Pacific Gas and Electric Company

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January 15, 2007

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, Needles, California
Interim Measure No. 3 Groundwater Treatment System
Board Order R7-2006-0060 – Discharge to Injection Wells
December 2006 Monitoring / Fourth Quarter 2006 Monitoring / Semi-Annual
July 1, 2006 – December 31, 2006 Operation and Maintenance Report
WDID No. 7B 36 2033 001

Dear Mr. Perdue:

Enclosed is the Board Order R7-2006-0060 December 2006 Monitoring / Fourth Quarter 2006 Monitoring / July 1 to December 31, 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 September 20, 2006 by the Colorado River Basin Regional Water Quality Control Board (Water Board) under Order R7-2006-0060. These WDRs apply to IM No. 3 Treatment System discharge by subsurface injection.

Order R7-2006-0060 is the successor to Order R7-2004-0103. The IM No. 3 Groundwater Treatment System operated in compliance with Order R7-2004-0103 from July 1, 2006 to September 20, 2006; and in compliance with Order R7-2006-0060 from September 20, 2006 to December 31, 2006.

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

Sincerely,

Curt Russell
Topock Onsite Project Manager

Enclosures:

Order R7-2006-0060 December 2006 Monitoring / Fourth Quarter 2006 Monitoring / July 1 to December 31, 2006 Semi-Annual Operation and Maintenance Report for the IM No. 3 Groundwater Treatment System.

cc: José Cortez, Water Board
Liann Chavez, Water Board
Tom Vandenberg, Water Board
Aaron Yue, DTSC

December 2006 Monitoring / Fourth Quarter 2006 Monitoring / Semi-Annual Operation and Maintenance Report for July 1–December 31, 2006

Interim Measure No. 3 Groundwater Treatment System
Waste Discharge Requirements
Board Order No. R7-2006-0060
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

January 15, 2007

CH2MHILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

Combined Report:
December 2006 Monitoring Report,
Fourth Quarter 2006 Monitoring Report,
and
Semi-Annual Operation and Maintenance Report
July 1 – December 31, 2006

Interim Measure No. 3 Groundwater Treatment System
Waste Discharge Requirements Order No. R7-2006-0060
PG&E Topock Remediation Facility
Needles, California

Prepared for
Pacific Gas and Electric Company

January 15, 2007

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
HMI	human-machine interface
IM	Interim Measure
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.
TOC	total organic carbon
Truesdail	Truesdail Laboratories, Inc.
Water Board	California Regional Water Quality Control Board, Colorado River Basin Region
WDR	Waste Discharge Requirements

1.0 Introduction

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

California Regional Water Quality Control Board, Colorado River Basin Region (Water Board) Board Order No. R7-2006-0060 authorizes PG&E to inject treated groundwater into injection wells located on San Bernardino County Assessor's Parcel No. 650-151-06. Order No. R7-2006-0060 was issued September 20, 2006, and is the successor to Order No. R7-2004-0103. The Monitoring and Reporting Program (MRP) under the order requires monthly monitoring reports to be submitted by the fifteenth day of the following month.

This report covers monitoring activities related to operation of the IM No. 3 groundwater treatment system during December 2006, the Fourth Quarter 2006, and covers operation and maintenance activities during the July 1, 2006 through December 31, 2006 Semi-Annual period. The groundwater monitoring results for wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D will be submitted under separate cover, as part of the Compliance Monitoring Program.

In addition to Board Order No. R7-2006-0060, 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 Order No. R7-2004-0103 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 December 2006 Monitoring and Fourth Quarter 2006 Monitoring

IM No. 3 monitoring activities between July 1, 2006 and November 30, 2006 are included in the following monitoring reports for IM No. 3 Treatment System discharge to injection wells:

- *July 2006 Monitoring Report,* submitted to the Water Board August 15, 2006.
- *August 2006 Monitoring Report,* submitted to the Water Board September 15, 2006.
- *September 2006 / 3rd Quarter 2006 Monitoring Report,* submitted to the Water Board October 13, 2006.
- *October 2006 Monitoring Report,* submitted to the Water Board November 15, 2006.
- *November 2006 Monitoring Report,* submitted to the Water Board December 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 3rd Quarter 2006 aquatic bioassay analysis was conducted on a sludge sample collected July 5, 2006; the results were presented in the *July 2006 Monitoring Report,* submitted to the Water Board August 15, 2006. The 2nd Quarter 2006 aquatic bioassay analysis was conducted on a sludge sample collected December 1, 2006; the results are presented in this report.

3.1 Description of December 2006 Activities

Influent to the treatment facility, permitted by Order R7-2006-0060, includes the following components:

- Groundwater from extraction wells.
- Purged groundwater and water generated from rinsing field equipment during monitoring events.
- Groundwater generated during well installation, well development, and aquifer testing.

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

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

3.2 Groundwater Treatment System Flow Rates

3.2.1 Treatment System Influent Components:

Groundwater Extraction Wells Flow Rate

During December 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 during the December 2006 reporting period. The December 2006 monthly average influent flow rate from extraction wells is presented in Table 2.

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

Groundwater Monitoring Program Treated Water

During December 2006, approximately 3,150 gallons of water was generated from the groundwater monitoring program, and directed into the IM No. 3 treatment system.

Injection Wells Maintenance Program Treated Water

During December 2006, approximately 13,850 gallons of water was generated from injection wells IW-02 and IM-03 re-development, and directed into the IM No. 3 treatment system.

3.2.2 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). The December 2006 monthly average effluent flow rate to injection wells is presented in Table 2.

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). The December 2006 monthly average reverse osmosis concentrate flow rate is presented in Table 2.

Sludge

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

3.3 Sampling and Analytical Procedures

All samples were collected at the designated sampling locations and placed directly into containers provided by Truesdail Laboratories, Inc. (Truesdail) or Severn Trent

Laboratories, Inc. (STL). Sample containers were labeled and packaged according to standard sampling procedures.

The samples were stored in a sealed container chilled with ice and transported to Truesdail or STL via courier service under chain-of-custody documentation. Truesdail transported a portion of the sludge sample to MBC Applied Environmental Sciences Laboratories (MBC) for the aquatic bioassay analysis. The laboratories confirmed the samples were received in chilled condition upon arrival.

Truesdail is certified by the California Department of Health Services (Certification No. 1237) under the State of California's Environmental Laboratory Accreditation Program. STL is certified by the California Department of Health Services (Certification No. 1118) under the Environmental Laboratory Accreditation Program. MBC is certified by the California Department of Health Services (Certification # 1788) under the State of California's Environmental Laboratory Accreditation Program.

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

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

Influent, effluent, reverse osmosis concentrate, and sludge sampling was conducted in accordance with the sampling frequency required by the MRP (see Section 4.0). The December 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 Order R7-2006-0060, and the procedures and schedules approved in the *Groundwater Compliance Monitoring Plan for Interim Measures No. 3 Injection Area* submitted to the Water Board June 17, 2005 (CH2M HILL). Reporting of groundwater monitoring analytical results for the injection area (wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D) are reported in a separate document, in conjunction with groundwater level maps of the same monitoring wells.

4.0 Monitoring Analytical Results

The analytical results and laboratory reports for the IM No. 3 groundwater treatment system monitoring program between July 1, 2006 and November 30, 2006 were provided in previous monthly reports submitted to the Water Board (see Section 3.0 for a complete listing of reports).

The December 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 December 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 December 2006:

- The influent was sampled monthly; sample date December 6, 2006. Results are presented in Table 3.
- The effluent was sampled weekly; sample dates December 6, 13, 20, and 27, 2006. Results are presented in Table 4.
- The reverse osmosis concentrate was sampled monthly; sample date December 6, 2006. Results are presented in Table 5**.**
- The sludge was sampled monthly; sample date December 6, 2006. In accordance with WDRs, 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 is monthly). Results are presented in Table 6.
- The sludge is required to have an aquatic bioassay test quarterly; the 4th Quarter 2006 aquatic bioassay test was performed on the sludge sample collected December 6, 2006. The aquatic bioassay test results are presented in Table 6.

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

To evaluate the overall water chemistry of the IM No. 3 facility, three samples, in addition to the WDR required sampling and analysis, were collected from specified WDR sampling locations during November 2006:

- Influent, collected November 8, 2006
- Effluent, collected November 8, 2006
- Reverse Osmosis Concentrate (brine), collected November 15, 2006

The laboratory reports were provided in the November 2006 Monitoring Report submitted December 15, 2006. Analytical parameters include pH, TDS, electrical conductivity, turbidity, fluoride, nitrate, nitrite, and metals. No exceedances of effluent limitations were detected.

To evaluate the overall water chemistry of the IM No. 3 facility, the influent, effluent and reverse osmosis concentrate samples collected December 6, 2006 were analyzed for total organic carbon (TOC) for treatment process evaluation, in addition to the WDR required parameters. The TOC results remain comparable to baseline conditions and are included in the laboratory reports provided in Appendix A of this report.

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 Water 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 July 1, 2006 through December 31, 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 July 1, 2006 through November 30, 2006 were previously provided in the appropriate monthly monitoring report (see Section 3.0 for complete listing of reports). The December 2006 analytical results are summarized in Tables 3 through 7, and December 2006 laboratory reports are provided in Appendix A.

There were no occurrences of non-compliant discharge to the injection wells during the July 1, 2006 through December 31, 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:

- Extraction well TW-2S, influent flowmeter FIT-100, serial number 6A021F16000;
- Extraction well TW-2D, influent flowmeter FIT-101, serial number 6A022026000;
- Extraction well TW-3D, influent flowmeter FIT-102, serial number 6A022116000;
- Extraction well PE-1, influent flowmeter FIT-103, serial number 6A022216000;
- Injection well IW-2, effluent flowmeter FIT-1202, serial number 6C037016000;
- Injection well IW-3, effluent flowmeter FIT-1203, serial number 6C037116000;

- Combined flow to injection wells IW-2 and IW-3, effluent flowmeter FIT-702, serial number 7700C16160000; and
- Reverse osmosis concentrate storage tank, flowmeter FIT-701, serial number 6C037316000.

Flowmeter calibrations are scheduled annually. Flowmeters that were not replaced with re-calibrated flowmeters during the July 1, 2006 to December 31, 2006 reporting period are scheduled to be replaced in the first quarter of 2007. During the July 1, 2006 to December 31, 2006 reporting period, one flowmeter was removed from service and replaced with a manufacturer re-calibrated flowmeter:

- Injection well IW-3, FIT-1203 – flowmeter serial number 6C037116000 was replaced with flowmeter serial number 7700F216000 on December 19, 2006.

5.3 Volumes of Groundwater Treated

Data regarding daily volumes of groundwater treated are provided in Appendix C. An estimated volume of 35,187,327 gallons of groundwater was extracted and treated between July 1, 2006 and December 31, 2006. Approximately 32,272,444 gallons of treated groundwater was injected back into the Alluvial Aquifer and approximately 2,962,877 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 0.1 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, water from monitoring well purging and injection well re-development, and differences in the inventory of water in the treatment system between the beginning and end of each reporting period.

Approximately 14,540 gallons of well purge water (generated during well development, monitoring well sampling, and aquifer testing) and 30,850 gallons of injection well re-development water was treated at the IM No. 3 facility during the July 1, 2006 through December 31, 2006 semi-annual period. Treatment of this water at the IM No. 3 facility is being performed in accordance with the conditions of Order No. R7-2006-0060, and was approved by the Water Board in a letter dated January 26, 2006 to be in accordance with the conditions of Order No. R7-2004-0103.

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)

Eight containers of residual solids (i.e., sludge) were sampled and shipped off-site for disposal from July 1, 2006 through December 31, 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)
11-Jul-2006	12 yards	22,140
28-Jul-2006	12 yards	20,840
17-Aug-2006	12 yards	23,240
21-Sept-2006	12 yards	22,300
25-Oct-2006	12 yards	25,820
8-Nov-2006	12 yards	23,980
22-Nov-2006	10 yards	17,960
21-Dec-2006	12 yards	22380

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 July 1, 2006 and December 31, 2006, approximately 2,962,877 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 July 1, 2006 through December 31, 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 July 1, 2006 through December 31, 2006 reporting period.

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

- 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. Neither the pinhole leaks nor the non-intrusive testing impacted the effectiveness of the treatment operations. 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 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 with replacement piping was installed October 4, 2006, and the temporary reverse osmosis unit was returned to the vendor.

6.0 Conclusions

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

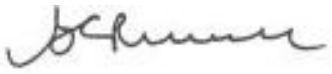
In addition, no incidents of non-compliance were identified during the reporting period, and no events that caused an immediate or potential threat to human health or the environment, or new releases of hazardous waste or hazardous waste constituents, or new solid waste management units were identified 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. Order R7-2006-0600 is the successor to Order R7-2004-0103; an additional signature authority delegation is not required, as confirmed in an email from Jose Cortez dated October 12, 2006.

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: January 15, 2007

Tables

TABLE 1
Sampling Station Descriptions
December 2006 Report for Interim Measure No. 3 Groundwater Treatment System

Sample Station	Sample ID[a]	Location
Sampling Station A: Groundwater Treatment System Influent	SC-100B-WDR-###	Sample collected from tap on pipe into T-100 (see Figure TP-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:
= Sequential sample identification number at each sample station.
[a] The sample event number is included at the end of the sample ID (e.g., SC-100B-WDR-015).

TABLE 2
Flow Monitoring Results
December 2006 Report for Interim Measure No. 3 Groundwater Treatment System

Parameter	System Influent[a,b]	System Effluent[b,c]	Reverse Osmosis Concentrate[b,d]
Average Monthly Flowrate (gpm)	133.1	124.1	9.4

Notes:
gpm: gallons per minute.
[a] Extraction wells TW-3D and PE-1 were operated during December 2006.
[b] The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates was 0.3 percent, which is within the range of acceptable accuracy considering the margin of error for onsite instrumentation, the water contained within the sludge, purge water treated at the IM-3 facility in addition to the extraction wells, and differences in the inventory of water in the treatment system between the beginning and end of the reporting period.
[c] Effluent was discharged into injection wells IW-02 and IW-03 during December 2006.
[d] Reverse Osmosis Concentrate flow meter reading from FIT-701.

TABLE 3
Board Order No. R7-2006-0060 Waste Discharge Requirements (WDRs)
Influent Monitoring Results [a]
December 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		Monthly																					
Analytes		TDS	Turbidity	Specific Conductance	pH	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate (as N)	Nitrite (as N)	Sulfate	Iron	Zinc
Units [b]		mg/L	NTU	µmhos/cm	pHunits	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L
MDL		80	0.016	0.7	0.057	0.75	1.8	1.8	0.1	0.28	0.25	0.87	0.000087	0.36	0.018	0.25	1.6	0.2	0.53	0.017	0.001	1.5	0.99	2.0
Sample ID	**Date**																							
SC-100B-WDR-076	**12/6/2006**	**4950**	**0.102**	**8360**	**7.46**	**2050**	**2040**	**ND**	**ND**	**ND**	**ND**	**ND**	**1.21**	**36.1**	**2.83**	**5.70**	**ND**	**23.0**	**ND**	**3.37**	**0.0101**	**695**	**ND**	**ND**
RL		310	0.1	2.0	2.0	52	20	50	0.5	3.0	5.0	300	0.2	10	0.2	2.1	500	5.0	20	0.2	0.005	25	300	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
MDL = method detection limit
RL = project reporting limit

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. R7-2006-0060 Waste Discharge Requirements (WDRs)
Effluent Monitoring Results[a]
December 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
MDL		80	0.016	0.7	0.057	0.75	0.18	1.8	0.1	0.28	0.25	0.87	0.000087	0.36	0.018	0.25	1.6	0.2	0.53	0.017	0.001	1.5	0.99	2.0
Sample ID	**Date**																						
SC-700B-WDR-076	**12/6/2006**	**4720**	**ND**	**6900**	**8.12**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**1.12**	**43.9**	**2.20**	**6.10**	**ND**	**14.8**	**ND**	**2.77**	**ND**	**533**	**ND**	**ND**
RL		250	0.1	2.0	2.0	1.0	0.2	50	0.5	3.0	5.0	300	0.2	10	0.2	2.1	500	5.0	20	0.2	0.005	25	300	20
SC-700B-WDR-077	**12/13/2006**	**4080**	**ND**	**6940**	**8.11**	**ND**	**ND**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
RL		310	0.1	2.0	2.0	1.0	0.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SC-700B-WDR-078	**12/20/2006**	**4250**	**ND**	**6960**	**8.12**	**ND**	**ND**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
RL		250	0.1	2.0	2.0	1.0	2.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SC-700B-WDR-079	**12/27/2006**	**5050 J**	**ND**	**7050**	**7.67**	**ND**	**ND**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
RL		250	0.1	2.0	2.0	1.0	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
MDL = method detection limit
RL = project reporting limit

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. R7-2006-0060 Waste Discharge Requirements (WDRs)
Reverse Osmosis Concentrate Results [a]
December 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		Monthly																				
Analytes		TDS	Specific Conductance	pH	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Units [b]		mg/L	µmhos/cm	pHunits	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MDL		320	0.7	0.057	0.00027	0.000088	0.0014	0.0012	0.00087	0.00074	0.0012	0.00075	0.0018	0.18	0.0012	0.00098	0.000049	0.0026	0.0066	0.003	0.00098	0.00089	0.002
Sample ID	**Date**																						
SC-701-WDR-076	**12/6/2006**	**22100**	**30600**	**7.94**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**0.0055**	**0.0194**	**11.7**	**ND**	**0.0604**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
RL		1250	2.00	2.00	0.001	0.001	0.0052	0.0052	0.30	0.0052	0.0052	0.0052	0.0104	2.00	0.0104	0.0052	0.0002	0.02	0.0104	0.0052	0.0052	0.0052	0.02

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
MDL = method detection limit
RL = project reporting limit

[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. R7-2006-0060 Waste Discharge Requirements (WDRs)
Sludge Monitoring Results[a]
December 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		Monthly [c]																		Quarterly [d]		
Analytes		Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Bioassay % Survival	Bioassay % Survival	Bioassay % Survival
Units [b]		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	at 750 mg/L [e]	at 500 mg/L [e]	at 250 mg/L [e]
MDL		4.1	0.41	12	8.1	2.0	1.2	1.6	4.1	8.1	0.36	5.1	6.1	0.081	6.1	10	2.0	10	4.1	20	100	100	100
Sample ID	**Date**																						
SC-Sludge-WDR-076	**12/6/2006**	**14000**	**82.0**	**ND**	**38.0**	**100**	**ND**	**ND**	**ND**	**ND**	**13.2**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**24.0**	**ND**	**ND**	**100**	**100**	**100**
RL		20	1.6	120	20	41	10	10	100	51	4.0	10	81	0.41	81	10	20	20	100	41	100	100	100

