	168,531	---	168,531	14,368
June	4	2006	---	---	139,191	52,838	192,029	172,608	---	172,608	15,033
June	5	2006	---	---	146,250	51,539	197,788	190,491	---	190,491	18,951
June	6	2006	---	---	147,596	44,389	191,985	177,753	---	177,753	14,963
June	7	2006	---	---	144,701	52,662	197,364	179,667	---	179,667	14,808
June	8	2006	---	---	136,101	50,507	186,608	158,294	---	158,294	19,356
June	9	2006	---	---	143,966	52,320	196,285	188,435	---	188,435	15,069
June	10	2006	---	---	145,203	52,150	197,353	177,270	---	177,270	20,588
June	11	2006	---	---	144,103	52,095	196,198	180,023	---	180,023	17,463
June	12	2006	---	---	113,652	48,621	162,273	145,142	---	145,142	17,294
June	13	2006	---	---	84,417	36,525	120,943	99,436	---	99,436	10,545
June	14	2006	---	---	108,386	34,700	143,086	125,707	---	125,707	17,680
June	15	2006	---	---	146,505	48,415	194,920	183,192	---	183,192	19,084
June	16	2006	---	---	144,650	47,777	192,427	178,216	---	178,216	21,125
June	17	2006	---	---	144,418	48,181	192,598	165,328	---	165,328	18,467
June	18	2006	---	---	144,067	48,769	192,836	169,605	---	169,605	19,581
June	19	2006	---	---	144,045	48,923	192,967	179,158	---	179,158	20,279
June	20	2006	---	---	144,269	49,089	193,358	162,946	---	162,946	19,444
June	21	2006	---	---	143,567	50,327	193,894	186,144	---	186,144	19,512
June	22	2006	---	---	143,591	50,223	193,813	168,759	---	168,759	19,492
June	23	2006	---	---	143,820	49,627	193,447	171,028	---	171,028	19,974
June	24	2006	---	---	133,406	45,418	178,824	159,634	---	159,634	20,495
June	25	2006	---	---	137,181	51,384	188,565	175,204	---	175,204	19,168
June	26	2006	---	---	136,484	52,994	189,479	162,983	---	162,983	19,020
June	27	2006	---	---	141,002	52,572	193,573	173,440	---	173,440	23,009
June	28	2006	---	---	141,405	52,615	194,020	176,612	---	176,612	19,113
June	29	2006	---	---	129,330	50,478	179,808	154,677	---	154,677	19,034
June	30	2006	---	---	130,139	51,489	181,628	162,290	---	162,290	16,616
Total Monthly Volumes (gal)			---	---	**4,128,962**	**1,483,362**	**5,612,324**	**5,050,593**	---	**5,050,593**	**540,703**
Average Pump/Injection Rates (gpm)			---	---	**95.6**	**34.3**	**129.9**	**116.9**	---	**116.9**	**12.5**

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

Appendix D
Operations and Maintenance Log

APPENDIX D

Semi Annual Operations and Maintenance Log January 1, 2006 through June 30, 2006 Interim Measures No. 3 Groundwater Treatment System

Records of IM-3 Operations and Maintenance activities are maintained onsite using operations software. Periods of planned and unplanned treatment system and resulting extraction system downtime between January 2006 and June 2006 attributed to system operations and maintenance are listed below.

January 2006

- **January 17, 2006 (planned)**: A scheduled shutdown of the extraction well system was conducted to complete the PE-1 pipeline construction tie-ins to the IM-3 facility. Additional IM-3 maintenance was completed concurrent with the construction tie-ins. The extraction well system was shut down at 8:08 am. The extraction system was re-started at 12:25 pm, at reduced pumping rates between 40 and 70 gpm. The pumping rate was increased to approximately 135 gpm by 8:30 am on January 18. Extraction system downtime was approximately 4 hours 17 minutes.
- **January 21 and 22, 2006 (unplanned):** The IM-3 extraction well system was shut-off at 12:26 am on Saturday, January 21. A hose ruptured during a clean-in-place of the spare microfilter modules, resulting in approximately 200 gallons of citric acid solution draining into the process drain tank (T-900), and being introduced back into the system. The citric acid affected the iron oxidation process and solids removal in the clarifier. The system operated in a re-circulation mode until plant conditions returned to normal. The extraction well system was re-started on Sunday, January 22, at a flow rate of 78 gpm at 12:31 pm and increased to 135 gpm at 7:05 pm. No non-compliant water was discharged into the injection wells during this event. Extraction system downtime was approximately 36 hours 5 minutes.
- **January 25 and 26, 2006 (planned):** Commissioning of extraction well PE-1 occurred on January 25, 2006 at an initial pumping rate of approximately 37 gpm. Full-time operation of extraction wells TW-3D and PE-1 at the target pumping rate of 135 gpm began on January 26, 2006. Extraction well TW-2D was taken offline.