NOTES:

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

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

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

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

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

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

TABLE 7
Board Order No. R7-2006-0060 Waste Discharge Requirements (WDRs)
Monitoring Information
December 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-076	David Chaney	12/6/2006	1:10:00 PM	TLI	EPA 120.1	SC	12/11/2006	Tina Acquiat
					TLI	EPA 150.1	PH	12/7/2006	Tina Acquiat
					TLI	EPA 160.1	TDS	12/11/2006	Tina Acquiat
					TLI	EPA 180.1	TRB	12/7/2006	Gautam Savani
					TLI	EPA 200.7	FE	12/23/2006	Riddhi Patel
					TLI	EPA 200.7	MN	12/23/2006	Riddhi Patel
					TLI	EPA 200.7	CR	12/22/2006	Riddhi Patel
					TLI	EPA 200.7	BA	12/23/2006	Riddhi Patel
					TLI	EPA 200.7	B	12/23/2006	Riddhi Patel
					TLI	EPA 200.7	ZN	12/23/2006	Riddhi Patel
					TLI	EPA 200.8	SB	12/22/2006	Laureen Tan
					TLI	EPA 200.8	AL	12/22/2006	Laureen Tan
					TLI	EPA 200.8	AS	12/22/2006	Laureen Tan
					TLI	EPA 200.8	CU	12/18/2006	Laureen Tan
					TLI	EPA 200.8	MO	12/22/2006	Laureen Tan
					TLI	EPA 200.8	NI	12/22/2006	Laureen Tan
					TLI	EPA 200.8	PB	12/22/2006	Laureen Tan
					TLI	EPA 300.0	FL	12/8/2006	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	12/8/2006	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	12/8/2006	Giawad Ghenniwa
					TLI	EPA 350.2	NH3N	12/13/2006	Iordan Stavrev
					TLI	EPA 354.1	NO2N	12/7/2006	Tina Acquiat
					TLI	EPA Method 218.6	CR6	12/6/2006	Faisal Raihan
SC-700B	SC-700B-WDR-076	David Chaney	12/6/2006	1:00:00 PM	TLI	EPA 120.1	SC	12/11/2006	Tina Acquiat
					TLI	EPA 150.1	PH	12/7/2006	Tina Acquiat
					TLI	EPA 160.1	TDS	12/11/2006	Tina Acquiat
					TLI	EPA 180.1	TRB	12/7/2006	Gautam Savani
					TLI	EPA 200.7	MN	12/23/2006	Riddhi Patel
					TLI	EPA 200.7	FE	12/23/2006	Riddhi Patel
					TLI	EPA 200.7	B	12/23/2006	Riddhi Patel
					TLI	EPA 200.7	BA	12/23/2006	Riddhi Patel
					TLI	EPA 200.7	ZN	12/23/2006	Riddhi Patel
					TLI	EPA 200.7	CR	12/14/2006	Riddhi Patel
					TLI	EPA 200.8	MO	12/22/2006	Laureen Tan
					TLI	EPA 200.8	AL	12/22/2006	Laureen Tan
					TLI	EPA 200.8	AS	12/22/2006	Laureen Tan
					TLI	EPA 200.8	CU	12/18/2006	Laureen Tan

TABLE 7
Board Order No. R7-2006-0060 Waste Discharge Requirements (WDRs)
Monitoring Information
December 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-076	David Chaney	12/6/2006	1:00:00 PM	TLI	EPA 200.8	SB	12/22/2006	Laureen Tan
					TLI	EPA 200.8	NI	12/22/2006	Laureen Tan
					TLI	EPA 200.8	PB	12/22/2006	Laureen Tan
					TLI	EPA 300.0	FL	12/8/2006	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	12/8/2006	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	12/8/2006	Giawad Ghenniwa
					TLI	EPA 350.2	NH3N	12/13/2006	Iordan Stavrev
					TLI	EPA 354.1	NO2N	12/7/2006	Tina Acquiat
					TLI	EPA Method 218.6	CR6	12/6/2006	Faisal Raihan
SC-700B	SC-700B-WDR-077	David Chaney	12/13/2006	1:45:00 PM	TLI	EPA 120.1	SC	12/14/2006	Tina Acquiat
					TLI	EPA 150.1	PH	12/14/2006	Gautam Savani
					TLI	EPA 160.1	TDS	12/14/2006	Tina Acquiat
					TLI	EPA 180.1	TRB	12/14/2006	Gautam Savani
					TLI	EPA 200.7	CR	12/27/2006	Riddhi Patel
					TLI	EPA Method 218.6	CR6	12/13/2006	Stanley Hsieh
SC-700B	SC-700B-WDR-078	LeRoy Hughes	12/20/2006	11:50:00 AM	TLI	EPA 120.1	SC	12/21/2006	Tina Acquiat
					TLI	EPA 150.1	PH	12/21/2006	Tina Acquiat
					TLI	EPA 160.1	TDS	12/21/2006	Tina Acquiat
					TLI	EPA 180.1	TRB	12/21/2006	Gautam Savani
					TLI	EPA 200.7	CR	12/27/2006	Riddhi Patel
					TLI	EPA Method 218.6	CR6	12/20/2006	Faisal Raihan
SC-700B	SC-700B-WDR-079	David Chaney	12/27/2006	10:15:00 AM	TLI	EPA 120.1	SC	12/28/2006	Iordan Stavrev
					TLI	EPA 150.1	PH	12/28/2006	Iordan Stavrev
					TLI	EPA 160.1	TDS	1/2/2007	Tina Acquiat
					TLI	EPA 180.1	TRB	12/28/2006	Gautam Savani
					TLI	EPA 200.7	CR	1/3/2007	Riddhi Patel
					TLI	EPA Method 218.6	CR6	12/28/2006	Faisal Raihan
SC-701	SC-701-WDR-076	David Chaney	12/6/2006	1:25:00 PM	TLI	EPA 120.1	SC	12/11/2006	Tina Acquiat
					TLI	EPA 150.1	PH	12/7/2006	Tina Acquiat
					TLI	EPA 160.1	TDS	12/11/2006	Tina Acquiat
					TLI	EPA 200.7	BA	12/23/2006	Riddhi Patel
					TLI	EPA 200.7	CR	12/14/2006	Riddhi Patel
					TLI	EPA 200.7	ZN	12/23/2006	Riddhi Patel
					TLI	EPA 200.8	V	12/22/2006	Laureen Tan
					TLI	EPA 200.8	AG	12/22/2006	Laureen Tan
					TLI	EPA 200.8	BE	12/18/2006	Laureen Tan

TABLE 7
Board Order No. R7-2006-0060 Waste Discharge Requirements (WDRs)
Monitoring Information
December 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-076	David Chaney	12/6/2006	1:25:00 PM	TLI	EPA 200.8	CD	12/22/2006	Laureen Tan
					TLI	EPA 200.8	CO	12/22/2006	Laureen Tan
					TLI	EPA 200.8	CU	12/18/2006	Laureen Tan
					TLI	EPA 200.8	MO	12/22/2006	Laureen Tan
					TLI	EPA 200.8	NI	12/22/2006	Laureen Tan
					TLI	EPA 200.8	PB	12/22/2006	Laureen Tan
					TLI	EPA 200.8	SB	12/22/2006	Laureen Tan
					TLI	EPA 200.8	SE	12/18/2006	Laureen Tan
					TLI	EPA 200.8	TL	12/22/2006	Laureen Tan
					TLI	EPA 200.8	AS	12/22/2006	Laureen Tan
					TLI	EPA 245.1	HG	12/20/2006	Aksiniya Dimitrova
					TLI	EPA 300.0	FL	12/8/2006	Giawad Ghenniwa
					TLI	EPA Method 218.6	CR6	12/7/2006	Faisal Raihan
SC-Sludge	SC-Sludge-WDR-076	David Chaney	12/6/2006	1:01:00 PM	STL	EPA 160.3	MOIST	12/9/2006	Janice Salenga
					TLI	EPA 300.0	FL	12/12/2006	Giawad Ghenniwa
					STL	EPA 6010B	NI	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	AG	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	ZN	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	V	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	TL	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	SE	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	SB	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	PB	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	MO	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	CU	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	CR	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	CO	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	CD	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	BE	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	AS	12/15/2006	Josephine Asuncion
					STL	EPA 6010B	BA	12/15/2006	Josephine Asuncion
					STL	EPA 7471A	HG	12/19/2006	Hao Ton
					STL	SW 7199	CR6	1/3/2007	Yuriy Zakhrabov

TABLE 7
Board Order No. R7-2006-0060 Waste Discharge Requirements (WDRs)
Monitoring Information
December 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-076	David Chaney	12/06/2006	13:01:00 PM	MBC	96-Hour Acute Aquatic Toxicity Screening Test	BIO	1/4//2007 - 01/8/2007	Chris Lim, Yi Young

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.
MBC = MBC Applied Environmental Sciences

SC = specific conductance
PH = pH
TDS = total dissolved solids
TRB = turbidity
CR = 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

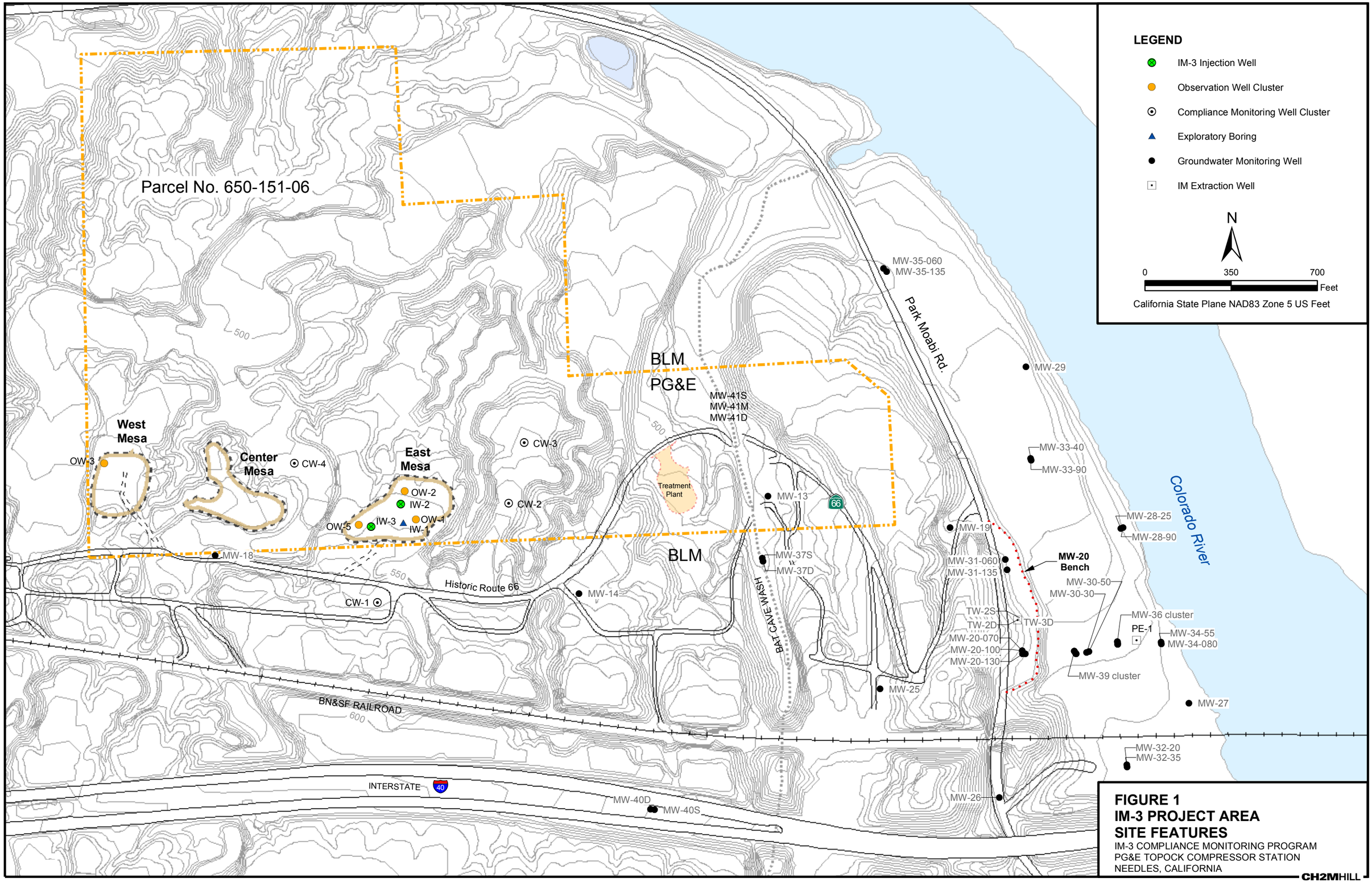


FIGURE 1
IM-3 PROJECT AREA
SITE FEATURES
IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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

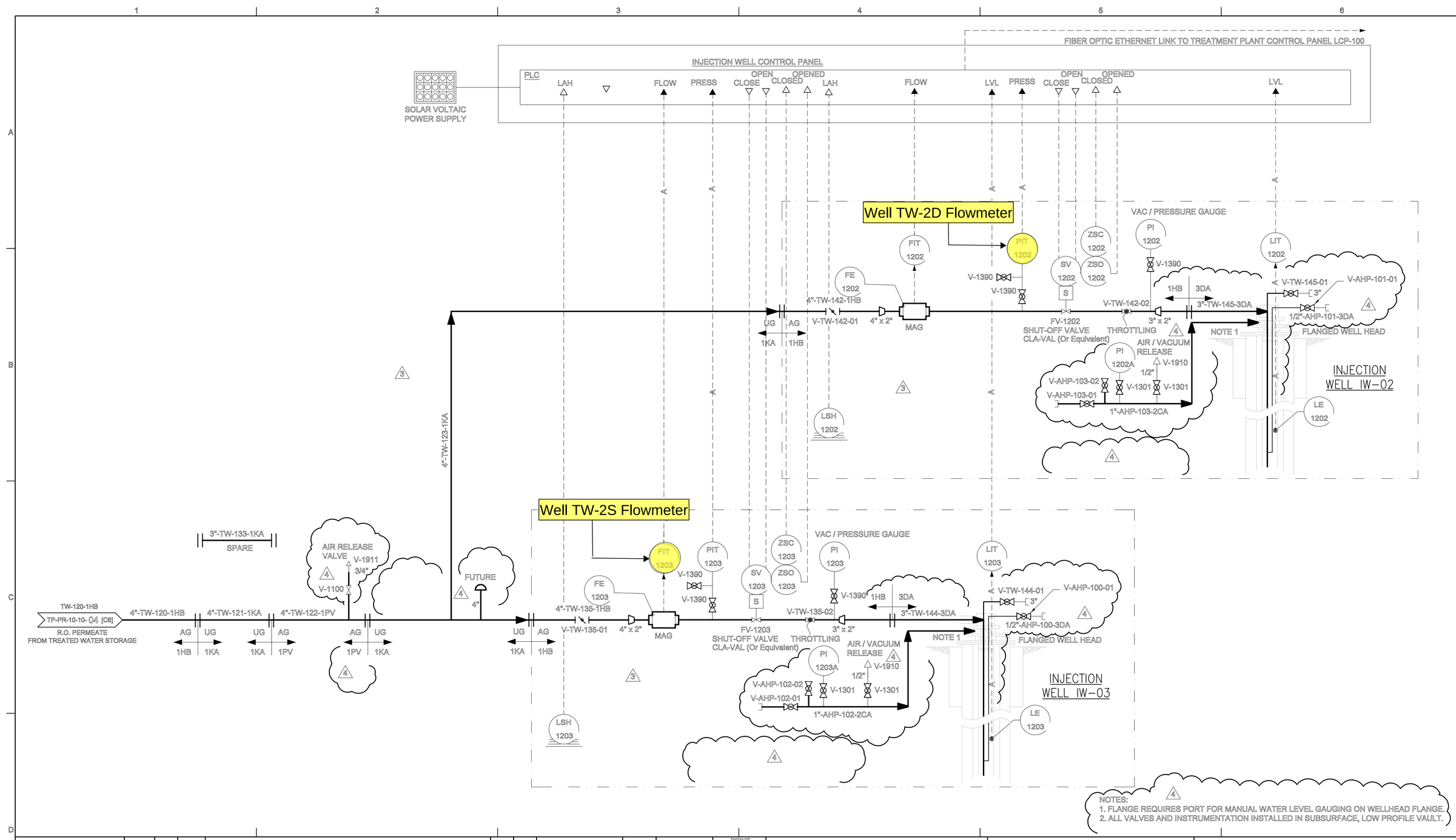
CH2MHILL

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
tppr101003.dwg 12/07/2005 01:06:58 PM

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

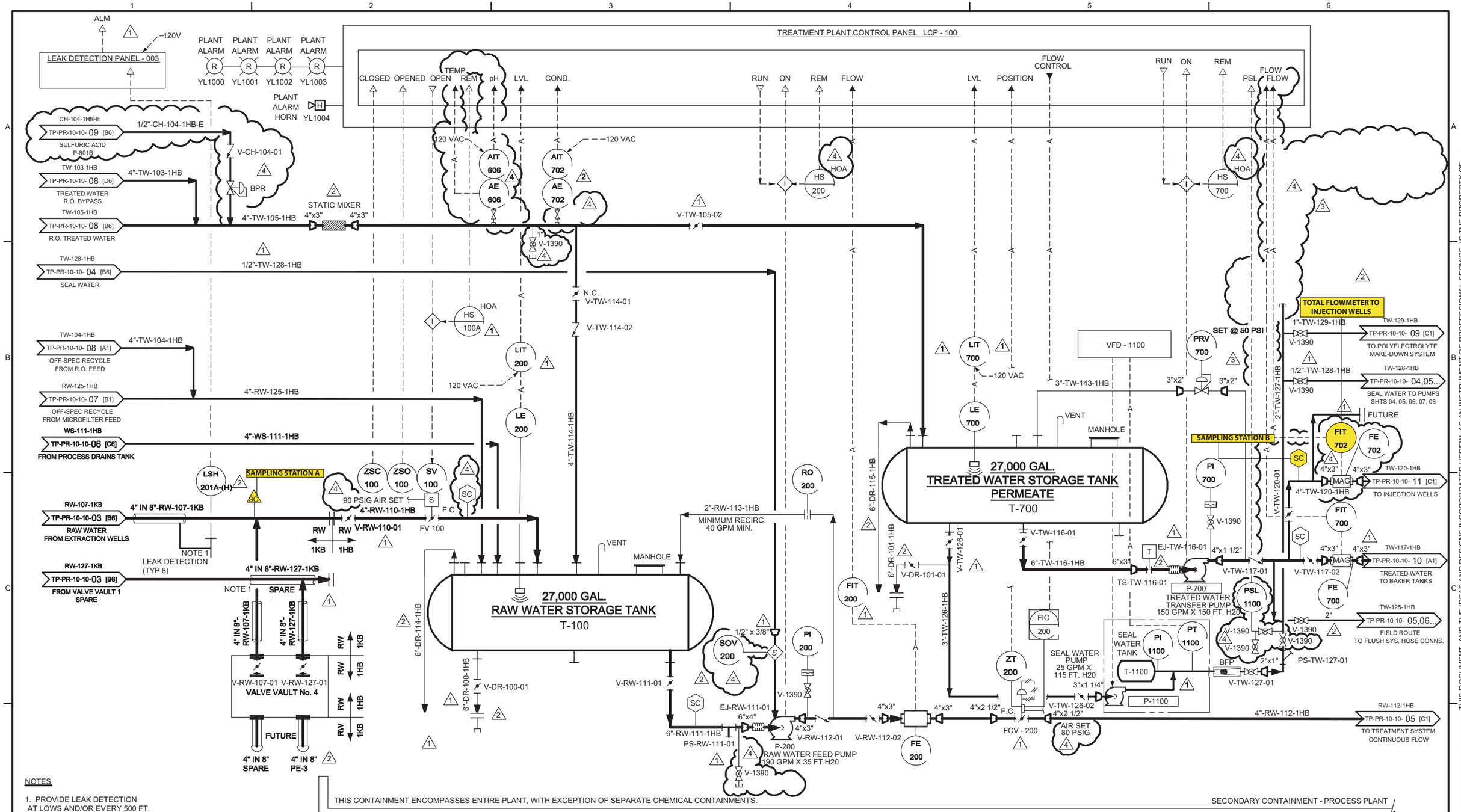
CH2MHILL

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.

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		REV 4	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	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

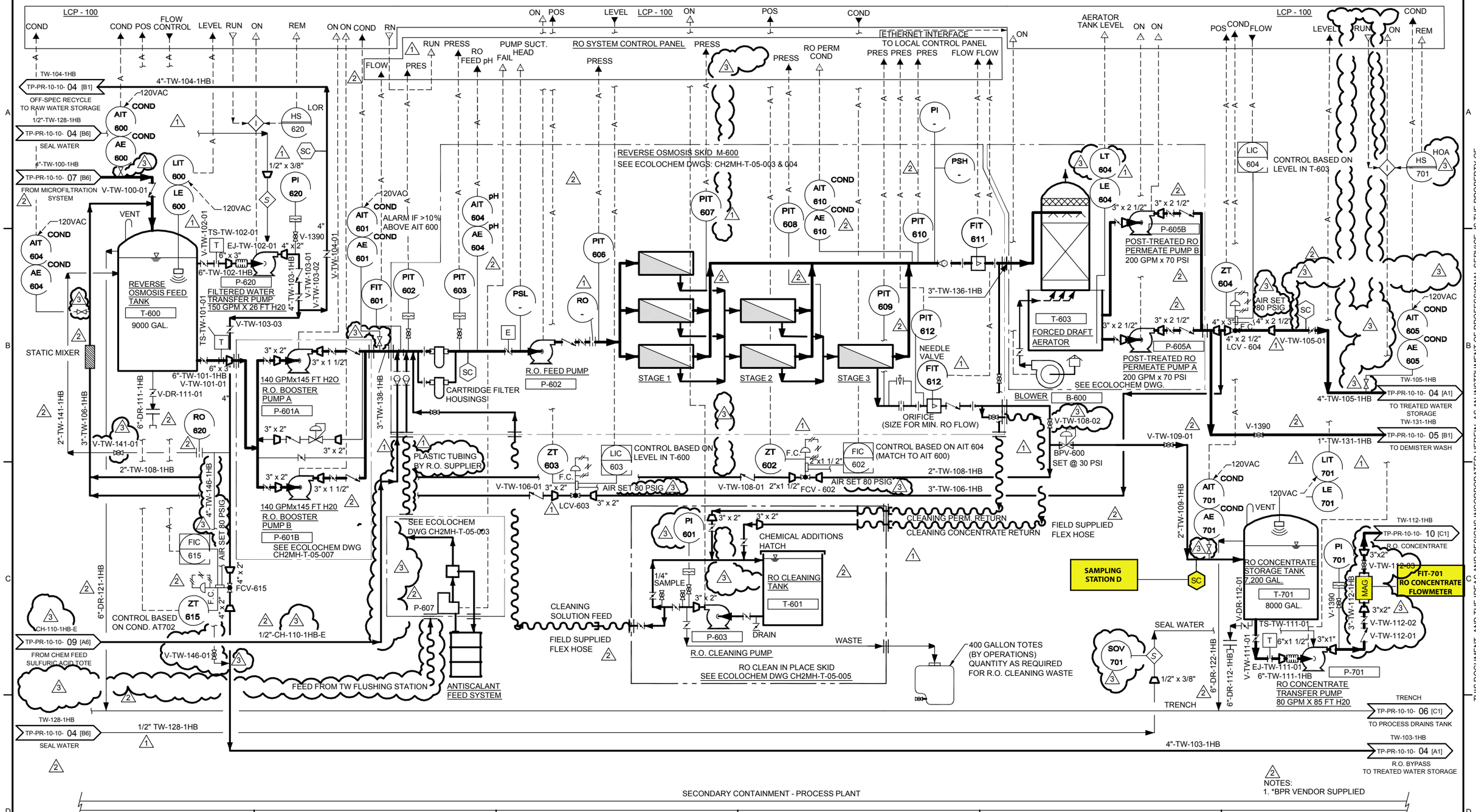
CH2MHILL

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
CH-108-1HB-E
TP-PR-10-10- 09 [C6]
POLYELECTROLYTE FEED

1/2"-CH-109-1HB-E · V-CH-109-01 · 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

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

4"-WS-102-1HB

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

V-WS-104-01 · 4"-WS-100-1HB

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

6"-RW-122-1HB

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

120VAC LIT 402 · SV 404

120 PSIG AIR SET · HS 403 HOA · SV 403 · PI 404 · PE 404 · 1/2" · 2" x 1" · V-WS-103-01 · V-WS-103-02

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

4" x 1" · P-404 SLUDGE RECYCLE PUMP 20 GPM X 30 FT. H2O · 2"-WS-103-1HB · V-WS-109-01 · 2"-WS-109-1HB

2"-WS-101-1HB · 2" x 1" · V-WS-101-01 · 4" x 2" · P-401 SLUDGE WITHDRAWAL PUMP 20 GPM X 30 FT. H2O · 6" x 4"

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

3% - 5% SOLIDS · 2"-WS-105-1HB · V-WS-108-01 · V-WS-105-01 · 2"-WS-107-1HB · V-WS-107-01 · P-403 SEPARATOR FEED PUMP 20 GPM X 30 FT. H2O · 4"-WS-108-1HB

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

2"-V-1790 (TYP 5) · 4" (TYP 5) AIR/SIGHT GAP · 4" · PI 403 · PE 403

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

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.

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

SCALE NONE

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

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

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
December 2006 Laboratory Analytical Reports

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

January 4, 2007

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-076 PROJECT, GROUNDWATER MONITORING,

TLJ NO.: 961321

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-076 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, Anions, Ammonia, Total Dissolved Solids, Total Organic Carbon, and Title 22 Metals. 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 December 6, 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.

Although the duplicate result for Cobalt is below the CRDL, it is reported to demonstrate precision.

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

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

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

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.: 346129.IM.02.E2

Laboratory No.: 961321
Date: January 4, 2007
Collected: December 6, 2006
Received: December 6, 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 415.2	Total Organic Carbon	Aksiniya Dimitrova
EPA 200.7	Metals by ICP	Riddhi Patel
EPA 200.8	Metals by ICP/MS	Laureen Tan
EPA 245.1	Mercury	Aksiniya Dimitrova
EPA 218.6	Hexavalent Chromium	Faisal Raihan

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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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961321
Date Received: December 6, 2006
Revision 1

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***
961321-1	SC-100B-WDR-076	13:10	7.46	8360	4950	0.102	2.04	ND
961321-2	SC-700B-WDR-076	13:00	8.12	6900	4720	ND	ND	ND
961321-3	SC-701-WDR-076	13:25	7.94	30600	22100	—	ND	—

Lab I.D.	Sample I.D.	Sample Time	EPA 300.0 *Fluoride*	EPA 300.0 *Sulfate*	EPA 300.0 *Nitrate as N*	EPA 354.1 *Nitrite as N*	EPA 415.2 *TOC*
			mg/L	***mg/L***	***mg/L***	***mg/L***	***mg/L***
961321-1	SC-100B-WDR-076	13:10	2.83	695	3.37	0.0101	0.360
961321-2	SC-700B-WDR-076	13:00	2.20	533	2.77	ND	ND
961321-3	SC-701-WDR-076	13:25	11.7	---	---	---	1.50

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

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

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

Attention: Shawn Duffy
Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961321
Date Received: December 6, 2006

Analytical Results Summary

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

Lab I.D.	Sample ID	Date of Analysis: / Time Coll.	Aluminum EPA 200.8 12/22/06 mg/L	Antimony EPA 200.8 12/22/06 mg/L	Arsenic EPA 200.8 12/22/06 mg/L	Barium EPA 200.7 12/23/06 mg/L	Beryllium EPA 200.8 12/18/06 mg/L	Cadmium EPA 200.8 12/22/06 mg/L	Chromium EPA 200.7 12/22/06 mg/L	Cobalt EPA 200.8 12/22/06 mg/L	Copper EPA 200.8 12/18/06 mg/L	Lead EPA 200.8 12/22/06 mg/L
961321-1	SC-100B-WDR-076	13:10	ND	ND	ND	ND	---	---	2.05	---	0.0361	0.0057
961321-2	SC-700B-WDR-076	13:00	ND	ND	ND	ND	---	---	ND	---	0.0439	0.0061
961321-3	SC-701-WDR-076	13:25	---	ND	ND	ND	ND	ND	ND	0.0055	0.0194	ND

Lab I.D.	Sample ID	Date of Analysis: / Time Coll.	Manganese EPA 200.7 12/23/06 mg/L	Mercury EPA 245.1 12/20/06 mg/L	Molybdenum EPA 200.8 12/22/06 mg/L	Nickel EPA 200.8 12/22/06 mg/L	Selenium EPA 200.8 12/18/06 mg/L	Silver EPA 200.8 12/22/06 mg/L	Thallium EPA 200.8 12/22/06 mg/L	Vanadium EPA 200.8 12/22/06 mg/L	Zinc EPA 200.7 12/23/06 mg/L
961321-1	SC-100B-WDR-076	13:10	ND	---	0.0230	ND	---	---	---	---	ND
961321-2	SC-700B-WDR-076	13:00	ND	---	0.0148	ND	---	---	---	---	ND
961321-3	SC-701-WDR-076	13:25	---	ND	0.0604	ND	ND	ND	ND	ND	ND

Lab I.D.	Sample ID	Date of Analysis: / Time Coll.	Boron EPA 200.7 12/23/06 mg/L	Iron EPA 200.7 12/23/06 mg/L
961321-1	SC-100B-WDR-076	13:10	1.21	ND
961321-2	SC-700B-WDR-076	13:00	1.12	ND
961321-3	SC-701-WDR-076	13:25	---	---

NOTES:

ND: Not detected, or below limit of detection

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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www.truesdail.com

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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961321
Date: January 4, 2007
Collected: December 6, 2006
Received: December 6, 2006
Prep/ Analyzed: December 7, 2006
Analytical Batch: 12PH06E

Investigation: **pH by EPA 150.1**

Analytical Results pH

TLI I.D.	Field I.D.	Run Time	Units	MDL	RL	Results
961321-1	SC-100B-WDR-076	08:41	pH Units	0.0570	2.00	7.46
961321-2	SC-700B-WDR-076	08:44	pH Units	0.0570	2.00	8.12
961321-3	SC-701-WDR-076	08:48	pH Units	0.0570	2.00	7.94

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	961321-3	7.94	7.94	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

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

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

Laboratory No.: 961321

Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Date: January 12, 2007
Collected: December 6, 2006
Received: December 6, 2006
Prep/ Analyzed: December 11, 2006
Analytical Batch: 12EC06F
Revision 1

Investigation:

Specific Conductivity by EPA 120.1

Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
961321-1	SC-100B-WDR-076	µmhos/cm	EPA 120.1	1.00	2.00	8360
961321-2	SC-700B-WDR-076	µmhos/cm	EPA 120.1	1.00	2.00	6900
961321-3	SC-701-WDR-076	µmhos/cm	EPA 120.1	1.00	2.00	30600

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	961319-1	10000	10000	0.00%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	690	706	97.7%	90% - 110%	Yes
CVS#1	946	1000	94.6%	90% - 110%	Yes
CVS#2	945	1000	94.5%	90% - 110%	Yes
LCS	690	706	97.7%	90% - 110%	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

For Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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www.truesdail.com

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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961321
Date: January 4, 2007
Collected: December 6, 2006
Received: December 6, 2006
Prep/ Analyzed: December 11, 2006
Analytical Batch: 12TDS06E

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

Analytical Results Total Dissolved Solids

TLI I.D.	Field I.D.	Units	Method	RL	Results
961321-1	SC-100B-WDR-076	mg/L	EPA 160.1	312	4950
961321-2	SC-700B-WDR-076	mg/L	EPA 160.1	250	4720
961321-3	SC-701-WDR-076	mg/L	EPA 160.1	1250	22100

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	961319-2	5420	5510	0.82%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	477	500	95.4%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
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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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961321
Date: January 4, 2007
Collected: December 6, 2006
Received: December 6, 2006
Prep/ Analyzed: December 7, 2006
Analytical Batch: 12TUC06G

Investigation: **Turbidity by Method EPA 180.1**

Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
961321-1	SC-100B-WDR-076	13:10	NTU	1.00	0.100	0.102
961321-2	SC-700B-WDR-076	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	961312-1	ND	ND	0.00%	< 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.34	8.00	91.8%	90% - 110%	Yes
LCS	7.38	8.00	92.3%	90% - 110%	Yes
LCS	7.40	8.00	92.5%	90% - 110%	Yes

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

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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2
Prep. Batch: 12TOC06B

Laboratory No.: 961321
Date: January 4, 2007
Collected: December 6, 2006
Received: December 6, 2006
Prep/ Analyzed: December 7, 2006
Analytical Batch: 12TOC06B

Investigation: **Total Organic Carbon by EPA 415.2**

Analytical Results Total Organic Carbon

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
961321-1	SC-100B-WDR-076	13:10	18:29	mg/L	1.00	0.300	0.360
961321-2	SC-700B-WDR-076	13:00	18:39	mg/L	1.00	0.300	ND
961321-3	SC-701-WDR-076	13:25	18:51	mg/L	1.00	0.300	1.50

QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	961301	4.73	4.72	0.21%	< 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	961301	4.73	1.00	20.0	20.0	24.2	24.7	97.4%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	10.1	10.0	101%	90% - 110%	Yes
MRCVS#1	9.84	10.0	98.4%	90% - 110%	Yes
MRCVS#2	9.82	10.0	98.2%	90% - 110%	Yes
LCS	24.6	22.3	110%	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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2
Prep. Batch: 12CrH06D

Laboratory No.: 961321
Date: January 4, 2007
Collected: December 6, 2006
Received: December 6, 2006
Prep/ Analyzed: December 6 & 7, 2006
Analytical Batch: 12CrH06D

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
961321-1	SC-100B-WDR-076	13:10	12/6/06; 23:08	mg/L	100	0.0200	2.04
961321-2	SC-700B-WDR-076	13:00	12/6/06; 23:18	mg/L	1.05	0.00020	ND
961321-3	SC-701-WDR-076	13:25	12/7/06; 01:21	mg/L	5.00	0.0010	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	961311-39	0.00585	0.00586	0.17%	< 20%	Yes

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	961321-1	2.04	100	0.0250	2.50	4.43	4.54	95.6%	90-110%	Yes
MS	961321-2	0.00	1.06	0.00100	0.00106	0.00105	0.00106	99.1%	90-110%	Yes
MS	961321-3	0.00	1.06	0.00100	0.00106	0.00	0.00106	0.00%	90-110%	No
MS	961321-3	0.00	5.00	0.00100	0.00500	0.00455	0.00500	91.0%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00501	0.00500	100%	90% - 110%	Yes
MRCVS#1	0.0103	0.0100	103%	95% - 105%	Yes
MRCVS#3	0.0104	0.0100	104%	95% - 105%	Yes
MRCVS#4	0.00963	0.0100	96.3%	95% - 105%	Yes
MRCVS#5	0.00965	0.0100	96.5%	95% - 105%	Yes
LCS	0.00505	0.00500	101%	90% - 110%	Yes
LCSD	0.00507	0.00500	101%	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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961321
Date: January 4, 2007
Collected: December 6, 2006
Received: December 6, 2006
Prep/ Analyzed: December 13, 2006
Analytical Batch: 12NH306C

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
961321-1	SC-100B-WDR-076	13:10	EPA 350.2	mg/L	1.00	0.500	ND
961321-2	SC-700B-WDR-076	13:00	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	961354-1	1.82	1.87	2.71%	≤ 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	961321-1	0.00	1.00	10.0	10.0	10.3	10.0	103%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	9.99	10.0	99.9%	90% - 110%	Yes

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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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961321
Date: January 4, 2007
Collected: December 6, 2006
Received: December 6, 2006
Prep/ Analyzed: December 8, 2006
Analytical Batch: 12AN06H