February 2006

- **February 8, 14, 17, 24, and 26 (unplanned)**: Extraction well PE-1 was automatically shut down for short-periods due to low water level above the well pump. This alarm condition protects the submersible well pump from damage due to overheating. The well pump was re-started after groundwater conditions had sufficiently recovered in the well. Periods of PE-1 downtime occurred on February 8 (50 minutes), February 14 (10 minutes), February 17 (145 minutes), February 24 (250 minutes over two periods), and

February 26 (10 minutes). Extraction well TW-3D continued to operate during these periods of PE-1 downtime.

- **February 25 (planned):** The IM-3 extraction well system was shut-down at 2:53 am on February 25 while switching microfilter membrane modules. Extraction wells TW-3D and PE-1 were re-started at 3:55 pm. TW-3D was shut down again from 4:51 pm until 5:40 pm until normal operations resumed. Extraction system downtime (i.e., no extraction wells operating) was 1 hour 3 minutes.

March 2006

- **March 5, 8, 10, 11 and 15, 2006 (unplanned)**: Extraction well PE-1 was automatically shut down due to a low water level above the well pump. This alarm condition protects the submersible well pump from damage due to overheating. The well pump was re-started after groundwater levels had sufficiently recovered in the well. Periods of PE-1 downtime occurred on March 5 (9 minutes), March 8 (70 minutes), March 10 and 11 (overnight shutdown for 14 hours 54 minutes), and March 15 (11 minutes). Since March 15, the target pump rate from PE-1 was reduced from approximately 37 gpm to 36 gpm to reduce the potential for over-pumping in the well and resulting unplanned shutdown periods. Extraction well TW-3D continued to operate during each of these periods of PE-1 downtime and was temporarily increased to approximately 120 gpm during the longer downtime events until PE-1 was brought back into service.

- **March 7, 2006 (unplanned):** The extraction well system was shut down from 7:00 pm to 7:25 pm (26 minutes) due to power supply issues with City of Needles power.

- **March 25 and 26, 2006 (unplanned):** The extraction well system was shut down from 8:54 pm on March 25 to 2:42 am on March 26 to repair a pinhole leak on the reverse osmosis unit piping. Extraction system downtime was 5 hours 49 minutes.

April 2006

- **April 4, 2006 (planned)**: The extraction well system was shut down from 10:24 a.m. until 4:50 p.m. to complete non-intrusive testing of the high-pressure piping on the reverse osmosis unit. Extraction system downtime was 6 hours, 26 minutes.

- **April 5, 2006 (unplanned)**: The extraction well system was shut down from 1:50 p.m. until 3:44 p.m. due to a power failure at the site. Extraction system downtime was 1 hour, 54 minutes.

- **April 6, 2006 (unplanned)**: The extraction well system was shut down from 1:02 p.m. until 1:12 p.m. to switch from generator power back to Needles power. Extraction system downtime was 10 minutes.

- **April 12, 2006 (unplanned)**: The extraction well system was shut down from 3:22 p.m. until 5:58 p.m. due to a pump motor failure on the reverse osmosis unit. Extraction system downtime was 2 hours, 36 minutes.

- **April 14, 2006 (unplanned)**: The extraction well system was shut down from 3:41 p.m. until 3:56 p.m. and from 6:27 p.m. to 6:37 p.m. due to a power failure at the site. Extraction system downtime on April 14 was 25 minutes.

- **April 19, 2006 (unplanned)**: The IM No. 3 extraction well system was shut down from 11:42 a.m. until 11:51 a.m. during a change out of microfilter modules. Extraction system downtime was 9 minutes.

- **April 26, 2006 (planned)**: The extraction well system was shut down from 2:11 a.m. until 6:20 p.m. to complete general facility maintenance. Extraction system downtime was 16 hours, 9 minutes.

May 2006

- **May 9, 2006 (unplanned)**: The extraction well system was shut down from 12:21 a.m. until 12:55 a.m. due to a Needles power failure at the site. Another shut down occurred from 10:23 a.m. to 10:33 am to return operations from generator power to Needles power. Extraction system downtime was 44 minutes.

- **May 21, 2006 (unplanned)**: The extraction well system was shut down from 11:47 a.m. to 1:17 pm to switch from inline microfilter modules (inline) to clean offline microfilter modules. Another shutdown occurred from 3:04 p.m. to 5:01 p.m. due to power failure at the site. Extraction system downtime was 3 hours 27 minutes.

- **May 22, 2006 (unplanned)**: The extraction well system was shut down from 2:40 a.m. to 5:16 a.m. due to power supply issues as the site. Another shut down occurred from 6:41 p.m. to 8:21 p.m. due to a flow control valve restricting flow to Injection Well IW-2. Extraction system downtime was 4 hours 16 minutes.