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
961321-1	SC-100B-WDR-076	13:10	09:59	mg/L	1.00	0.200	2.83
961321-2	SC-700B-WDR-076	13:00	10:09	mg/L	1.00	0.200	2.20
961321-3	SC-701-WDR-076	13:25	13:27	mg/L	10.0	2.00	11.7

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	961321-2	2.20	2.20	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	961321-2	2.20	1.00	4.00	4.00	6.10	6.20	97.5%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.15	4.00	104%	90% - 110%	Yes
MRCVS#1	3.16	3.00	105%	90% - 110%	Yes
MRCVS#2	3.15	3.00	105%	90% - 110%	Yes
MRCVS#3	3.13	3.00	104%	90% - 110%	Yes
LCS	4.16	4.00	104%	90% - 110%	Yes
LCSD	4.18	4.00	105%	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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961321
Date: January 4, 2007
Collected: December 6, 2006
Received: December 6, 2006
Prep/ Analyzed: December 8, 2006
Analytical Batch: 12AN06H

Investigation: **Sulfate by Method EPA 300.0**

Analytical Results Sulfate

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
961321-1	SC-100B-WDR-076	13:10	12:24	mg/L	50.0	25.0	695
961321-2	SC-700B-WDR-076	13:00	12:35	mg/L	50.0	25.0	533

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	961321-2	533	534	0.19%	≤ 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	961321-2	533	50.0	20.0	1000	1620	1533	109%	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	15.7	15.0	105%	90% - 110%	Yes
MRCVS#2	15.7	15.0	105%	90% - 110%	Yes
MRCVS#3	16.2	15.0	108%	90% - 110%	Yes
MRCVS#4	16.2	15.0	108%	90% - 110%	Yes
MRCVS#5	16.2	15.0	108%	90% - 110%	Yes
LCS	20.3	20.0	102%	90% - 110%	Yes
LCSD	20.4	20.0	102%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

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Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961321
Date: January 4, 2007
Collected: December 6, 2006
Received: December 6, 2006
Prep/ Analyzed: December 8, 2006
Analytical Batch: 12AN06H

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
961321-1	SC-100B-WDR-076	13:10	09:59	mg/L	1.00	0.200	3.37
961321-2	SC-700B-WDR-076	13:00	10:09	mg/L	1.00	0.200	2.77

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	961376-2	2.31	2.29	0.87%	≤ 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	961376-2	2.31	1.00	4.00	4.00	6.30	6.31	99.8%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.00	4.00	100%	90% - 110%	Yes
MRCVS#1	3.02	3.00	101%	90% - 110%	Yes
MRCVS#2	3.01	3.00	100%	90% - 110%	Yes
MRCVS#3	2.98	3.00	99.3%	90% - 110%	Yes
MRCVS#4	2.97	3.00	99.0%	90% - 110%	Yes
MRCVS#5	2.98	3.00	99.3%	90% - 110%	Yes
LCS	4.02	4.00	101%	90% - 110%	Yes
LCSD	4.01	4.00	100%	90% - 110%	Yes

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

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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961321
Date: January 4, 2007
Collected: December 6, 2006
Received: December 6, 2006
Prep/ Analyzed: December 7, 2006
Analytical Batch: 12NO206C

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
961321-1	SC-100B-WDR-076	13:10	13:01	mg/L	1.00	0.0050	0.0101
961321-2	SC-700B-WDR-076	13:00	13:02	mg/L	1.00	0.0050	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	961321-2	ND	ND	0.00%	< 20%	Yes

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	961321-2	0.00	1.00	0.100	0.100	0.0995	0.100	99.5%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0860	0.0900	95.6%	90% - 110%	Yes
MRCVS#1	0.0949	0.100	94.9%	90% - 110%	Yes
LCS	0.176	0.180	97.8%	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

Samples: Three (3) Groundwater Samples
Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2
Investigation: Total Metal Analyses as Requested

Laboratory No.: 961321
Reported: January 4, 2007
Collected: December 6, 2006
Received: December 6, 2006
Analyzed: December 14 - 23, 2006

Analytical Results

SAMPLE ID: SC-100B-WDR-076 **Time Collected:** 13:10 **LAB ID:** 961321-1

Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Aluminum	EPA 200.8	ND	2.08	mg/L	0.0500	122206A	12/22/06	11:28
Antimony	EPA 200.8	ND	2.08	mg/L	0.0030	122206A	12/22/06	11:28
Arsenic	EPA 200.8	ND	2.08	mg/L	0.0050	122206A	12/22/06	11:28
Barium	EPA 200.7	ND	1.04	mg/L	0.300	122306B	12/23/06	11:55
Chromium	EPA 200.7	2.05	1.04	mg/L	0.0520	122206B	12/22/06	16:42
Copper	EPA 200.8	0.0361	2.08	mg/L	0.0100	121806A	12/18/06	12:41
Lead	EPA 200.8	0.0057	2.08	mg/L	0.0021	122206A	12/22/06	11:28
Manganese	EPA 200.7	ND	1.04	mg/L	0.500	122306B	12/23/06	11:55
Molybdenum	EPA 200.8	0.0230	2.08	mg/L	0.0050	122206A	12/22/06	11:28
Nickel	EPA 200.8	ND	2.08	mg/L	0.0200	122206A	12/22/06	11:28
Zinc	EPA 200.7	ND	1.04	mg/L	0.0200	122306B	12/23/06	11:55
Boron	EPA 200.7	1.21	1.04	mg/L	0.200	122306B	12/23/06	11:55
Iron	EPA 200.7	ND	1.04	mg/L	0.300	122306B	12/23/06	11:55

SAMPLE ID: SC-700B-WDR-076 **Time Collected:** 13:00 **LAB ID:** 961321-2

Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Aluminum	EPA 200.8	ND	2.08	mg/L	0.0500	122206A	12/22/06	11:34
Antimony	EPA 200.8	ND	2.08	mg/L	0.0030	122206A	12/22/06	11:34
Arsenic	EPA 200.8	ND	2.08	mg/L	0.0050	122206A	12/22/06	11:34
Barium	EPA 200.7	ND	1.04	mg/L	0.300	122306B	12/23/06	12:12
Chromium	EPA 200.7	ND	1.04	mg/L	0.0010	121406A	12/14/06	09:49
Copper	EPA 200.8	0.0439	2.08	mg/L	0.0100	121806A	12/18/06	12:47
Lead	EPA 200.8	0.0061	2.08	mg/L	0.0021	122206A	12/22/06	11:34
Manganese	EPA 200.7	ND	1.04	mg/L	0.500	122306B	12/23/06	12:12
Molybdenum	EPA 200.8	0.0148	2.08	mg/L	0.0050	122206A	12/22/06	11:34
Nickel	EPA 200.8	ND	2.08	mg/L	0.0200	122206A	12/22/06	11:34
Zinc	EPA 200.7	ND	1.04	mg/L	0.0200	122306B	12/23/06	12:12
Boron	EPA 200.7	1.12	1.04	mg/L	0.200	122306B	12/23/06	12:12
Iron	EPA 200.7	ND	1.04	mg/L	0.300	122306B	12/23/06	12:12

SAMPLE ID: SC-701-WDR-076		Time Collected:	13:25			LAB ID:	961321-3	
Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Antimony	EPA 200.8	ND	10.4	mg/L	0.0052	122206A	12/22/06	11:40
Arsenic	EPA 200.8	ND	10.4	mg/L	0.0104	122206A	12/22/06	11:40
Barium	EPA 200.7	ND	1.04	mg/L	0.300	122306B	12/23/06	12:17
Beryllium	EPA 200.8	ND	10.4	mg/L	0.0052	121806A	12/18/06	12:53
Cadmium	EPA 200.8	ND	10.4	mg/L	0.0052	122206A	12/22/06	11:40
Chromium	EPA 200.7	ND	1.04	mg/L	0.0010	121406A	12/14/06	09:54
Cobalt	EPA 200.8	0.0055	10.4	mg/L	0.0052	122206A	12/22/06	11:40
Copper	EPA 200.8	0.0194	10.4	mg/L	0.0104	121806A	12/18/06	12:53
Lead	EPA 200.8	ND	10.4	mg/L	0.0104	122206A	12/22/06	11:40
Mercury	EPA 245.1	ND	1.00	mg/L	0.00020	12HG06Ca	12/20/06	13:40
Molybdenum	EPA 200.8	0.0604	10.4	mg/L	0.0052	122206A	12/22/06	11:40
Nickel	EPA 200.8	ND	10.4	mg/L	0.0200	122206A	12/22/06	11:40
Selenium	EPA 200.8	ND	10.4	mg/L	0.0104	121806A	12/18/06	12:53
Silver	EPA 200.8	ND	10.4	mg/L	0.0052	122206A	12/22/06	11:40
Thallium	EPA 200.8	ND	10.4	mg/L	0.0052	122206A	12/22/06	11:40
Vanadium	EPA 200.8	ND	10.4	mg/L	0.0052	122206A	12/22/06	11:40
Zinc	EPA 200.7	ND	1.04	mg/L	0.0200	122306B	12/23/06	12:17

ND: Not detected,or below limit of detection.

DF: Dilution factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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

[IM3Plant-WDR-076] 961321

COC Number
TURNAROUND TIME 10 Days
DATE PAGE 1 OF 1

COMPANY	E2
PROJECT NAME	PG&E Topock
PHONE	(530) 229-3303 FAX (530) 339-3303
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612
P.O. NUMBER	346129.1M.02.E2
SAMPLERS (SIGNATURE)	[signature]

	SAMPLE I.D.	DATE	TIME	DESCRIPTION	CR6 (218.6) Lab Filtered	Total Metals (200.7) Title 22	Total Metals (200.7) Total Al,As,Ba,B,Cr,Cu,Pb,Mo,Mn,Ni,Sb,Fe,Zn	Specific Conductance (120.1)	pH (150.1)	TDS (160.1)	Anions (300) Fl	Anions (300) Fl, SO4, NO2, NO3	Ammonia (350.2)	Turbidity (180.1)	TOC				NUMBER OF CONTAINERS	COMMENTS
1	SC-100B-WDR-076	12-6-06	13:10	Groundwater	x		x	x	x	x		x	x	x	x				4	pm=2
2	SC-700B-WDR-076	12-6-06	13:00	Groundwater	x		x	x	x	x		x	x	x	x				4	pm=2
3	SC-701-WDR-076	12-6-06	13:25	Groundwater	x	x		x	x	x	x				x				3	pm=2
																			11	TOTAL NUMBER OF CONTAINERS

Rec'd 12/06/06
961321

For Sample Conditions See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD

Signature	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time
Signature (Received) L. Shakuma	Printed Name L. Shakuma	Company/ Agency TLI	Date/ Time 12/6/06 2000
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:

ALERT!!
Level III QC

TRUESDAIL LABORATORIES, INC.
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www.truesdail.com

January 4, 2007

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

Dear Mr. Duffy:

SUBJECT: REVISED CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-077 PROJECT, GROUNDWATER MONITORING,

TLI NO.: 961563

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-077 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 December 13, 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 Hexavalent Chromium sample was analyzed by EPA 218.6 along with other samples by SW 7199. The MRCVS#1's value of 10.6 ug/L passes the QC requirements for method SW 7199 but exceeds the acceptable limit for method EPA 218.6. The closing MRCVS#3 has a passing value of 10.2 ug/L for method EPA 218.6. The analysts and reviewers were informed about this discrepancy to prevent a similar situation in the future.

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

TRUESDAIL LABORATORIES, INC.

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www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2

Laboratory No.: 961563
Date: January 2, 2007
Collected: December 13, 2006
Received: December 13, 2006

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Tina Acquiat
EPA 150.1	pH	Gautam Savani
EPA 160.1	Total Dissolved Solids	Tina Acquiat
EPA 180.1	Turbidity	Gautam Savani
EPA 200.7	Total Chromium	Riddhi Patel
EPA 218.6	Hexavalent Chromium	Stanley Hsieh

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

Laboratory No.: 961563
Date Received: December 13, 2006
Revision 1

Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Analytical Results Summary

Lab I.D.	Sample I.D.	Sample Time	EPA 200.7 *Chromium Total*	EPA 218.6 *Chromium Hexavalent*	EPA 180.1 *Turbidity*	EPA 150.1 *pH*	EPA 120.1 *EC*	EPA 160.1 *TDS*
			mg/L	*mg/L*	*NTU*	*Unit*	*µmhos/cm*	*mg/L*
961563	SC-700B-WDR-077	13:45	ND	ND	ND	8.11	6940	4080

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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961563
Date: January 12, 2007
Collected: December 13, 2006
Received: December 13, 2006
Prep/ Analyzed: December 14, 2007
Analytical Batch: 12EC06J
Revision 1

Investigation:

Specific Conductivity by EPA 120.1

Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
961563	SC-700B-WDR-077	µmhos/cm	EPA 120.1	1.00	2.00	6940

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	961563 10x	9290	9300	0.11%	≤ 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	972	1000	97.2%	90% - 110%	Yes
LCS	685	706	97.0%	90% - 110%	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Ali Kharaj

For Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

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

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961563
Date: January 2, 2007
Collected: December 13, 2006
Received: December 13, 2006
Prep/ Analyzed: December 14, 2007
Analytical Batch: 12PH06J

Investigation:

pH by EPA 150.1

Analytical Results pH

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	MDL	RL	Results
961563	SC-700B-WDR-077	13:45	08:58	pH Units	0.0570	2.00	8.11

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	961565-10	7.59	7.60	0.01	± 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.00	7.00	0.00	± 0.100 Units	Yes
LCS #1	7.01	7.00	0.01	± 0.100 Units	Yes
LCS #2	7.02	7.00	0.02	± 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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961563
Date: January 2, 2007
Collected: December 13, 2006
Received: December 13, 2006
Prep/ Analyzed: December 14, 2006
Analytical Batch: 12TUC06N

Investigation: **Turbidity by Method EPA 180.1**

Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
961563	SC-700B-WDR-077	13:45	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	961577	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.40	8.00	92.5%	90% - 110%	Yes
LCS	7.44	8.00	93.0%	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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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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961563
Date: January 2, 2007
Collected: December 13, 2006
Received: December 13, 2006
Prep/ Analyzed: December 12, 2007
Analytical Batch: 12TDS06G

Investigation: Total Dissolved Solids by EPA 160.1

Analytical Results Total Dissolved Solids

TLI I.D.	Field I.D.	Units	Method	RL	Results
961563	SC-700B-WDR-077	mg/L	EPA 160.1	312	4080

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	961563	4080	3910	2.13%	≤ 5%	Yes

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

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

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

Laboratory No.: 961563

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Date: January 2, 2007
Collected: December 13, 2006
Received: December 13, 2006
Prep/ Analyzed: December 13, 2007
Analytical Batch: 12CrH06N

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
961563	SC-700B-WDR-077	13:45	20:43	mg/L	1.05	0.00020	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	961563	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	961563	0.00	1.06	0.00100	0.00106	0.00115	0.00106	108%	90-110%	Yes
MSD	961563	0.00	1.06	0.00100	0.00106	0.00114	0.00106	108%	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	0.0106	0.0100	106%	95% - 105%	No
MRCVS#2	0.0102	0.0100	102%	95% - 105%	Yes
LCS	0.00498	0.00500	99.6%	90% - 110%	Yes
LCSD	0.00501	0.00500	100%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: 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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2
Prep. Batch: 122706A

Laboratory No.: 961563

Date: January 2, 2007
Collected: December 13, 2006
Received: December 13, 2006
Prep/ Analyzed: December 27, 2007
Analytical Batch: 122706A

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
961563	SC-700B-WDR-077	mg/L	EPA 200.7	13:23	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	961796	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	961796	0.00	1.04	0.0100	0.0104	0.00900	0.0104	86.5%	70-130%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00985	0.0100	98.5%	90% - 110%	Yes
MRCVS#1	0.0107	0.0100	107%	90% - 110%	Yes
ICS	0.00935	0.0100	93.5%	80% - 120%	Yes
LCS	0.0104	0.0100	104%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.
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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-077]

COC Number

TURNAROUND TIME 5 Days

DATE 12-13-06 PAGE 1 OF 1

961563

COMPANY E2

PROJECT NAME PG&E Topock

PHONE (530) 229-3303 FAX (530) 339-3303

ADDRESS 155 Grand Ave Ste 1000
Oakland, CA 94612

P.O. NUMBER 346129.1M.02.EZ

SAMPLERS (SIGNATURE David Chay

ALERT!!
Level III QC

Rec'd 12/13/06
961563

SAMPLE I.D.	DATE	TIME	DESCRIPTION	CR6 (218.6) Lab Filtered	Total Metals (200.7) Total Chromium	Specific Conductance (120.1)	pH (150.1)	TDS (160.1)	Turbidity (180.1)	NUMBER OF CONTAINERS	COMMENTS
SC-700B-WDR-077	12-13-06	1345	Groundwater	x	x	x	x	x	x	3	pH-2
										3	TOTAL NUMBER OF CONTAINERS

031

RUSH

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished) David Chay	Printed Name David Chaney	Company/ Agency OMI	Date/ Time 12-13-06 15:30
Signature (Received) MONGARROD	Printed Name MONGARROD	Company/ Agency T.L.I.	Date/ Time 12/13/06 20:20
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:

TRUESDAIL LABORATORIES, INC.

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www.truesdail.com

December 28, 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-078 PROJECT, GROUNDWATER MONITORING,

TLI NO.: 961796

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-078 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 December 20, 2006, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

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.: 346129.IM.02.E2

Laboratory No.: 961796
Date: December 28, 2006
Collected: December 20, 2006
Received: December 20, 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	Riddhi Patel
EPA 218.6	Hexavalent Chromium	Faisal Raihan

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

Laboratory No.: 961796
Date Received: December 20, 2006
Revision 1

Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

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
961796	SC-700B-WDR-078	11:50	ND	ND	ND	8.12	6960	4250

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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2
Prep. Batch: 122706A

Laboratory No.: 961796

Date: December 28, 2006
Collected: December 20, 2006
Received: December 20, 2006
Prep/ Analyzed: December 27, 2006
Analytical Batch: 122706A

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
961796	SC-700B-WDR-078	mg/L	EPA 200.7	13:27	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	961796	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	961796	0.00	1.04	0.0100	0.0104	0.00900	0.0104	86.5%	70-130%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00985	0.0100	98.5%	90% - 110%	Yes
MRCVS#1	0.0107	0.0100	107%	90% - 110%	Yes
ICS	0.00935	0.0100	93.5%	80% - 120%	Yes
LCS	0.0104	0.0100	104%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

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

Laboratory No.: 961796

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Date: December 28, 2006
Collected: December 20, 2006
Received: December 20, 2006
Prep/ Analyzed: December 20, 2006
Analytical Batch: 12CrH06T

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
961796	SC-700B-WDR-078	11:50	20:21	mg/L	10.0	0.0020	ND

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

Laboratory No.: 961796

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Date: December 28, 2006
Collected: December 20, 2006
Received: December 20, 2006
Prep/ Analyzed: December 20, 2006
Analytical Batch: 12CrH06T

Investigation: Hexavalent Chromium by EPA 218.6

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	961723	0.00158	0.00153	3.22%	≤ 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	961796	0.00	1.06	0.00100	0.00106	0.00056	0.00106	52.8%	90-110%	No
MS	961796	0.00	5.00	0.00100	0.00500	0.00423	0.00500	84.6%	90-110%	No
MS	961796	0.00	10.0	0.00100	0.0100	0.00902	0.0100	90.2%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00493	0.00500	98.6%	90% - 110%	Yes
MRCVS#1	0.00978	0.0100	97.8%	95% - 105%	Yes
MRCVS#2	0.0100	0.0100	100%	95% - 105%	Yes
MRCVS#3	0.0102	0.0100	102%	95% - 105%	Yes
MRCVS#4	0.0104	0.0100	104%	95% - 105%	Yes
MRCVS#5	0.00996	0.0100	99.6%	95% - 105%	Yes
LCS	0.00492	0.00500	98.4%	90% - 110%	Yes
LCSD	0.00494	0.00500	98.8%	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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961796
Date: December 28, 2006
Collected: December 20, 2006
Received: December 20, 2006
Prep/ Analyzed: December 21, 2006
Analytical Batch: 12TUC06T

Investigation: Turbidity by Method EPA 180.1

Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
961796	SC-700B-WDR-078	11:50	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	961786-33	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.47	8.00	93.4%	90% - 110%	Yes
LCS	7.40	8.00	92.5%	90% - 110%	Yes
LCS	7.44	8.00	93.0%	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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961796
Date: December 28, 2006
Collected: December 20, 2006
Received: December 20, 2006
Prep/ Analyzed: December 21, 2006
Analytical Batch: 12PH06Q

Investigation:

pH by EPA 150.1

Analytical Results pH

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	MDL	RL	Results
961796	SC-700B-WDR-078	11:50	09:08	pH Units	0.0570	2.00	8.12

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	961797-12	8.35	8.35	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	7.01	7.00	0.01	± 0.100 Units	Yes
LCS #2	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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961796

Date: January 12, 2007
Collected: December 20, 2006
Received: December 20, 2006
Prep/ Analyzed: December 21, 2006
Analytical Batch: 12EC06N
Revision 1

Investigation:

Specific Conductivity by EPA 120.1

Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
961796	SC-700B-WDR-078	µmhos/cm	EPA 120.1	1.00	2.00	6960

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	961796 10x	9040	9050	0.11%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	685	706	97.0%	90% - 110%	Yes
CVS#1	975	1000	97.5%	90% - 110%	Yes
LCS	685	706	97.0%	90% - 110%	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

For Mona Nassimi, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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REPORT

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

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961796
Date: December 28, 2006
Collected: December 20, 2006
Received: December 20, 2006
Prep/ Analyzed: December 21, 2006
Analytical Batch: 12TDS06M

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

Analytical Results Total Dissolved Solids

TLI I.D.	Field I.D.	Units	Method	RL	Results
961796	SC-700B-WDR-078	mg/L	EPA 160.1	250	4250

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	961796	4250	4260	0.12%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	492	500	98.4%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

961796

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-078]

COC Number

TURNAROUND TIME 5 Days

DATE 12-20-06 PAGE 1 OF 1

COMPANY E2

PROJECT NAME PG&E Topock

PHONE (530) 229-3303 FAX (530) 339-3303

ADDRESS 155 Grand Ave Ste 1000
Oakland, CA 94612

P.O. NUMBER 346129.IM.02.E2

SAMPLERS (SIGNATURE) LeRoy Taylor

RUSH

SAMPLE I.D.	DATE	TIME	DESCRIPTION	CR6 (218.6) Lab Filtered	Total Metals (200.7) Total Chromium	Specific Conductance (120.1)	pH (150.1)	TDS (160.1)	Turbidity (180.1)	NUMBER OF CONTAINERS	COMMENTS
SC-700B-WDR-078	12-20-06	11:50	Groundwater	x	x	x	x	x	x	3	PH=7
										3	TOTAL NUMBER OF CONTAINERS

SC-10

For Sample Conditions See Form Attached

ALERT!! Level III QC

Rec'd 12/20/06 961796

CHAIN OF CUSTODY SIGNATURE RECORD

	Signature	Printed Name	Company/ Agency	Date/ Time
Relinquished				
Received	Ana L. Brown	Ana L Brown	TLI	12-20-06 19:34
Relinquished				
Received				
Relinquished				
Received				

SAMPLE CONDITIONS

RECEIVED COOL ☐ WARM ☐ °F

CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

TRUESDAIL LABORATORIES, INC.
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January 4, 2007

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-079 PROJECT, GROUNDWATER MONITORING,

TLI NO.: 961970

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-079 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 December 27, 2006, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

No violations or nonconformance actions occurred for this data package.

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi
Manager, Analytical Services

K. R. P. Iyer

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

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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: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2

Laboratory No.: 961970
Date: January 4, 2007
Collected: December 27, 2006
Received: December 27, 2006

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Iordan Stavrev
EPA 150.1	pH	Iordan Stavrev
EPA 160.1	Total Dissolved Solids	Tina Acquiat
EPA 180.1	Turbidity	Gautam Savani
EPA 200.7	Total Chromium	Riddhi Patel
EPA 218.6	Hexavalent Chromium	Faisal Raihan

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

Laboratory No.: 961970
Date Received: December 27, 2006
Revision 1

Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

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
961970	SC-700B-WDR-079	10:15	ND	ND	ND	7.67	7050	5050

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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961970
Date: January 11, 2007
Collected: December 27, 2006
Received: December 27, 2006
Prep/ Analyzed: December 28, 2006
Analytical Batch: 12EC06R
Revision 1

Investigation: **Specific Conductivity by EPA 120.1**

Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
961970	SC-700B-WDR-079	µmhos/cm	EPA 120.1	1.00	2.00	7050

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	961970	7050	7090	0.57%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	686	706	97.2%	90% - 110%	Yes
CVS#1	971	1000	97.1%	90% - 110%	Yes
CVS#2	967	1000	96.7%	90% - 110%	Yes
LCS	695	706	98.4%	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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2
Prep. Batch: 010307A

Laboratory No.: 961970
Date: January 4, 2007
Collected: December 27, 2006
Received: December 27, 2006
Prep/ Analyzed: January 3, 2007
Analytical Batch: 010307A

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
961970	SC-700B-WDR-079	mg/L	EPA 200.7	10:30	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	961970	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	961970	0.00	1.04	0.0100	0.0104	0.0100	0.0104	96.2%	70-130%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00992	0.0100	99.2%	90% - 110%	Yes
MRCVS#1	0.0109	0.0100	109%	90% - 110%	Yes
ICS	0.0106	0.0100	106%	80% - 120%	Yes
LCS	0.00991	0.0100	99.1%	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
14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

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

Laboratory No.: 961970

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Date: January 4, 2007
Collected: December 27, 2006
Received: December 27, 2006
Prep/ Analyzed: December 28, 2006
Analytical Batch: 12CrH06W

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
961970	SC-700B-WDR-079	10:15	06:44	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	961970	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	961970	0.00	1.06	0.00100	0.00106	0.00102	0.00106	96.2%	90-110%	Yes
MS	961970	0.00	5.00	0.00100	0.00500	0.00502	0.00500	100%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00501	0.00500	100%	90% - 110%	Yes
MRCVS#1	0.0101	0.0100	101%	95% - 105%	Yes
LCS	0.00499	0.00500	99.8%	90% - 110%	Yes
LCSD	0.00498	0.00500	99.6%	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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961970
Date: January 4, 2007
Collected: December 27, 2006
Received: December 27, 2006
Prep/ Analyzed: December 28, 2006
Analytical Batch: 12TUC06W

Investigation: Turbidity by Method EPA 180.1

Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
961970	SC-700B-WDR-079	10:15	NTU	1.00	0.100	ND

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	961965-15	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.81	8.00	97.6%	90% - 110%	Yes
LCS	7.74	8.00	96.8%	90% - 110%	Yes
LCS	7.69	8.00	96.1%	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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961970
Date: January 4, 2007
Collected: December 27, 2006
Received: December 27, 2006
Prep/ Analyzed: December 28, 2006
Analytical Batch: 12PH06T

Investigation:

pH by EPA 150.1

Analytical Results pH

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	MDL	RL	Results
961970	SC-700B-WDR-079	10:15	07:55	pH Units	0.0570	2.00	7.67

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	961970	7.67	7.61	0.06	± 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	7.02	7.00	0.02	± 0.100 Units	Yes
LCS #2	7.03	7.00	0.03	± 0.100 Units	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.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961970
Date: January 4, 2007
Collected: December 27, 2006
Received: December 27, 2006
Prep/ Analyzed: January 2, 2007
Analytical Batch: 01TDS07A

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

Analytical Results Total Dissolved Solids

TLI I.D.	Field I.D.	Units	Method	RL	Results
961970	SC-700B-WDR-079	mg/L	EPA 160.1	250	5050

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	961970	5050	4670	3.91%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	490	500	98.0%	90% - 110%	Yes

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

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager
Analytical Services

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

[IM3Plant-WDR-079]

961970

COC Number

TURNAROUND TIME 5 Days

DATE 12-27-06 PAGE 1 OF 1

COMPANY	E2
PROJECT NAME	PG&E Topock
PHONE	(530) 229-3303 FAX (530) 339-3303
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612
P.O. NUMBER	346129.1m.02.132
SAMPLERS (SIGNATURE	

Rec'd 12/27/06
961970

SAMPLE I.D.	DATE	TIME	DESCRIPTION	CR6 (218.6) Lab Filtered	Total Metals (200.7) Total Chromium	Specific Conductance (120.1)	pH (150.1)	TDS (160.1)	Turbidity (180.1)	NUMBER OF CONTAINERS	COMMENTS
SC-700B-WDR-079	12/27/06	10:15	Groundwater	x	x	x	x	x	x	3	pH=2
										3	TOTAL NUMBER OF CONTAINERS

For Sample Conditions See Form Attached

ALERT!! Level III QC

RUSH

032

CHAIN OF CUSTODY SIGNATURE RECORD

	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	David Chan	CMI	12-27-06 15:30
Signature (Received)	David S.	TLI	12-27-06 19:30
Signature (Relinquished)			
Signature (Received)			
Signature (Relinquished)			
Signature (Received)			

SAMPLE CONDITIONS

RECEIVED COOL ☐ WARM ☐ °F

CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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14201 FRANKLIN AVENUE
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December 20, 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 PROJECT, SLUDGE SAMPLE-15, TLI NO.: 961322

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock project, Sludge Sample-15. 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 December 6, 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

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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www.truesdail.com

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Soil Sample
Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2

Laboratory No.: 961322
Date: December 20, 2006
Collected: December 6, 2006
Received: December 6, 2006

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 300.0	Fluoride	Giawad Ghenniwa

TRUESDAIL LABORATORIES, INC.

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REPORT

Client: E2 Consulting Engineers, Inc.
155 Grand Ave. Suite 1000
Oakland, CA 94612
Attention: Shawn Duffy
Sample: One (1) Soil Sample
Project Name: PG&E Topock Project
Project No.: 346129.IM.02.E2
P.O. No.: 346129.IM.02.E2

Laboratory No.: 961322
Date: December 20, 2006
Collected: December 6, 2006
Received: December 6, 2006
Prep/ Analyzed: December 12, 2006
Analytical Batch: 12AN06J

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
961322	SC-Sludge-WDR-076	mg/kg	EPA 300.0	15:49	20.0	4.00	13.2

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	961256-13	2.43	2.42	0.41%	≤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	961256-13	2.43	1.00	4.00	4.00	6.21	6.43	94.5%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.18	4.00	105%	90% - 110%	Yes
MRCVS#1	3.12	3.00	104%	90% - 110%	Yes
MRCVS#2	3.12	3.00	104%	90% - 110%	Yes
MRCVS#3	3.11	3.00	104%	90% - 110%	Yes
LCS	4.14	4.00	104%	90% - 110%	Yes
LCSD	4.18	4.00	105%	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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14201 Franklin Avenue, Tustin, CA 92780-7008
(714)730-6239 FAX: (714) 730-6462
www.truesdail.com

CHAIN OF CUSTODY RECORD

[Sludge Sampie-15]

961322

COC Number

TURNAROUND TIME 10 Days

DATE 12·6·06 PAGE 1 OF 1

COMPANY E2

PROJECT NAME PG&E Topock

PHONE (530) 229-3303 FAX (530) 339-3303

ADDRESS 155 Grand Ave Ste 1000
Oakland, CA 94612

P.O. NUMBER 346129.1M.02.E2

SAMPLERS (SIGNATURE [signature]

Rec'd 12/06/06
~~SR~~2c 961322

SAMPLE I.D.	DATE	TIME	DESCRIPTION	Anions (300.0) Fl	NUMBER OF CONTAINERS	COMMENTS
SC-Sludge-WDR-076	12·6·06	1301	Soil	x		
						TOTAL NUMBER OF CONTAINERS

013

ALERT!!
Level III QC

For Sample Conditions
See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD

Signature	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time
Signature (Received) L. Shabunina	Printed Name L. Shabunina	Company/ Agency TLI	Date/ Time 12/6/06 20⁰⁰
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:

DEPARTMENT OF HEALTH SERVICES

TITLE 22

96-HOUR ACUTE AQUATIC TOXICITY SCREEN

FATHEAD MINNOW (*Pimephales promelas*)

Prepared For:

Truesdail Laboratories, Inc.

Prepared By:

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

January 2007

INDEX

CHAIN OF CUSTODY

TRUESDAIL LABORATORIES, INC.
14201 FRANKLIN AVENUE, TUSTIN, CALIFORNIA 92780

ALERT!!
Level III QC

Laboratory Transmittal Form

Date: 12/07/06 Page: 1 of 1
Laboratory: MBC Applied Environmental Sciences
Attention: Sonia M. Beck
Address: 3000 Redhill Ave.
City: Costa Mesa State: CA Zip: 92626-4524

Please sign, date & *return this form with the results*, to:
TRUESDAIL LABORATORIES, INC.
Attn: Sean Condon
14201 Franklin Avenue, Tustin, California 92780
Please include Truesdail Sample ID on your invoice

Sample ID	Date	Time	Matrix	Tests/Methods Required: Acute Aquatic Toxicity, 96 hr Acute	Container Qty.	Comments/Container Type
961323	12/6/06	13:01	Soil	X	2	Glass /Jar 4 oz
						Level 3
					2	Containers Total

Type of Service:
☐ X Normal (5-10 day TAT) ☐ RUSH (5 day TAT)
☐ URGENT (24-48 hr. TAT) ☐ Results needed by: _____

Sample Conditions:
Received on Ice? Yes/No Sealed? Yes/No
Special Shipment/Handling or Storage Requirements:

Relinquished by: Michelle Blood N.B. TLI 12/7/06 @ 10:23
Signature Printed Name Company Date Time

Received by: Byron Kay MBC 7 Dec '06 @ 10:25
Signature Printed Name Company Date Time

TLI Phone:(714) 730-6239 • Fax (714) 730-6462

COVER LETTER

8 January 2007

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

Attention: Sean Condon

Dear Mr. Condon,

The following are the results of the DOHS 96-hour Acute Aquatic Toxicity Screening test performed on the sample labeled 961323 submitted on 7 December 2006.

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

MBC Sample Number 07-112 - Client Identification: 961323

PERCENT SURVIVAL

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

LC50 > 750 mg/l

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

Cordially,
MBC *Applied Environmental Sciences*

Sonja M. Beck
Bioassay Manager

SUMMARY OF TEST CONDITIONS

Summary of Test Conditions for Fathead Minnow, *Pimephales promelas* , DOHS 96-Hour Survival Acute Toxicity Test

Protocol:	Polisini 1988
Test Type:	Static non-renewal
Temperature (°C):	20±1°C. Temperature should not deviate by more than 3°C during the test.
Photoperiod:	16-hours light, 8-hours dark
Water Quality Analyzer:	Hach HQ40d multi-parameter
Test Solution Volume:	6-Liters
Renewal of Test Solutions:	None
Age of Test Organisms:	Less than 90 days old
Percent Organisms dead in acclimatization tank:	< 1%
No. of Organisms/Test Chamber:	10
No. of Replicate Test Chambers/Test Concentration:	2
No. of Organisms/Test Concentration:	20
Feeding Regime:	None
Cleaning:	None
Aeration:	None, unless DO concentrations falls below 4.0 mg/L: rate should not exceed 100 bubbles/min.
Dilution Water:	Synthetic Soft Water
Test Concentrations:	250 mg/l, 500 mg/l, and 750 mg/l
Test Duration:	96 Hours
Endpoints:	LC_{50}

Client : Truesdail

Date (Intial Sample): 6 December 2006

Sample Identification : 961323

Project Manager : Sean Condon

SAMPLE ANALYSIS

SAMPLE ANALYSIS

CLIENT:	Truesdail Laboratories, Inc.
SAMPLE IDENTIFICATION:	961323
MBC JOB #:	07413X
MBC SAMPLE #:	07-112
SAMPLE DATE/TIME:	12/06/2006 1301
DATE SAMPLE RECEIVED:	12/07/2006
ANALYSIS REQUIRED:	Title 22 DOHS 96-hour Acute Aquatic Toxicity Test
ORGANISM REQUIRED:	Fathead minnow (*Pimephales promelas*)
DATE/TIME INITIATED:	01/04/2007 1615
DATE/TIME TERMINATED:	01/08/2007 1430
AMOUNT OF SAMPLE:	Appx. 240 grams
SAMPLE DESCRIPTION:	Orange Sludge
SAMPLE PREPARATION:	Dilute w/ appx. 250 mls dilution water, shake for 6 hours.
ADJUSTMENTS DURING ANALYSIS:	Air added at 0 hours.
ANALYST(s):	Chris Lim, Yi Young

Reviewed By:

WATER QUALITY / ORGANISM ENUMERATION DATA

TITLE 22 DOHS 96-HOUR ACUTE AQUATIC TOXICITY TEST

CLIENT: Truesdail Laboratories, Inc.