- **May 24, 2006 (planned)**: The IM No. 3 extraction well system was shut down from 6:21 a.m. until 12:42 a.m. to install a rental reverse osmosis unit. The rental until will provide temporary service as required while upgrades in piping are completed on the permanent reverse osmosis unit over the next two to three months. Extraction system downtime was 6 hours 21 minutes.

- **May 25, 2006 (planned)**: The IM No. 3 extraction well system was shut down from 9:30 a.m. until 11:46 a.m. to return service to the permanent reverse osmosis unit after operating the temporary reverse osmosis unit for approximately 24 hours. Extraction system downtime was 2 hours 16 minutes.

June 2006

- **June 1, 2006 (unplanned)**: The extraction well system was shut down from 2:29 a.m. until 2:40 a.m. to train new operators on re-starting the facility on back-up power. Extraction system downtime was 11 minutes.

- **June 3, 2006 (unplanned)**: The extraction well system was shut down from 2:23 pm to 2:27 p.m. to switch to backup power due to sagging power from Needles Electric and from 4:38 pm to 5:00 p.m. to switch back to Needles power once proper power levels were restored. Extraction system downtime was 26 minutes.

- **June 4, 2006 (unplanned)**: The extraction well system was shut down from 11:29 a.m. to 11:44 a.m. to switch to backup power due to sagging power from Needles Electric and from 6:10 p.m. to 6:24 p.m. to switch back to Needles power once proper power levels were restored. Extraction system downtime was 29 minutes.

- **June 6, 2006 (unplanned)**: The extraction well system was shut down from 10:18 a.m. to 10:22 a.m. to re-start the extraction well system after a low water level alarm in PE-1 and from 2:48 p.m. to 2:54 p.m. to train new operators on re-starting the facility on back-up power. Extraction system downtime was 10 minutes.

- **June 8, 2006 (planned)**: The extraction well system was shut down from 9:24 a.m. to 10:36 a.m. to switch from the east bank of microfilter modules to the west bank of microfilter modules. Extraction system downtime was 1 hour 12 minutes.

- **June 12, 2006 (unplanned)**: The extraction well system was shut down from 1:52 p.m. to 3:41 p.m. to switch from the west bank of microfilter modules to the east bank of microfilter modules. Extraction system downtime was 1 hour 49 minutes.

- **June 13 and 14, 2006 (planned):** The extraction well system pump rate was reduced at 10:40 a.m. on June 13, 2006 due to suspected residual polymer fouling of the east bank of microfilter modules that were brought into service on June 12. The west bank of modules that were taken out of service on June 12 were immediately cleaned using a caustic and sodium hypochlorite solutions to remove the suspected foulants. The reduced pump rate ranged between 80 and 90 gpm during this time. The west bank of modules was returned to service after cleaning was complete on June 14, 2006 (see June 14 downtime below) and the pump rate was back to the target rate of 135 gpm by 1:40 p.m.

- **June 14, 2006 (unplanned)**: The extraction well system was shut down from 10:26 a.m. to 11:16 a.m. and from 12:23 p.m. to 1:02 p.m. to switch from the east bank of microfilter modules to the west bank of microfilter modules. Extraction system downtime was 1 hour 29 minutes.

- **June 24, 2006 (unplanned)**: The extraction well system was shut down from 9:00 p.m. to 10:48 p.m. due to a loss of Needles Power and difficulties re-starting on back-up power. Extraction system downtime was 1 hour 36 minutes.

- **June 25, 2006 (unplanned)**: The extraction well system was shut down from 6:13 a.m. to 6:26 a.m. to switch back to Needles Power and from 9:54 a.m. to 10:07 a.m. return to back-up power due to continuing sagging power supply. Extraction system downtime was 26 minutes.

- **June 26, 2006 (unplanned)**: The extraction well system was shut down from 8:53 a.m. to 8:58 a.m. to switch back to Needles Power and from 12:43 p.m. to 1:06 p.m. for inspection of the onsite transformer by Needles Power. Extraction system downtime was 28 minutes.

- **June 29, 2006 (unplanned)**: The extraction well system was shut down from 9:10 a.m. to 10:20 a.m. and from 10:27 p.m. to 11:01 p.m. to inspect and replace the air relief valves (ARVs) along the extraction well and brine pipelines between the MW-20 Bench and IM-3 Facility. The replacement of ARVs was completed as a follow-up preventative measure after replacing a leaking ARV on the treated water pipeline. Extraction system downtime was 1 hour 42 minutes.

- **June 30, 2006 (unplanned)**: The extraction well system was shut down from 2:20 m. to 2:52 a.m., 7:33 a.m. to 7:53 a.m., and from 7:37 p.m. to 8:08 p.m. due to power supply losses from Needles Power. Extraction system downtime was 1 hour 52 minutes.