SAMPLE IDENTIFICATION: 961323 **SAMPLE DATE/TIME:** 12/06/2006 1301

MBC Job #: 07413X **DATE/TIME INITIATED:** 01/04/2007 1615

MBC Sample #: 07-112 **DATE/TIME TERMINATED:** 01/08/2007 1430

Container	Test	0 Hours				24 Hours				48 Hours			
#	Conc.	pH	DO	Temp	Live	pH	DO	Temp	Live	pH	DO	Temp	Live
1	Control	7.7	8.5	19.3	10	7.6	7.7	21.3	10	7.6	7.6	21.0	10
2	250 mg/l	7.8	8.5	19.3	10	7.7	7.7	21.3	10	7.7	7.7	21.0	10
3	250 mg/l	7.8	8.5	19.4	10	7.7	7.6	21.5	10	7.7	7.6	21.1	10
4	500 mg/l	7.8	8.5	19.4	10	7.7	7.6	21.9	10	7.7	7.6	21.2	10
5	500 mg/l	7.8	8.5	19.3	10	7.7	7.5	22.0	10	7.8	7.5	21.2	10
6	750 mg/l	7.8	8.5	19.4	10	7.8	7.6	21.8	10	7.8	7.5	21.4	10
7	750 mg/l	7.8	8.5	19.5	10	7.7	7.6	21.9	10	7.8	7.5	21.5	10

Aquar.	Test	72 Hours				96 Hours			
#	Conc.	pH	DO	Temp	Live	pH	DO	Temp	Live
1	Control	7.6	7.6	21.6	10	7.5	7.9	20.6	10
2	250 mg/l	7.7	7.5	21.5	10	7.7	7.8	20.5	10
3	250 mg/l	7.7	7.7	21.5	10	7.6	7.6	20.7	10
4	500 mg/l	7.8	7.6	21.7	10	7.7	7.7	20.8	10
5	500 mg/l	7.8	7.6	21.7	10	7.6	7.6	21.3	10
6	750 mg/l	7.8	7.4	21.6	10	7.9	7.8	21.0	10
7	750 mg/l	7.9	7.5	21.7	10	7.6	7.4	21.5	10

ORGANISM: Fathead minnow (Pimephales promelas)
ACCLIMATIZATION (20°C): 6 Days
ORGANISM BATCH #: 122906
NOTES: Normal test conditiions.

RESULTS:

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

LC50 > 750 mg/l

RANGE:

	Min.	Max.
pH Range:	7.5	7.9
DO Range:	7.4	8.5
Temp Range:	19.3	22.0

ALKALINITY:

	0 HOURS	96 HOURS
Control:	30	48
750 mg/l:	37	59

HARDNESS:

	0 HOURS	96 HOURS
Control:	39	53
750 mg/l:	46	64

Reviewed By: BB

ORGANISM LENGTH / WEIGHT DATA

ORGANISM LENGTH / WEIGHT DATA

CLIENT: Truesdail Laboratories, Inc.

SAMPLE IDENTIFICATION: 961323

MBC JOB #: 07413X

MBC SAMPLE #: 07-112

ORGANISM: Fathead minnow (Pimephales promelas)

	STANDARD LENGTH (mm)	WEIGHT (grams)		STANDARD LENGTH (mm)	WEIGHT (grams)
1.	31	0.35	11.	28	0.28
2.	31	0.30	12.	28	0.24
3.	28	0.28	13.	29	0.30
4.	31	0.36	14.	28	0.30
5.	30	0.31	15.	29	0.31
6.	30	0.28	16.	29	0.28
7.	27	0.22	17.	30	0.32
8.	29	0.29	18.	30	0.34
9.	29	0.31	19.	33	0.33
10.	28	0.31	20.	30	0.30

	Length (mm)	Weight (g)
Average:	29	0.30
Maximum:	33	0.36
Minimum:	27	0.22

Technician: YY Date: 01/08/2007

Reviewed By: BB

SEVERN TRENT STL

STL Los Angeles
1721 South Grand Avenue
Santa Ana, CA 92705

Tel: 714 258 8610 Fax: 714 258 0921
www.stl-inc.com

January 4, 2007

STL LOT NUMBER: **E6L070414**

Priya Kumar / E2
CH2M Hill Inc
155 Grand Ave
Suite 1000
Oakland, CA 94612

Dear Ms. Kumar,

This report contains the analytical results for the sample received under chain of custody by STL Los Angeles on December 7, 2006. This sample is associated with your PG&E TOPOCK GWM / E2 project.

STL Los Angeles certifies that the test results provided in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of the report. NELAP Certification Number for STL Los Angeles is 01118CA / E87652.

Any matrix related anomaly is footnoted within the report. A cooler receipt temperature between 2-6 degrees Celsius is within EPA acceptance criteria. The temperature(s) of the cooler received for this project can be found on the Project Receipt Checklist. Historical control limits for the LCS are used to define the estimate of uncertainty for a method. All applicable quality control procedures met method-specified acceptance criteria.

The Analytical Report was provided to you on January 4, 2007.

This report contains 000154 pages.

If you have any questions, please feel free to call me at (714) 258-8610.

Sincerely,

Marisol Tabirara
Project Manager

cc: Project File

E6L070414

E6L070414

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

CHAIN OF CUSTODY RECORD

[Sludge Sample-15]

COC Number
TURNAROUND TIME 10 Days
DATE 12-6-06 PAGE 1 OF 1

MPANY E2
JECT NAME PG&E Topock GWM
ONE (530) 229-3303 FAX (530) 339-3303
DRESS 155 Grand Ave Ste 1000
Oakland, CA 94612
NUMBER 346129.1M.02.E2 TEAM 1
MPLERS (SIGNATURE [signature]

MPLE I.D.	DATE	TIME	DESCRIPTION	Metals (6010B) Title 22	Metals (7199)	Mercury (7471A)												NUMBER OF CONTAINERS	COMMENTS
-Sludge-WDR-076	12-6-06	1301	Soil	x	x	x													
																			TOTAL NUMBER OF CONTAINERS

3

CHAIN OF CUSTODY SIGNATURE RECORD

Signature	Printed Name	Company/Agency	Date/Time
nature linquished)	Printed Name	Company/ Agency	Date/ Time
nature ceived) L. Shakuming	Printed Name L. Shakuming	Company/ Agency TLI	Date/ Time 12/6/06 2000
nature linquished) Nichole Blowers	Printed Name N.B.	Company/ Agency TLI	Date/ Time 12/7/06 1145
nature ceived) V. Padilla	Printed Name V. Padilla	Company/ Agency STL	Date/ Time 12/7/06 1145
nature linquished) V. Padilla	Printed Name V Padilla	Company/ Agency STL	Date/ Time 12/7/06 1215
nature ceived) [signature]	Printed Name C. Alvarenga	Company/ Agency STL	Date/ Time 12/7/06 1215

SAMPLE CONDITIONS

RECEIVED COOL ☐ WARM ☐ ____ °F

CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

Temp- 5.9-0.2=5.7

METHOD / ANALYST SUMMARY

E6L070414

ANALYTICAL METHOD	ANALYST	ANALYST ID
MCAWW 160.3 MOD	Janice Salenga	403147
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.

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-076

TOTAL Metals

Lot-Sample #...: E6L070414-001 **Matrix.....:** SO
Date Sampled...: 12/06/06 13:01 **Date Received..:** 12/07/06 12:15
% Moisture.....: 75

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 6348208						
Arsenic	**38**	**20**	**mg/kg**	**SW846 6010B**	**12/15/06**	**JK24W1AA**
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Antimony	ND G	120	mg/kg	SW846 6010B	12/15/06	JK24W1AC
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Barium	**100**	**41**	**mg/kg**	**SW846 6010B**	**12/15/06**	**JK24W1AD**
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Cadmium	ND G	10	mg/kg	SW846 6010B	12/15/06	JK24W1AE
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Chromium	**14000**	**20**	**mg/kg**	**SW846 6010B**	**12/15/06**	**JK24W1AF**
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Beryllium	ND G	10	mg/kg	SW846 6010B	12/15/06	JK24W1AG
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Lead	ND G	10	mg/kg	SW846 6010B	12/15/06	JK24W1AH
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Selenium	ND G	10	mg/kg	SW846 6010B	12/15/06	JK24W1AJ
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Silver	ND G	20	mg/kg	SW846 6010B	12/15/06	JK24W1AK
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		

(Continued on next page)

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-076

TOTAL Metals

Lot-Sample #...: E6L070414-001 **Matrix.....:** SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Cobalt	ND G	100	mg/kg	SW846 6010B	12/15/06	JK24W1AL
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Copper	ND G	51	mg/kg	SW846 6010B	12/15/06	JK24W1AM
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Molybdenum	ND G	81	mg/kg	SW846 6010B	12/15/06	JK24W1AN
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Nickel	ND G	81	mg/kg	SW846 6010B	12/15/06	JK24W1AP
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Thallium	**24**	**20**	**mg/kg**	**SW846 6010B**	**12/15/06**	**JK24W1AQ**
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Vanadium	ND G	100	mg/kg	SW846 6010B	12/15/06	JK24W1AR
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Zinc	ND G	41	mg/kg	SW846 6010B	12/15/06	JK24W1AT
		Dilution Factor: 5		Analysis Time..: 18:21	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6348131		
Prep Batch #...: 6349228						
Mercury	ND	0.41	mg/kg	SW846 7471A	12/15-12/19/06	JK24W1AU
		Dilution Factor: 1		Analysis Time..: 11:03	Analyst ID.....: 000023	
		Instrument ID..: M04		MS Run #.....: 6349166		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-076

General Chemistry

Lot-Sample #...: E6L070414-001 Work Order #...: JK24W Matrix.....: SO
Date Sampled...: 12/06/06 13:01 Date Received..: 12/07/06 12:15
% Moisture.....: 75

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	82	1.6	mg/kg	SW846 7199	01/03/07	6352584
	Dilution Factor: 2			Analysis Time..: 18:36	Analyst ID.....: 000022	
	Instrument ID..: W18			MS Run #.....: 7003217		
Percent Moisture	75	0.10	%	MCAWW 160.3 MOD	12/08-12/09/06	6342544
	Dilution Factor: 1			Analysis Time..: 09:30	Analyst ID.....: 4031477	
	Instrument ID..: W15			MS Run #.....: 6342303		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

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

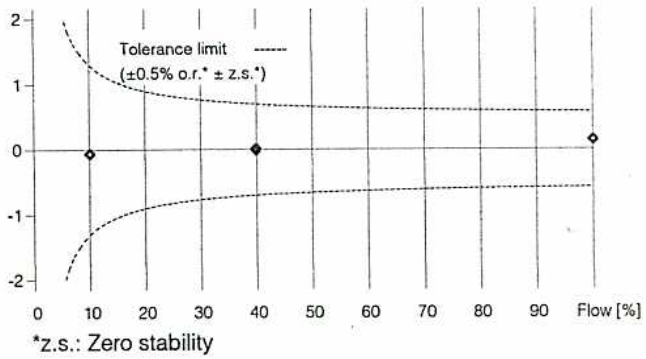
0
Zero point

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

Flow Calibration with Adjustment

Endress+Hauser
People for Process Automation

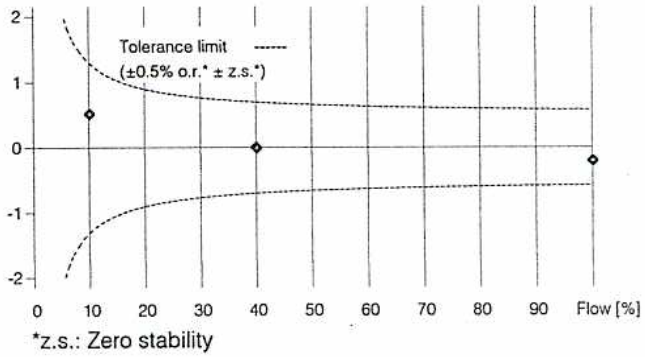
30057870-1275191

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

Flow Calibration with Adjustment

Endress+Hauser
People for Process Automation

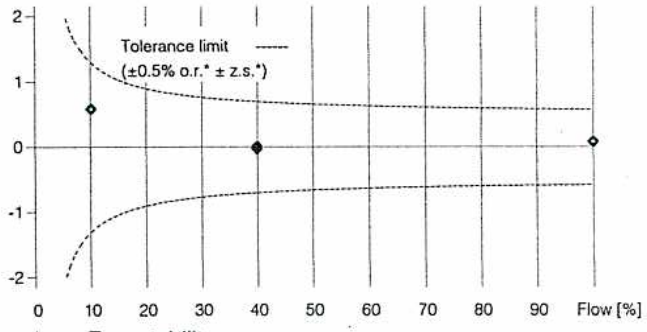
30057871-1275192

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

Flow Calibration with Adjustment

Endress+Hauser
People for Process Automation

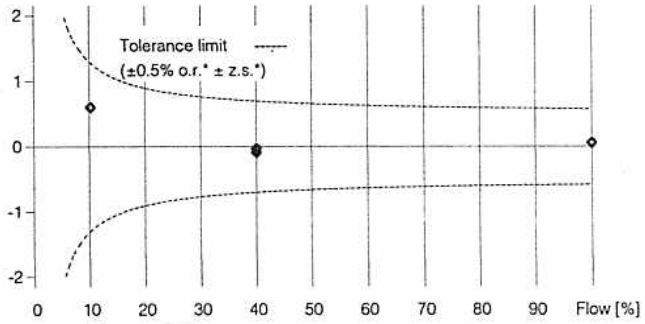
30058442-1275193

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	0.9218 Calibration factor
6A022216000 Serial Nº	12 Zero point
FIT-103 Tag Nº	78.3 °F Water temperature

Flow [%]	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ o.r.* [%]	Outp.** [mA]
10.1	15.7	30.0	7.8501	7.8977	0.61	5.62
40.0	62.2	30.0	31.123	31.095	-0.09	10.39
40.0	62.3	30.0	31.151	31.142	-0.03	10.40
100.2	155.9	30.0	78.013	78.063	0.06	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.

12-09-2004
Date of calibration

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143

Jim Baase
Operator

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

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

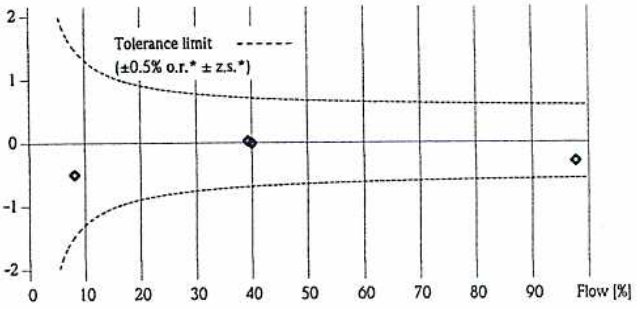
0
Zero point

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

Flow Calibration with Adjustment

Replica 30067967-1385113

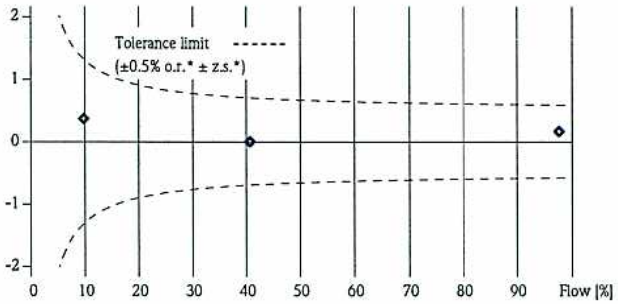
41743399 Purchase order number	FCP-20 MEDIUM Calibration rig
US-49316500-10 / Endress+Hauser Flowtec Order N°/Manufacturer	398.3621 GPM (≙ 100%) Calibrated full scale
23P80-AL1A1AA022AW Order code	Current 4 - 20 mA Calibrated output
PROMAG 23 P 3" Transmitter/Sensor	1.1476 Calibration factor
7700C616000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

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

John Redmon
Operator

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

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

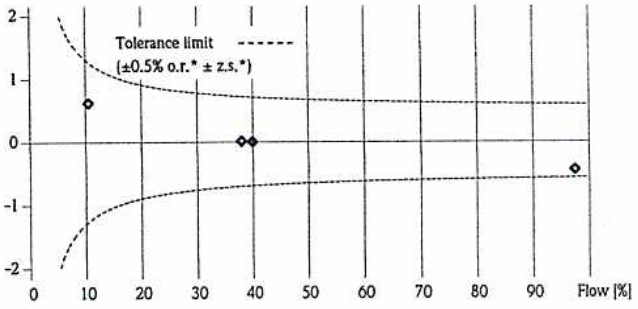
0
Zero point

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

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

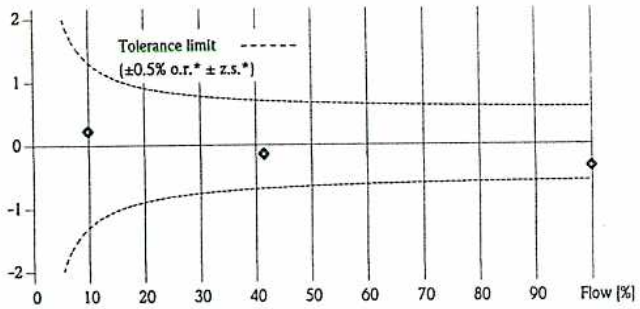
72.2 °F
Water temperature

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

Flow Calibration without Adjustment

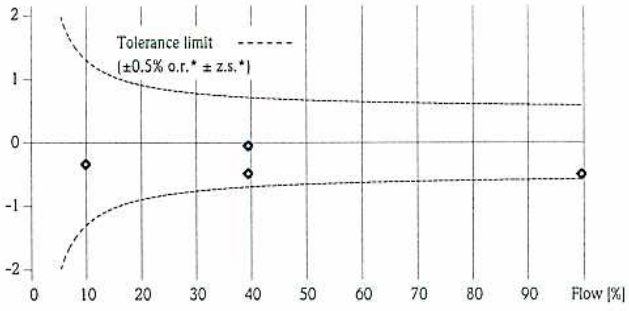
30092169-1385272

WWRA-000923-F Purchase order number	FCP-6.F Calibration rig
US-19050353-20 / Endress+Hauser Flowtec Order N°/Manufacturer	155.6102 GPM (≙ 100%) Calibrated full scale
23P50-AL1A1AA022AW Order code	Current 4 - 20 mA Calibrated output
PROMAG 23 P 2" Transmitter/Sensor	0.9248 Calibration factor
7700F216000 Serial N°	0 Zero point
- FIT-1203/IW-03 installed 12/19/06 Tag N°	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	15.5	30.1	7.7755	7.7489	-0.34	5.59
39.6	61.5	30.1	30.846	30.693	-0.49	10.30
39.6	61.6	30.1	30.852	30.834	-0.06	10.33
99.8	155.3	30.1	77.842	77.452	-0.50	19.89
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*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.

M. E. Trueblood Jr.

11-30-2006
Date of calibration

Morris E. Trueblood Jr.
Operator

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

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

Appendix C
Daily Volumes of Groundwater Treated

July 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)**
July	1	2006	---	---	136,132	51,998	188,130	168,012	---	168,012	21,971
July	2	2006	---	---	137,977	51,562	189,539	168,552	---	168,552	20,770
July	3	2006	---	---	137,319	54,043	191,362	175,587	---	175,587	22,872
July	4	2006	---	---	135,617	55,002	190,619	164,588	---	164,588	19,348
July	5	2006	---	---	136,612	54,364	190,976	174,603	---	174,603	18,999
July	6	2006	---	---	135,600	54,166	189,766	160,759	---	160,759	19,459
July	7	2006	---	---	142,152	51,006	193,158	176,487	---	176,487	22,791
July	8	2006	---	---	148,541	48,521	197,062	178,012	---	178,012	21,527
July	9	2006	---	---	145,732	49,187	194,919	176,337	---	176,337	19,066
July	10	2006	---	---	143,534	49,624	193,158	163,655	---	163,655	22,709
July	11	2006	---	---	127,100	44,240	171,340	150,412	---	150,412	18,815
July	12	2006	---	---	145,058	49,841	194,899	180,138	---	180,138	20,142
July	13	2006	---	---	145,235	49,765	195,000	162,748	---	162,748	21,160
July	14	2006	---	---	139,948	48,162	188,110	162,604	---	162,604	19,874
July	15	2006	---	---	142,657	49,200	191,857	176,710	---	176,710	20,599
July	16	2006	---	---	142,543	53,358	195,902	180,768	---	180,768	22,121
July	17	2006	---	---	144,751	52,504	197,255	180,799	---	180,799	22,107
July	18	2006	---	---	142,882	54,766	197,648	176,358	---	176,358	22,505
July	19	2006	---	---	143,654	52,664	196,317	176,863	---	176,863	19,592
July	20	2006	---	---	144,931	51,904	196,834	172,197	---	172,197	20,826
July	21	2006	---	---	145,176	51,433	196,609	178,962	---	178,962	21,510
July	22	2006	---	---	144,772	52,053	196,825	178,178	---	178,178	18,037
July	23	2006	---	---	144,418	52,481	196,899	175,549	---	175,549	17,972
July	24	2006	---	---	141,883	51,522	193,405	175,197	---	175,197	18,027
July	25	2006	---	---	140,212	50,579	190,792	154,038	---	154,038	17,747
July	26	2006	---	---	145,771	48,432	194,203	177,753	---	177,753	18,535
July	27	2006	---	---	148,302	48,021	196,322	179,223	---	179,223	18,539
July	28	2006	---	---	105,173	35,861	141,034	123,525	---	123,525	14,692
July	29	2006	---	---	144,946	51,703	196,649	188,388	---	188,388	17,735
July	30	2006	---	---	142,968	52,619	195,587	181,999	---	181,999	18,766
July	31	2006	---	---	144,464	52,571	197,035	183,858	---	183,858	17,510
Total Monthly Volumes (gal)			---	---	**4,366,058**	**1,573,154**	**5,939,212**	**5,322,857**	---	**5,322,857**	**616,324**
Average Pump/Injection Rates (gpm)			---	---	**97.8**	**35.2**	**133.0**	**119.2**	---	**119.2**	**13.8**

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

August 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)**
August	1	2006	---	-95	144,804	52,016	196,725	160,350	19,805	180,155	18,641
August	2	2006	---	-94	144,596	52,286	196,788	72,960	103,492	176,452	18,637
August	3	2006	---	-97	144,615	52,171	196,689	-35	179,693	179,658	18,624
August	4	2006	---	-101	144,695	51,972	196,566	-79	177,390	177,311	19,117
August	5	2006	---	-101	144,563	52,091	196,552	-83	181,910	181,826	18,546
August	6	2006	---	-99	144,632	51,878	196,411	-85	177,156	177,071	16,104
August	7	2006	---	27,666	103,520	49,073	180,260	-82	156,374	156,292	18,369
August	8	2006	---	48,162	93,945	49,740	191,848	-82	177,660	177,578	18,588
August	9	2006	---	-87	140,823	47,795	188,531	-84	172,416	172,332	15,600
August	10	2006	---	-91	142,002	52,267	194,178	-81	172,301	172,221	17,609
August	11	2006	---	-88	143,131	52,696	195,739	-85	165,683	165,598	19,246
August	12	2006	---	-92	142,710	53,278	195,896	-90	178,152	178,062	18,102
August	13	2006	---	-89	142,462	53,643	196,017	-83	181,062	180,979	14,504
August	14	2006	---	953	141,365	52,944	195,262	-82	184,730	184,648	18,148
August	15	2006	---	-94	142,808	52,693	195,407	-86	177,306	177,220	14,123
August	16	2006	---	-89	142,941	52,827	195,679	-85	182,065	181,979	18,213
August	17	2006	---	375	141,996	51,938	194,309	-43	182,344	182,301	14,096
August	18	2006	---	-92	143,052	51,513	194,472	16,396	163,000	179,396	15,255
August	19	2006	---	-95	143,107	51,396	194,409	-89	175,275	175,186	14,107
August	20	2006	---	-94	143,107	51,362	194,375	-91	178,328	178,238	17,893
August	21	2006	---	-94	142,738	52,205	194,849	-86	181,458	181,372	17,670
August	22	2006	---	388	140,876	50,264	191,527	-88	166,500	166,412	14,520
August	23	2006	---	-90	113,950	39,704	153,564	-88	126,423	126,335	10,446
August	24	2006	---	95	133,540	47,977	181,612	2	178,655	178,657	11,491
August	25	2006	---	-103	141,448	48,477	189,822	15,368	170,169	185,536	19,723
August	26	2006	---	-98	142,508	51,006	193,416	-78	181,531	181,453	18,921
August	27	2006	---	-101	142,927	50,639	193,465	-87	175,081	174,994	18,677
August	28	2006	---	-101	143,150	50,708	193,758	-93	173,027	172,934	18,883
August	29	2006	---	188	141,752	52,845	194,785	-86	176,505	176,419	18,512
August	30	2006	---	-98	142,036	53,079	195,016	-78	169,724	169,645	14,259
August	31	2006	---	-96	139,828	51,018	190,749	-74	181,442	181,367	18,316
Total Monthly Volumes (gal)			---	**75,549**	**4,299,628**	**1,583,501**	**5,958,678**	**262,971**	**5,166,657**	**5,429,628**	**524,940**
Average Pump/Injection Rates (gpm)			---	**1.7**	**96.3**	**35.5**	**133.5**	**5.9**	**115.7**	**121.6**	**11.8**

NOTES:
gal: gallons
gpm: gallons per minute
RO: Reverse Osmosis
(1) Negative daily volumes reflect periods with the well was offline and are a result of small computational error in the electronic records. The negative values are nonethless kept as part of the monthly record for any well that was in operation during the month to maintain consistency with the onsite electronic records.

September 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)**
September	1	2006	---	---	142,035	48,982	191,017	-97	179,829	179,733	18,608
September	2	2006	---	---	99,723	33,704	133,426	-85	96,802	96,717	11,091
September	3	2006	---	---	142,417	51,603	194,019	-89	181,935	181,846	15,039
September	4	2006	---	---	145,128	52,646	197,774	-85	181,954	181,868	18,923
September	5	2006	---	---	144,010	52,997	197,007	-93	181,881	181,788	19,409
September	6	2006	---	---	96,420	27,433	123,852	-90	112,192	112,103	11,261
September	7	2006	---	---	141,602	51,590	193,192	-95	166,860	166,764	18,944
September	8	2006	---	---	141,780	53,355	195,135	-93	178,912	178,819	14,379
September	9	2006	---	---	143,562	52,651	196,213	-89	177,819	177,730	20,523
September	10	2006	---	---	142,856	52,566	195,422	-97	173,963	173,866	22,945
September	11	2006	---	---	143,739	52,249	195,988	-96	175,150	175,054	20,214
September	12	2006	---	---	142,715	53,060	195,775	-78	181,060	180,982	10,926
September	13	2006	---	---	140,173	52,535	192,708	-76	181,300	181,223	12,757
September	14	2006	---	---	146,243	48,971	195,214	-91	181,829	181,738	13,749
September	15	2006	---	---	146,486	48,642	195,128	-91	181,591	181,501	14,378
September	16	2006	---	---	142,162	49,804	191,967	-109	166,938	166,829	13,662
September	17	2006	---	---	143,290	53,765	197,054	-103	193,414	193,312	13,724
September	18	2006	---	---	143,595	53,266	196,862	-99	189,811	189,711	14,047
September	19	2006	---	---	142,595	54,076	196,671	23	184,961	184,984	13,919
September	20	2006	---	---	143,986	52,269	196,255	-90	181,686	181,597	13,872
September	21	2006	---	---	144,107	52,124	196,232	18,798	159,520	178,317	13,831
September	22	2006	---	---	143,498	52,743	196,241	2,642	184,257	186,899	13,788
September	23	2006	---	---	143,229	53,271	196,500	-106	182,831	182,725	13,913
September	24	2006	---	---	143,409	52,981	196,389	-99	183,469	183,370	13,821
September	25	2006	---	---	143,541	52,787	196,329	-98	182,012	181,914	13,857
September	26	2006	---	---	143,486	52,741	196,227	-99	171,036	170,937	10,212
September	27	2006	---	---	140,762	51,990	192,752	-101	181,205	181,104	13,757
September	28	2006	---	---	123,343	46,525	169,867	-101	156,932	156,832	10,313
September	29	2006	---	---	136,543	50,987	187,529	-88	179,120	179,032	17,509
September	30	2006	---	---	143,553	51,388	194,941	-100	179,852	179,752	13,810
Total Monthly Volumes (gal)			---	**0**	**4,179,985**	**1,513,702**	**5,693,687**	**18,926**	**5,210,121**	**5,229,047**	**447,182**
Average Pump/Injection Rates (gpm)			---	**0.0**	**96.8**	**35.0**	**131.8**	**0.4**	**120.6**	**121.0**	**10.4**

NOTES:
gal: gallons
gpm: gallons per minute
RO: Reverse Osmosis
(1) Negative daily volumes reflect periods with the well was offline and are a result of small computational error in the electronic records. The negative values are nonethless kept as part of the monthly record for any well that was in operation during the month to maintain consistency with the onsite electronic records.

October 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)**
October	1	2006	---	0	144,200	50,500	194,700	0	181,582	181,582	14,243
October	2	2006	---	0	168,886	47,585	216,471	12	201,094	201,106	14,009
October	3	2006	---	0	124,938	31,814	156,752	0	151,525	151,525	12,297
October	4	2006	---	46,120	126,952	16,110	189,182	0	166,492	166,492	29,393
October	5	2006	---	17,776	149,812	27,945	195,533	4	168,997	169,001	15,497
October	6	2006	---	0	151,304	44,309	195,613	4	181,045	181,049	14,152
October	7	2006	---	0	143,868	48,999	192,867	8	180,598	180,606	15,834
October	8	2006	---	0	143,892	47,173	191,065	8	178,287	178,295	11,779
October	9	2006	---	0	134,184	51,170	185,354	0	173,114	173,114	13,373
October	10	2006	---	0	138,336	53,843	192,179	0	186,018	186,018	14,248
October	11	2006	---	0	140,380	46,710	187,090	0	174,575	174,575	17,565
October	12	2006	---	0	140,004	44,335	184,339	0	170,357	170,357	14,289
October	13	2006	---	0	143,308	46,271	189,579	0	171,355	171,355	14,347
October	14	2006	---	0	144,000	49,186	193,186	0	180,429	180,429	14,431
October	15	2006	---	0	144,000	50,018	194,018	0	184,661	184,661	17,786
October	16	2006	---	0	144,000	49,677	193,677	4	177,545	177,549	14,486
October	17	2006	---	68	143,756	49,995	193,819	0	115,152	115,152	17,266
October	18	2006	---	0	144,000	49,677	193,677	0	0	0	15,063
October	19	2006	---	0	142,464	48,069	190,533	16,644	390,854	407,498	17,923
October	20	2006	---	0	144,004	48,403	192,407	0	172,063	172,063	14,373
October	21	2006	---	0	144,000	48,605	192,605	0	171,808	171,808	14,571
October	22	2006	---	0	144,000	48,729	192,729	0	196,324	196,324	18,542
October	23	2006	---	0	144,000	48,591	192,591	8	187,049	187,057	14,232
October	24	2006	---	0	143,896	48,633	192,529	0	178,097	178,097	14,720
October	25	2006	---	0	144,000	48,994	192,994	0	91,068	91,068	17,877
October	26	2006	---	0	121,244	41,182	162,426	0	0	0	10,785
October	27	2006	---	0	144,004	47,710	191,714	0	0	0	17,942
October	28	2006	---	0	144,004	48,142	192,146	0	0	0	14,614
October	29	2006	---	0	144,000	48,139	192,139	24	768,316	768,340	15,576
October	30	2006	---	0	144,000	48,190	192,190	0	174,489	174,489	17,053
October	31	2006	---	132	143,368	48,219	191,719	0	183,774	183,774	14,397
Total Monthly Volumes (gal)			---	**64,096**	**4,416,804**	**1,426,923**	**5,907,823**	**16,716**	**5,456,668**	**5,473,384**	**482,655**
Average Pump/Injection Rates (gpm)			---	**1.4**	**98.9**	**32.0**	**132.3**	**0.4**	**122.2**	**122.6**	**10.8**

NOTES:
gal: gallons
gpm: gallons per minute
RO: Reverse Osmosis
(1) Daily totalizer readings were used to calculate flow volumes during October 2006.
(2) Daily totalizer readings shown between October 2 and October 3 are estimated as the data historian was offline during portions of each day. Totalizer readings from before the data historian was offline, during intermittment recording periods, and after it was returned to service was used to estimate the daily flow. The total flow recorded during these days was nonetheless accurate.

November 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)**
November	1	2006	---	---	144,812	48,463	193,276	47,045	121,160	168,205	18,324
November	2	2006	---	---	130,364	42,718	173,082	-106	148,969	148,863	14,797
November	3	2006	---	---	145,177	46,047	191,224	-103	179,294	179,190	14,318
November	4	2006	---	---	143,549	49,276	192,824	-99	184,592	184,493	18,329
November	5	2006	---	---	142,209	51,972	194,181	-98	179,179	179,081	14,436
November	6	2006	---	---	142,272	51,980	194,251	-98	174,576	174,478	18,515
November	7	2006	---	---	142,324	52,004	194,328	-100	181,959	181,859	14,788
November	8	2006	---	---	141,209	52,531	193,740	-98	175,915	175,817	17,358
November	9	2006	---	---	141,933	52,947	194,880	-98	180,789	180,690	14,883
November	10	2006	---	---	142,389	52,001	194,390	-104	177,347	177,242	15,121
November	11	2006	---	---	143,371	50,138	193,509	-111	176,509	176,398	17,646
November	12	2006	---	---	143,201	50,382	193,583	-110	180,425	180,315	14,671
November	13	2006	---	---	143,100	50,630	193,729	-107	175,071	174,964	16,110
November	14	2006	---	---	142,708	49,937	192,645	-95	170,429	170,334	16,259
November	15	2006	---	---	144,086	48,747	192,833	-105	180,538	180,433	14,620
November	16	2006	---	---	144,077	48,675	192,752	-105	181,935	181,830	17,641
November	17	2006	---	---	144,014	48,744	192,758	-109	175,259	175,150	14,865
November	18	2006	---	---	143,933	48,662	192,596	-105	176,617	176,512	14,578
November	19	2006	---	---	143,909	48,678	192,587	-99	180,986	180,887	16,212
November	20	2006	---	---	143,847	48,829	192,675	-103	177,171	177,068	14,294
November	21	2006	---	---	132,885	47,574	180,459	-106	155,066	154,961	14,375
November	22	2006	---	---	141,601	52,303	193,904	-108	187,365	187,257	14,540
November	23	2006	---	---	141,684	52,106	193,790	-113	179,240	179,128	18,132
November	24	2006	---	---	141,621	52,171	193,792	-110	177,797	177,687	14,240
November	25	2006	---	---	142,769	49,706	192,475	-114	178,350	178,235	15,864
November	26	2006	---	---	142,610	50,217	192,827	-117	178,363	178,246	15,134
November	27	2006	---	---	142,346	50,690	193,036	-110	178,279	178,169	14,209
November	28	2006	---	---	129,847	46,732	176,578	-112	150,380	150,268	14,147
November	29	2006	---	---	142,650	49,671	192,322	-123	182,700	182,577	15,827
November	30	2006	---	---	142,721	49,533	192,254	-120	185,296	185,176	16,403
Total Monthly Volumes (gal)			---	---	**4,253,217**	**1,494,064**	**5,747,282**	**43,956**	**5,231,560**	**5,275,516**	**470,636**
Average Pump/Injection Rates (gpm)			---	---	**98.5**	**34.6**	**133.0**	**1.0**	**121.1**	**122.1**	**10.9**

NOTES:
gal: gallons
gpm: gallons per minute
RO: Reverse Osmosis
(1) Negative daily volumes reflect periods with the well was offline and are a result of small computational error in the electronic records. The negative values are nonethless kept as part of the monthly record for any well that was in operation during the month to maintain consistency with the onsite electronic records.

December 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)**
December	1	2006	---	---	142,572	49,747	192,319	-123	176,149	176,027	14,123
December	2	2006	---	---	142,583	49,736	192,319	-117	175,069	174,951	16,501
December	3	2006	---	---	142,527	49,758	192,285	-118	179,994	179,876	15,692
December	4	2006	---	---	143,672	49,960	193,631	-120	166,635	166,515	14,323
December	5	2006	---	---	145,122	49,879	195,001	-110	189,343	189,233	15,756
December	6	2006	---	---	143,744	50,628	194,373	-121	182,052	181,930	13,818
December	7	2006	---	---	146,188	50,125	196,313	-109	178,544	178,436	13,734
December	8	2006	---	---	146,229	50,045	196,274	-116	182,777	182,661	12,753
December	9	2006	---	---	146,192	50,022	196,215	-105	184,837	184,731	11,718
December	10	2006	---	---	146,255	49,866	196,121	-102	180,773	180,671	13,889
December	11	2006	---	---	138,705	47,529	186,234	-121	178,900	178,779	13,983
December	12	2006	---	---	143,897	48,080	191,977	-115	176,938	176,823	15,243
December	13	2006	---	---	146,570	46,906	193,476	118,890	65,692	184,582	12,057
December	14	2006	---	---	115,133	39,593	154,726	146,113	-159	145,955	12,323
December	15	2006	---	---	146,521	48,720	195,241	186,965	-157	186,807	11,512
December	16	2006	---	---	146,965	48,401	195,366	109,600	75,824	185,424	13,820
December	17	2006	---	---	138,057	47,506	185,562	-120	176,591	176,471	14,050
December	18	2006	---	---	144,802	49,481	194,282	15,124	152,068	167,192	13,903
December	19	2006	---	---	145,919	49,718	195,637	-126	197,094	196,967	14,957
December	20	2006	---	---	145,764	49,858	195,621	-123	187,246	187,123	12,247
December	21	2006	---	---	145,814	49,663	195,477	-120	173,678	173,558	12,175
December	22	2006	---	---	145,945	49,445	195,390	-122	186,939	186,817	14,021
December	23	2006	---	---	146,151	49,154	195,305	-118	183,785	183,667	14,164
December	24	2006	---	---	146,613	48,396	195,009	-116	171,307	171,191	13,891
December	25	2006	---	---	148,436	46,977	195,412	-118	186,042	185,923	13,949
December	26	2006	---	---	148,347	47,142	195,489	-112	184,015	183,904	12,431
December	27	2006	---	---	148,298	47,166	195,464	-112	188,684	188,572	11,687
December	28	2006	---	---	113,042	37,508	150,550	-117	125,379	125,262	10,419
December	29	2006	---	---	147,763	48,363	196,126	-108	189,210	189,102	13,862
December	30	2006	---	---	150,516	47,449	197,965	-113	189,408	189,295	13,881
December	31	2006	---	---	147,773	47,714	195,487	-115	183,681	183,566	14,257
Total Monthly Volumes (gal)			---	---	**4,446,113**	**1,494,533**	**5,940,646**	**573,676**	**4,968,336**	**5,542,012**	**421,140**
Average Pump/Injection Rates (gpm)			---	---	**99.6**	**33.5**	**133.1**	**12.8**	**111.3**	**124.1**	**9.4**

NOTES:
gal: gallons
gpm: gallons per minute
RO: Reverse Osmosis
(1) Negative daily volumes reflect periods with the well was offline and are a result of small computational error in the electronic records. The negative values are nonethless kept as part of the monthly record for any well that was in operation during the month to maintain consistency with the onsite electronic records.

Appendix D
Operations and Maintenance Log

APPENDIX D

Semi Annual Operations and Maintenance Log
July 1, 2006 through December 31, 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 from July 1, 2006 through December 31, 2006 attributed to system operations and maintenance are listed below.

July 2006

- **July 1, 2006 (unplanned)**: The extraction well system was shut down from 4:24 p.m. until 5:01 p.m. to switch to generator power after a weather-caused power failure. Extraction system downtime was 37 minutes.
- **July 2, 2006 (unplanned)**: The extraction well system was shut down from 6:06 a.m. until 6:11 a.m. to return operations to Needles power. Extraction system downtime was 5 minutes.
- **July 3, 2006 (unplanned)**: The extraction well system was shut down from 10:45 a.m. until 10:54 a.m. due to a Needles power imbalance (non-weather related). Extraction system downtime was 5 minutes.
- **July 4, 2006 (unplanned)**: The extraction well system was shut down from 2:18 p.m. until 2:34 p.m. to switch to generator power after a weather-caused power failure. Extraction system downtime was 16 minutes.
- **July 5, 2006 (unplanned)**: The extraction well system was shut down from 6:37 a.m. until 6:53 a.m. to return operations to Needles power. Extraction system downtime was 16 minutes.
- **July 6, 2006 (unplanned)**: The extraction well system was shut down from 9:27 p.m. until 9:47 p.m. to switch to generator power after a weather-caused power failure. Extraction system downtime was 20 minutes.
- **July 9, 2006 (unplanned)**: The extraction well system was shut down from 2:15 p.m. until 2:20 p.m. to return operations to Needles power. Extraction system downtime was 5 minutes.
- **July 10, 2006 (unplanned)**: The extraction well system was shut down from 7:01 a.m. until 7:24 p.m. to replace the uninterruptible power supply to the human-machine interface (HMI). Extraction system downtime was 23 minutes.
- **July 11, 2006 (unplanned)**: The extraction well system was shut down from 9:11 p.m. until 12:07 p.m. for replacement of the polymer system feed pump P-804 that failed with

a temporary oversized shelf spare. Extraction system downtime was 2 hours 54 minutes.

- **July 14, 2006 (unplanned)**: The extraction well system was shut down from 1:40 p.m. until 2:23 p.m. to replace polymer pump P-804 with correct-sized pump. Extraction system downtime was 43 minutes.
- **July 15, 2006 (unplanned)**: The extraction well system was shut down from 6:43 p.m. until 7:11 p.m. to switch to generator power after a weather-caused power failure. Extraction system downtime was 28 minutes.
- **July 16, 2006 (unplanned)**: The extraction well system was shut down from 5:51 a.m. until 6:01 a.m. to return operations to Needles power. Extraction system downtime was 10 minutes.
- **July 24, 2006 (unplanned)**: The extraction well system was shut down from 6:10 p.m. until 6:22 p.m. to switch to generator power after a weather-caused power failure and from 10:24 p.m. until 10:28 p.m. to return operations to Needles power. Extraction system downtime was 16 minutes.
- **July 25, 2006 (unplanned)**: The extraction well system was shut down from 3:52 p.m. until 4:09 p.m., 8:18 p.m. until 8:23 p.m., 10:02 to 10:07 p.m., and 10:27 to 10:29 p.m. due to a Needles power imbalance (non-weather related) and eventual switch to generator power. Extraction system downtime was 29 minutes.
- **July 26, 2006 (unplanned)**: The extraction well system was shut down from 4:50 a.m. until 4:53 a.m. to return operations to Needles power. Extraction system downtime was 3 minutes.
- **July 28, 2006 (planned)**: The extraction well system was shut down from 11:10 am until 4:21 pm to complete maintenance (i.e. backwashing) of Injection Well IW-02. Approximately 1,800 gallons of purge water were generated during the maintenance and returned to the IM-3 facility for treatment. Extraction system downtime was 5 hours 12 minutes.
- **July 28, 2006 (unplanned)**: The extraction well system was shut down from 9:23 p.m. until 10:53 p.m. due to a Needles power outage caused by electrical storms in the area. Extraction system downtime was 1 hour 30 minutes.
- **July 30, 2006 (unplanned)**: The extraction well system was shut down from 4:25 a.m. until 4:34 a.m. to return operations to Needles power. Extraction system downtime was 9 minutes.

August 2006

- **August 7 and 8, 2006 (unplanned):** Extraction well TW-3D was shut down from 5:13 p.m. on Monday, August 7 until 9:18 a.m. on Tuesday, August 8 due to a leaking pipe gasket in the extraction well vault. A water level sensor located within the extraction well vault identified the leak and automatically shut down TW-3D. The leaking gasket was replaced and TW-3D was back online at 8:28 a.m. on Tuesday, August 8. The leak

was entirely contained within the well vault, which provides secondary containment at the extraction wellhead. No extraction system downtime resulted from this event.

- **August 9, 2006 (unplanned)**: The extraction well system was shut down from 5:03 p.m. until 5:35 p.m. to switch to generator power after a weather-caused power failure. Extraction system downtime was 32 minutes.
- **August 10, 2006 (unplanned)**: The extraction well system was shut down from 4:52 a.m. until 5:00 a.m. to return operations to Needles power. Extraction system downtime was 5 minutes.
- **August 22, 2006 (unplanned)**: The extraction well system was shut down from 7:30 p.m. until 7:44 p.m. to switch to generator power after a weather-caused power failure. Extraction system downtime was 14 minutes.
- **August 23, 2006 (unplanned)**: The extraction well system was shut down from 4:59 a.m. until 5:05 a.m. to return operations to Needles power. Extraction system downtime was 6 minutes.
- **August 23, 2006 (unplanned)**: The extraction well system was shut down from 1:36 p.m. until 2:45 p.m. due to a required repair of a valve on the reverse osmosis unit. Extraction system downtime was 1 hour 9 minutes.
- **August 23, 2006 (unplanned)**: The extraction well system was shut down from 6:26 p.m. until 7:44 p.m. due to a power outage caused by thunderstorms in the area. Extraction system downtime was 1 hour 18 minutes.
- **August 23, 2006 (planned)**: The extraction well system was shut down from 8:53 p.m. until 10:59 p.m. to switch to the offline set of clean microfilter modules as part of normal module maintenance. Extraction system downtime was 2 hours 6 minutes.
- **August 24, 2006 (unplanned)**: The extraction well system was shut down from 3:20 a.m. until 4:33 a.m. to troubleshoot and re-start the microfilter which was shutting down due to a backwash strainer alarm condition. Extraction system downtime was 1 hour 13 minutes.
- **August 25, 2006 (unplanned)**: The extraction well system was shut down from 6:28 a.m. until 6:35 a.m. to return operations to Needles power. Extraction system downtime was 7 minutes.
- **August 31, 2006 (unplanned)**: The extraction well system was shut down from 3:06 p.m. until 3:19 p.m. to switch to generator power after a weather-caused power failure. Extraction system downtime was 13 minutes.

September 2006

- **September 1, 2006 (unplanned):** The extraction well system was shut down from 2:48 a.m. until 2:55 a.m. due to a false high water level alarm in the chromium reduction tank (T-300). The water level indicator was cleaned and put back in service**.** Extraction system downtime was 7 minutes.

- **September 2, 2006 (unplanned):** The extraction well system was shut down from 2:59 p.m. until 10:47 p.m. due to a failure of the primary programmable logic controller (PLC) at the IM-3 Facility. Onsite personnel and offsite experts identified the PLC failure and put the backup PLC into service before bringing the extraction well system and facility back into service. Extraction system downtime was 7 hours 48 minutes.

- **September 3, 2006 (unplanned):** The extraction well system was shut down from 4:59 a.m. until 5:23 a.m. due to an unplanned microfilter shutdown that created a high water level in influent tank T-100. Extraction system downtime was 24 minutes.

- **September 6, 2006 (unplanned):** The extraction well system was shut down from 8:52 a.m. until 5:15 p.m. due to a failure of the high pressure pump on the rental Reverse Osmosis (RO) unit currently in operation. The RO unit vendor, US Filter, was immediately contacted and sent a service man to the site with a replacement pump the same day. Extraction system downtime was 8 hours 22 minutes.

- **September 7, 2006 (unplanned):** The extraction well system was shut down from 7:23 a.m. until 7:27 a.m. and 8:24 p.m. until 8:29 p.m. due to weather-caused power failure and switching to generator power. Extraction system downtime was 9 minutes.

- **September 8, 2006 (unplanned):** The extraction well system was shut down from 5:02 a.m. until 5:10 a.m. to return operations to Needles power. Extraction system downtime was 8 minutes.

- **September 13, 2006 (unplanned):** The extraction well system was shut down from 6:10 p.m. until 6:24 p.m. to switch to generator power after a weather-caused power failure. Extraction system downtime was 14 minutes.

- **September 13, 2006 (unplanned):** The extraction well system was shut down from 9:38 p.m. until 9:44 p.m. to return operations to Needles power. Extraction system downtime was 6 minutes.

- **September 16, 2006 (planned):** The extraction well system was shut down from 2:00 p.m. until 2:25 p.m. while switching to the offline bank of cleaned microfilter modules. Extraction system downtime was 25 minutes.

- **September 27, 2006 (unplanned):** The extraction well system was shut down from 3:20 p.m. until 3:41 p.m. while cleaning a flow switch (FSL-201) in the chemical mixing loop. Extraction system downtime was 21 minutes.

- **September 28 and 29, 2006 (planned):** The extraction well system was shut down periodically on September 28 (3:01 p.m. until 3:05 p.m., 4:18 p.m. until 6:20 p.m., and 9:58 p.m. until 10:53 p.m.) and September 29 (8:31 a.m. until 8:46 a.m., 9:21 a.m. until 9:48 a.m., and from 12:39 p.m. until 12:47 p.m.). The periodic shutdowns were required during the installation and initial testing of newly fabricated pipe and fittings for the facility RO unit. The extraction system downtime to complete this work was 3 hours 47 minutes.

- **September 30, 2006 (unplanned):** The extraction well system was shut down from 8:51 a.m. until 8:55 a.m. due to a false high water level alarm in the chromium reduction

tank (T-300). The water level indicator was cleaned and put back in service. Extraction system downtime was 4 minutes.

October 2006

- **October 2, 2006 (unplanned):** The extraction well system was shut down from 6:52 a.m. to 7:02 a.m. and from 11:29 a.m. until 11:37 a.m. due to City of Needles Electric Department working on power lines in the area. Extraction system downtime was 18 minutes.
- **October 3, 2006 (unplanned):** The extraction well system was shut down from 12:00 p.m. to 12:08 p.m. and from 12:26 p.m. until 12:30 p.m. while troubleshooting a re-start of the Reverse Osmosis Unit. Extraction system downtime was 12 minutes.
- **October 4, 2006 (unplanned):** The extraction well system was shut down from 10:45 a.m. until 10:48 a.m. due to a power imbalance from the City Of Needles electric system. Extraction system downtime was 3 minutes.
- **October 5, 2006 (unplanned):** The extraction well system was automatically shut down due to a high water level alarm in Tank T-100. The extraction wells were temporarily operated in manual mode after the shutdown. Extraction system downtime was 1 minute.
- **October 9, 2006 (unplanned):** The extraction well system was shut down from 2:50 a.m. to 3:20 a.m. and from 7:12 a.m. until 7:28 a.m. due to a high water level alarm in Tank T-100. Extraction system downtime was 46 minutes.
- **October 11, 2006 (unplanned):** The extraction well system was shut down from 8:19 a.m. until 8:26 a.m., from 8:38 a.m. until 8:41 a.m., and from 1:04 p.m. until 1:35 p.m. due to troubleshooting power imbalance issues caused by the City Of Needles electric system. Extraction system downtime was 41 minutes.
- **October 13, 2006 (unplanned):** The extraction well system was shut down from 9:41 a.m. until 9:44 a.m. and from 10:19 a.m. until 10:22 a.m. due to address a power imbalance caused by the City Of Needles electric system. Extraction system downtime was 6 minutes.
- **October 19, 2006 (unplanned):** The extraction well system was shut down from 6:37 a.m. until 6:46 a.m. to address a power imbalance caused by the City Of Needles electric system. Extraction system downtime was 9 minutes.
- **October 26, 2006 (planned)**: The extraction well system was shut down from 11:53 a.m. until 3:35 p.m. to clean out solids that accumulated in the piping between iron oxidation Tanks T-300A and T-301A. Extraction System downtime was 3 hours 42 minutes.

November 2006

- **November 2, 2006 (planned):** The extraction well system was shut down from 9:43 a.m. to 12:02 p.m. to switch to a cleaned set of microfilter modules and to clean the chemical mixing loop and chromium reduction reactor piping. Extraction system downtime was 2 hours 19 minutes.

- **November 21, 2006 (unplanned):** The extraction well system was shut down from 10:58 a.m. to 12:28 p.m. to drain the chromium reduction loop reactor and chemical mixing loop so that the isolation valves around flow sensor FSL-201 could be removed, cleaned and reinstalled. Extraction system downtime was 1 hour 28 minutes.
- **November 28, 2006 (unplanned):** The extraction well system was shut down from 11:44 a.m. until 1:33 p.m. while repairing a connection in the seal water line going into the clarifier feed pump (P-400). Extraction system downtime was 1 hour 49 minutes.

December 2006

- **December 6, 2006 (unplanned):** The extraction well system was shut down from 8:50 a.m. to 8:52 a.m. while taking the plant air compressor offline due to an oil leak within containment and bringing the back-up air compressor into service. Extraction system downtime was 2 minutes.
- **December 11, 2006 (unplanned):** The extraction well system was shut down from 3:40 a.m. to 4:45 a.m. while replacing a drive belt on the facility air compressor. Extraction system downtime was 1 hour 5 minutes.
- **December 12, 2006 (unplanned):** The extraction well system was shut down from 6:18 p.m. to 6:35 p.m. to switch to generator power after a Needles power failure. Extraction system downtime was 17 minutes.
- **December 13, 2006 (unplanned):** The extraction well system was shut down from 2:05 p.m. to 2:08 p.m. to return operations to Needles power. Extraction system downtime was 3 minutes.
- **December 14, 2006 (unplanned):** The extraction well system was shut down from 9:02 a.m. to 1:57 p.m. to repair a basket strainer associated with the microfilter system that had developed a small drip within the containment area. Extraction system downtime was 4 hours 55 minutes.
- **December 17, 2006 (unplanned):** The extraction well system was shut down from 1:29 a.m. to 2:37 a.m. while repairing a drive belt on the blower supplying air to the iron oxidation tanks. Extraction system downtime was 1 hour 8 minutes.
- **December 28, 2006 (unplanned):** The extraction well system was shut down from 8:31 a.m. to 1:59 p.m. to clean piping that had clogged with solids between iron oxidation tanks T-300A and T-301A. Extraction system downtime was 6 hours 28 minutes.